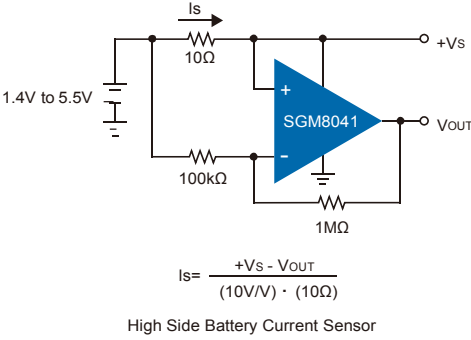


# Nano Power Operational Amplifiers

The Nano Power Operational Amplifier family is designed to support rail-to-rail input and output operation and has as low as 350nA quiescent current. These specifications make these operational amplifiers extremely appropriate for low frequency low power applications, such as battery current monitoring and sensor conditioning.



| Amplifiers<br>per<br>Package | Part<br>Number | I <sub>Q</sub> /Amp Typ<br>(μA) | Shut-<br>down | V <sub>CC</sub><br>(V) | GBP<br>Typ<br>(kHz) | Slew Rate<br>Typ<br>(V/ms) | E <sub>NOISE</sub><br>0.1Hz ~ 10Hz<br>(μV <sub>PP</sub> ) | E <sub>NOISE</sub><br>Typ @1kHz<br>(nV/√Hz) | V <sub>OS</sub><br>Max @25°C<br>(mV) | TC of V <sub>OS</sub><br>Typ<br>(μV/°C) | I <sub>B</sub> Typ<br>(pA) | A <sub>VO</sub> Typ<br>(dB) | CMRR Typ<br>(dB) | Rail-to<br>-Rail<br>Input | Rail-to<br>-Rail<br>Output | Package                       | Features                                                      |
|------------------------------|----------------|---------------------------------|---------------|------------------------|---------------------|----------------------------|-----------------------------------------------------------|---------------------------------------------|--------------------------------------|-----------------------------------------|----------------------------|-----------------------------|------------------|---------------------------|----------------------------|-------------------------------|---------------------------------------------------------------|
| 1                            | SGM8041        | 0.71                            | No            | 1.4 ~ 5.5              | 14.5                | 3.3                        | 3.4                                                       | 135                                         | 2.5                                  | 2.5                                     | 1                          | 93                          | 84               | Yes                       | Yes                        | SOT-23-5,SOIC-8,MSOP-8        | Very Low Quiescent Current, Rail-to-Rail Input and Output     |
| 2                            | SGM8042        | 0.67                            | No            | 1.4 ~ 5.5              | 14.5                | 4.2                        | 3.2                                                       | 180                                         | 2.5                                  | 2.5                                     | 1                          | 93                          | 84               | Yes                       | Yes                        | SOIC-8,MSOP-8                 | Very Low Quiescent Current, Rail-to-Rail Input and Output     |
| 4                            | SGM8044        | 0.67                            | No            | 1.4 ~ 5.5              | 15                  | 3.4                        | 3.2                                                       | 190                                         | 2.5                                  | 2.5                                     | 1                          | 93                          | 83               | Yes                       | Yes                        | SOIC-14,TSSOP-14,TQFN-3×3-16L | Very Low Quiescent Current, Rail-to-Rail Input and Output     |
| 1                            | SGM8045        | 0.71                            | No            | 1.4 ~ 5.5              | 100                 | 16                         | 3.2                                                       | 160                                         | 2.5                                  | 2.5                                     | 1                          | 93                          | 84               | Yes                       | Yes                        | SOT-23-5,SOIC-8,MSOP-8        | Stable for Gain of 10, 100kHz, Very Low I <sub>Q</sub> , RRIO |
| 2                            | SGM8046        | 0.67                            | No            | 1.4 ~ 5.5              | 100                 | 14.5                       | 3                                                         | 190                                         | 2.5                                  | 2.5                                     | 1                          | 92                          | 82               | Yes                       | Yes                        | SOIC-8,MSOP-8                 | Stable for Gain of 10, 100kHz, Very Low I <sub>Q</sub> , RRIO |
| 4                            | SGM8048        | 0.69                            | No            | 1.4 ~ 5.5              | 100                 | 14.5                       | 3.5                                                       | 205                                         | 2.5                                  | 2.5                                     | 1                          | 92                          | 83               | Yes                       | Yes                        | SOIC-14,TSSOP-14              | Stable for Gain of 10, 100kHz, Very Low I <sub>Q</sub> , RRIO |
| 1                            | SGM8141        | 0.38                            | No            | 1.4 ~ 5.5              | 5                   | 1.5                        | 4.9                                                       | 125                                         | 2.5                                  | 2                                       | 1                          | 90                          | 80               | Yes                       | Yes                        | SOT-23-5,SOIC-8,MSOP-8        | Ultra Low Quiescent Current, Rail-to-Rail Input and Output    |
| 2                            | SGM8142        | 0.35                            | No            | 1.4 ~ 5.5              | 5                   | 1.6                        | 4                                                         | 130                                         | 2.5                                  | 2                                       | 1                          | 93                          | 83               | Yes                       | Yes                        | SOIC-8,MSOP-8                 | Ultra Low Quiescent Current, Rail-to-Rail Input and Output    |

# Micro Power Operational Amplifiers

The Micro Power Operational Amplifier family is designed to support rail-to-rail input and output operation and has as low as 2.5μA quiescent current. These specifications make these operational amplifiers extremely appropriate for low frequency low power applications, such as battery current monitoring and sensor conditioning.

| Amplifiers<br>per<br>Package | Part<br>Number | I <sub>Q</sub> /Amp Typ<br>(μA) | Shut-<br>down | V <sub>CC</sub><br>(V) | GBP<br>Typ<br>(MHz) | Slew Rate<br>Typ<br>(V/ms) | E <sub>NOISE</sub><br>0.1Hz ~ 10Hz<br>(μV <sub>PP</sub> ) | E <sub>NOISE</sub><br>Typ @1kHz<br>(nV/√Hz) | V <sub>OS</sub><br>Max @25°C<br>(mV) | TC of V <sub>OS</sub><br>Typ<br>(μV/°C) | I <sub>B</sub> Typ<br>(pA) | A <sub>VO</sub> Typ<br>(dB) | CMRR Typ<br>(dB) | Rail-to<br>-Rail<br>Input | Rail-to<br>-Rail<br>Output | Package                     | Features                                                           |
|------------------------------|----------------|---------------------------------|---------------|------------------------|---------------------|----------------------------|-----------------------------------------------------------|---------------------------------------------|--------------------------------------|-----------------------------------------|----------------------------|-----------------------------|------------------|---------------------------|----------------------------|-----------------------------|--------------------------------------------------------------------|
| 1                            | SGM321         | 60                              | No            | 2.1 ~ 5.5              | 1                   | 520                        |                                                           | 27                                          | 5                                    | 2.7                                     | 10                         | 84                          | 68               | Yes                       | Yes                        | SC70-5,SOT-23-5             | General Purpose Low Power Amp                                      |
| 4                            | SGM324         | 60                              | No            | 2.1 ~ 5.5              | 1                   | 520                        |                                                           | 27                                          | 5                                    | 2.7                                     | 10                         | 84                          | 68               | Yes                       | Yes                        | SOIC-14,TSSOP-14            | General Purpose Low Power Amp                                      |
| 2                            | SGM358         | 60                              | No            | 2.1 ~ 5.5              | 1                   | 520                        |                                                           | 27                                          | 5                                    | 2.7                                     | 10                         | 84                          | 68               | Yes                       | Yes                        | SOIC-8,MSOP-8,DIP-8         | General Purpose Low Power Amp                                      |
| 1                            | SGM8049-1      | 2.5                             | No            | 1.8 ~ 5.5              | 0.12                | 80                         | 3.5                                                       | 75                                          | 0.85                                 | 0.6                                     | 1                          | 118                         | 100              | Yes                       | Yes                        | SOT-23-5,SC70-5,TDFN-2×2-6L | Pico Amp Input Current, Micro Power, Rail-to-Rail Input and Output |
| 2                            | SGM8049-2      | 2.5                             | No            | 1.8 ~ 5.5              | 0.12                | 80                         | 3.5                                                       | 75                                          | 0.85                                 | 0.6                                     | 1                          | 118                         | 100              | Yes                       | Yes                        | SOT-23-8,SOIC-8             | Pico Amp Input Current, Micro Power, Rail-to-Rail Input and Output |
| 4                            | SGM8049-4      | 2.5                             | No            | 1.8 ~ 5.5              | 0.12                | 80                         | 3.5                                                       | 75                                          | 0.85                                 | 0.6                                     | 1                          | 118                         | 100              | Yes                       | Yes                        | TSSOP-14                    | Pico Amp Input Current, Micro Power, Rail-to-Rail Input and Output |
| 1                            | SGM8210-1      | 50                              | No            | 3.3 ~ 24               | 1                   | 300                        | 3                                                         | 25                                          | 1                                    | 1                                       | 5                          | 120                         | 115              | Yes                       | Yes                        | SOT-23-5,SC70-5             | High Voltage, Micro Power, Precision                               |
| 2                            | SGM8210-2      | 50                              | No            | 3.3 ~ 24               | 1                   | 300                        | 3                                                         | 25                                          | 1                                    | 1                                       | 5                          | 120                         | 115              | Yes                       | Yes                        | SOIC-8,MSOP-8,TDFN-2×3-8L   | High Voltage, Micro Power, Precision                               |
| 4                            | SGM8210-4      | 50                              | No            | 3.3 ~ 24               | 1                   | 300                        | 3                                                         | 25                                          | 1                                    | 1                                       | 5                          | 120                         | 115              | Yes                       | Yes                        | SOIC-14                     | High Voltage, Micro Power, Precision                               |
| 1                            | SGM8240-1      | 2.8                             | No            | 2.7 ~ 24               | 0.1                 | 50                         | 3                                                         | 100                                         | 1                                    | 3                                       | 5                          | 120                         | 110              | Yes                       | Yes                        | SC70-5,SOT-23-5             | High Voltage, Micro Power, Precision                               |
| 2                            | SGM8240-2      | 2.8                             | No            | 2.7 ~ 24               | 0.1                 | 50                         | 3                                                         | 100                                         | 1                                    | 3                                       | 5                          | 120                         | 110              | Yes                       | Yes                        | TDFN-2×3-8L,SOIC-8,MSOP-8   | High Voltage, Micro Power, Precision                               |
| 4                            | SGM8240-4      | 2.8                             | No            | 2.7 ~ 24               | 0.1                 | 50                         | 3                                                         | 100                                         | 1                                    | 3                                       | 5                          | 120                         | 110              | Yes                       | Yes                        | SOIC-14                     | High Voltage, Micro Power, Precision                               |
| 1                            | SGM8271        | 144                             | No            | 4.5 ~ 36               | 1.4                 | 5000                       |                                                           | 45                                          | 3                                    | 3                                       | 20                         | 86                          | 84               | No                        | Yes                        | SOT-23-5,SOIC-8,MSOP-8      | 1.4MHz/5V/μs, Low Power, Rail-to-Rail Output                       |
| 2                            | SGM8272        | 144                             | No            | 4.5 ~ 36               | 1.4                 | 5000                       |                                                           | 45                                          | 3                                    | 3                                       | 20                         | 86                          | 84               | No                        | Yes                        | SOIC-8,MSOP-8               | 1.4MHz/5V/μs, Low Power, Rail-to-Rail Output                       |
| 4                            | SGM8274        | 144                             | No            | 4.5 ~ 36               | 1.4                 | 5000                       |                                                           | 45                                          | 3                                    | 3                                       | 20                         | 86                          | 84               | No                        | Yes                        | SOIC-14,TSSOP-14            | 1.4MHz/5V/μs, Low Power, Rail-to-Rail Output                       |
| 1                            | SGM8521        | 5.5                             | No            | 2.1 ~ 5.5              | 0.15                | 50                         |                                                           | 85                                          | 3.5                                  | 0.5                                     | 0.5                        | 110                         | 87               | Yes                       | Yes                        | SOT-23-5,SOIC-8             | Low Bias Current, Micro Power, Rail-to-Rail Input and Output       |
| 2                            | SGM8522        | 5.5                             | No            | 2.1 ~ 5.5              | 0.15                | 50                         |                                                           | 85                                          | 3.5                                  | 0.5                                     | 0.5                        | 110                         | 87               | Yes                       | Yes                        | SOIC-8,MSOP-8               | Low Bias Current, Micro Power, Rail-to-Rail Input and Output       |
| 4                            | SGM8524        | 5.5                             | No            | 2.1 ~ 5.5              | 0.15                | 50                         |                                                           | 85                                          | 3.5                                  | 0.5                                     | 0.5                        | 110                         | 87               | Yes                       | Yes                        | SOIC-14,TSSOP-14            | Low Bias Current, Micro Power, Rail-to-Rail Input and Output       |

# Micro Power Operational Amplifiers

Operational Amplifier,  
Comparator

| Amplifiers<br>per<br>Package | Part<br>Number | I <sub>Q</sub> /Amp Typ<br>(μA) | Shut-<br>down | V <sub>CC</sub><br>(V) | GBP<br>Typ<br>(MHz) | Slew Rate<br>Typ<br>(V/ms) | E <sub>NOISE</sub><br>0.1Hz ~ 10Hz<br>(μV <sub>PP</sub> ) | E <sub>NOISE</sub><br>Typ @1kHz<br>(nV/√Hz) | V <sub>OS</sub><br>Max @25°C<br>(mV) | TC of V <sub>OS</sub><br>Typ<br>(μV/°C) | I <sub>B</sub> Typ<br>(pA) | A <sub>VO</sub> Typ<br>(dB) | CMRR Typ<br>(dB) | Rail-to<br>-Rail<br>Input | Rail-to<br>-Rail<br>Output | Package                       | Features                                                           |
|------------------------------|----------------|---------------------------------|---------------|------------------------|---------------------|----------------------------|-----------------------------------------------------------|---------------------------------------------|--------------------------------------|-----------------------------------------|----------------------------|-----------------------------|------------------|---------------------------|----------------------------|-------------------------------|--------------------------------------------------------------------|
| 1                            | SGM8531        | 18                              | No            | 2.1 ~ 5.5              | 0.5                 | 200                        |                                                           | 33                                          | 3.5                                  | 1.7                                     | 0.5                        | 104                         | 75               | Yes                       | Yes                        | SOT-23-5,SOIC-8               | Low Bias Current, Micro Power, Rail-to-Rail Input and Output       |
| 2                            | SGM8532        | 18                              | No            | 2.1 ~ 5.5              | 0.5                 | 200                        |                                                           | 33                                          | 3.5                                  | 1.7                                     | 0.5                        | 104                         | 75               | Yes                       | Yes                        | SOIC-8,MSOP-8                 | Low Bias Current, Micro Power, Rail-to-Rail Input and Output       |
| 4                            | SGM8534        | 18                              | No            | 2.1 ~ 5.5              | 0.5                 | 200                        |                                                           | 33                                          | 3.5                                  | 1.7                                     | 0.5                        | 104                         | 75               | Yes                       | Yes                        | SOIC-14,TSSOP-14              | Low Bias Current, Micro Power, Rail-to-Rail Input and Output       |
| 1                            | SGM8535        | 80                              | No            | 1.8 ~ 5.5              | 1.5                 | 800                        |                                                           | 30                                          | 3.4                                  | 1.5                                     | 3                          | 103                         | 85               | No                        | Yes                        | SOT-23-5,SC70-5,SOIC-8,MSOP-8 | 1.5MHz/1.8V, Unity Gain Stable, Rail-to-Rail Output                |
| 2                            | SGM8536        | 80                              | No            | 1.8 ~ 5.5              | 1.5                 | 800                        |                                                           | 30                                          | 3.4                                  | 1.5                                     | 3                          | 103                         | 85               | No                        | Yes                        | SOIC-8,MSOP-8                 | 1.5MHz/1.8V, Unity Gain Stable, Rail-to-Rail Output                |
| 1                            | SGM8537        | 80                              | Yes           | 1.8 ~ 5.5              | 1.5                 | 800                        |                                                           | 30                                          | 3.4                                  | 1.5                                     | 3                          | 103                         | 85               | No                        | Yes                        | SOT-23-6,SOIC-8,MSOP-8        | 1.5MHz/1.8V, Unity Gain Stable, Rail-to-Rail Output                |
| 4                            | SGM8538        | 80                              | No            | 1.8 ~ 5.5              | 1.5                 | 800                        |                                                           | 30                                          | 3.4                                  | 1.5                                     | 3                          | 103                         | 85               | No                        | Yes                        | SOIC-14,TSSOP-14              | 1.5MHz/1.8V, Unity Gain Stable, Rail-to-Rail Output                |
| 1                            | SGM8541        | 46                              | No            | 2.1 ~ 5.5              | 1.1                 | 520                        |                                                           | 27                                          | 3.5                                  | 2.7                                     | 0.5                        | 105                         | 80               | Yes                       | Yes                        | SOT-23-5,SOIC-8,SC70-5        | Pico Amp Input Current, Micro Power, Rail-to-Rail Input and Output |
| 2                            | SGM8542        | 46                              | No            | 2.1 ~ 5.5              | 1.1                 | 520                        |                                                           | 27                                          | 3.5                                  | 2.7                                     | 0.5                        | 105                         | 80               | Yes                       | Yes                        | SOIC-8,MSOP-8,TSSOP-8         | Pico Amp Input Current, Micro Power, Rail-to-Rail Input and Output |
| 1                            | SGM8543        | 48                              | Yes           | 2.1 ~ 5.5              | 1.1                 | 520                        |                                                           | 27                                          | 3.5                                  | 2.7                                     | 0.5                        | 105                         | 76               | Yes                       | Yes                        | SOT-23-6,SOIC-8               | Pico Amp Input Current, Micro Power, Rail-to-Rail Input and Output |
| 4                            | SGM8544        | 46                              | No            | 2.1 ~ 5.5              | 1.1                 | 520                        |                                                           | 27                                          | 3.5                                  | 2.7                                     | 0.5                        | 105                         | 80               | Yes                       | Yes                        | SOIC-14,TSSOP-14              | Pico Amp Input Current, Micro Power, Rail-to-Rail Input and Output |
| 1                            | SGM8545        | 48                              | No            | 2.1 ~ 5.5              | 1.1                 | 520                        |                                                           | 27                                          | 3.5                                  | 2.7                                     | 0.5                        | 105                         | 76               | Yes                       | Yes                        | SOT-23-5                      | Pico Amp Input Current, Micro Power, Rail-to-Rail Input and Output |

Audio/Video

# High Speed Operational Amplifiers

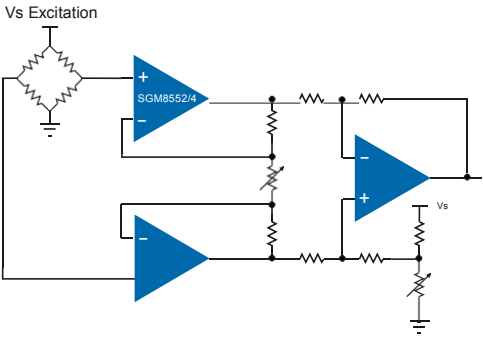
Analog Switch

| Amplifiers<br>per<br>Package | Part<br>Number | GBP<br>Typ<br>(MHz) | Bandwidth<br>@-3dB<br>(MHz) | Shut-<br>down | V <sub>CC</sub><br>(V) | Slew Rate<br>Typ<br>(V/μs) | E <sub>NOISE</sub><br>Typ @1MHz<br>(nV/√Hz) | V <sub>OS</sub><br>Max @25°C<br>(mV) | TC of V <sub>OS</sub><br>Typ<br>(μV/°C) | I <sub>B</sub> Typ<br>(pA) | I <sub>Q</sub> /Amp Typ<br>(mA) | A <sub>VO</sub> Typ<br>(dB) | CMRR Typ<br>(dB) | Rail-to<br>-Rail<br>Input | Rail-to<br>-Rail<br>Output | Package                | Features                                     |
|------------------------------|----------------|---------------------|-----------------------------|---------------|------------------------|----------------------------|---------------------------------------------|--------------------------------------|-----------------------------------------|----------------------------|---------------------------------|-----------------------------|------------------|---------------------------|----------------------------|------------------------|----------------------------------------------|
| 1                            | SGM8051        |                     | 250                         | No            | 2.5 ~ 5.5              | 130                        | 8.1                                         | 8                                    | 4.4                                     | 6                          | 2.3                             | 104                         | 80               | No                        | Yes                        | SOT-23-5,SOIC-8        | 250MHz Rail-to-Rail Output Amp               |
| 2                            | SGM8052        |                     | 250                         | No            | 2.5 ~ 5.5              | 130                        | 8.1                                         | 8                                    | 4.4                                     | 6                          | 2.3                             | 104                         | 80               | No                        | Yes                        | SOIC-8,MSOP-8          | 250MHz Rail-to-Rail Output Amp               |
| 1                            | SGM8053        |                     | 250                         | Yes           | 2.5 ~ 5.5              | 130                        | 8.1                                         | 8                                    | 4.4                                     | 6                          | 2.3                             | 104                         | 80               | No                        | Yes                        | SOT-23-6,SOIC-8        | 250MHz Rail-to-Rail Output Amp with Shutdown |
| 4                            | SGM8054        |                     | 250                         | No            | 2.5 ~ 5.5              | 130                        | 8.1                                         | 8                                    | 4.4                                     | 6                          | 2.3                             | 104                         | 80               | No                        | Yes                        | SOIC-14,TSSOP-14       | 250MHz Rail-to-Rail Output Amp               |
| 2                            | SGM8055        |                     | 250                         | Yes           | 2.5 ~ 5.5              | 130                        | 8.1                                         | 8                                    | 4.4                                     | 6                          | 2.3                             | 104                         | 80               | No                        | Yes                        | MSOP-10                | 250MHz Rail-to-Rail Output Amp with Shutdown |
| 1                            | SGM80581       | 100                 | 220                         | No            | 2.5 ~ 5.5              | 160                        | 7                                           | 3                                    |                                         | 2                          | 4.5                             | 109                         | 71               | Yes                       | Yes                        | SOT-23-5,SOIC-8        | 220MHz Rail-to-Rail Input and Output Amp     |
| 2                            | SGM80582       | 100                 | 220                         | No            | 2.5 ~ 5.5              | 160                        | 7                                           | 3                                    |                                         | 2                          | 4.5                             | 109                         | 71               | Yes                       | Yes                        | SOIC-8,MSOP-8          | 220MHz Rail-to-Rail Input and Output Amp     |
| 4                            | SGM80584       | 100                 | 220                         | No            | 2.5 ~ 5.5              | 160                        | 7                                           | 3                                    |                                         | 2                          | 4.5                             | 109                         | 71               | Yes                       | Yes                        | SOIC-14                | 220MHz Rail-to-Rail Input and Output Amp     |
| 1                            | SGM8061        |                     | 500                         | No            | 2.5 ~ 5.5              | 420                        | 5.6                                         | 8                                    | 3                                       | 6                          | 8.2                             | 104                         | 80               | No                        | Yes                        | SOT-23-5,SOIC-8        | 500MHz Rail-to-Rail Output Amp               |
| 2                            | SGM8062        |                     | 500                         | No            | 2.5 ~ 5.5              | 420                        | 5.6                                         | 8                                    | 3                                       | 6                          | 8.2                             | 104                         | 80               | No                        | Yes                        | SOIC-8                 | 500MHz Rail-to-Rail Output Amp               |
| 1                            | SGM8063        |                     | 500                         | Yes           | 2.5 ~ 5.5              | 420                        | 5.6                                         | 8                                    | 3                                       | 6                          | 8.2                             | 104                         | 80               | No                        | Yes                        | SOT-23-6,SOIC-8        | 500MHz Rail-to-Rail Output Amp with Shutdown |
| 1                            | SGM8091        |                     | 350                         | No            | 2.5 ~ 5.5              | 265                        | 5.9                                         | 8                                    | 3.7                                     | 6                          | 4.3                             | 104                         | 80               | No                        | Yes                        | SOT-23-5,SOIC-8        | 350MHz Rail-to-Rail Output Amp               |
| 2                            | SGM8092        |                     | 350                         | No            | 2.5 ~ 5.5              | 265                        | 5.9                                         | 8                                    | 3.7                                     | 6                          | 4.3                             | 104                         | 80               | No                        | Yes                        | SOIC-8,MSOP-8          | 350MHz Rail-to-Rail Output Amp               |
| 1                            | SGM8093        |                     | 350                         | Yes           | 2.5 ~ 5.5              | 265                        | 5.9                                         | 8                                    | 3.7                                     | 6                          | 4.3                             | 104                         | 80               | No                        | Yes                        | SOT-23-6,SOIC-8        | 350MHz Rail-to-Rail Output Amp with Shutdown |
| 4                            | SGM8094        |                     | 350                         | No            | 2.5 ~ 5.5              | 265                        | 5.9                                         | 8                                    | 3.7                                     | 6                          | 4.3                             | 104                         | 80               | No                        | Yes                        | SOIC-14,TSSOP-14       | 350MHz Rail-to-Rail Output Amp               |
| 1                            | SGM8301        | 57                  | 110                         | No            | 4.5 ~ 12               | 140                        | 65††                                        | 18                                   | 12                                      |                            | 7.5                             | 105                         | 75               | No                        | Yes                        | SOT-23-5,SOIC-8,MSOP-8 | 110MHz High Voltage Rail-to-Rail Output Amp  |
| 2                            | SGM8302        | 57                  | 110                         | No            | 4.5 ~ 12               | 140                        | 65††                                        | 18                                   | 12                                      |                            | 7.5                             | 105                         | 75               | No                        | Yes                        | SOIC-8,MSOP-8          | 110MHz High Voltage Rail-to-Rail Output Amp  |
| 4                            | SGM8304        | 57                  | 110                         | No            | 4.5 ~ 12               | 140                        | 65††                                        | 18                                   | 12                                      |                            | 7.5                             | 105                         | 75               | No                        | Yes                        | SOIC-14,TSSOP-14       | 110MHz High Voltage Rail-to-Rail Output Amp  |
| 1                            | SGM8965-1      | 50                  |                             | No            | 2.2 ~ 5.5              | 30                         | 4.5†                                        | 0.25                                 | 1.2                                     | 0.5                        | 5.3                             | 115                         | 100              | Yes                       | Yes                        | SOT-23-5,SOIC-8        | 50MHz, High Precision Amp                    |
| 2                            | SGM8965-2      | 50                  |                             | No            | 2.2 ~ 5.5              | 30                         | 4.5†                                        | 0.25                                 | 1.2                                     | 0.5                        | 5.3                             | 115                         | 100              | Yes                       | Yes                        | SOIC-8,MSOP-8          | 50MHz, High Precision Amp                    |

Notes: † Typical Values @100kHz    †† Typical Values @10kHz

# High Precision Operational Amplifiers

The High Precision Operational Amplifier family provides high precision, low noise, low drift, rail-to-rail input and output, and single/dual/quad channel operational amplifiers. The internal auto-zero circuit cancels the input offset voltage and drift over time and temperature, and eliminates the 1/f noise as well. The combination of these characteristics makes them good choices for temperature, position and pressure sensors, medical equipment, strain gauge amplifiers, or any other industrial applications requiring high precision, low noise and long term stability.



| Amplifiers<br>per<br>Package | Part<br>Number | V <sub>OS</sub>   | TC of V <sub>OS</sub> |                            |               |                        | GBP          | Slew Rate     | E <sub>NOISE</sub>                  | E <sub>NOISE</sub>    | I <sub>O</sub> /Amp Typ<br>(μA) | A <sub>VO</sub> Typ<br>(dB) | CMRR Typ<br>(dB) | Rail-to-       | Rail-to-        | Package                               | Features                                                                |
|------------------------------|----------------|-------------------|-----------------------|----------------------------|---------------|------------------------|--------------|---------------|-------------------------------------|-----------------------|---------------------------------|-----------------------------|------------------|----------------|-----------------|---------------------------------------|-------------------------------------------------------------------------|
|                              |                | Max @25°C<br>(mV) | Typ<br>(μV/°C)        | I <sub>S</sub> Typ<br>(pA) | Shut-<br>down | V <sub>CC</sub><br>(V) | Typ<br>(MHz) | Typ<br>(V/μs) | 0.1Hz ~ 10Hz<br>(μV <sub>PP</sub> ) | Typ @1kHz<br>(nV/√Hz) |                                 |                             |                  | -Rail<br>Input | -Rail<br>Output |                                       |                                                                         |
| 1                            | SGM8251        | 0.024             | 0.075                 | 100                        | No            | 4.5 ~ 36               | 3.1          | 1.7           | 1                                   | 56                    | 450                             | 135                         | 125              | No             | Yes             | SOT-23-5,SOIC-8,MSOP-8                | High Voltage, Very High Precision, Low Noise                            |
| 2                            | SGM8252        | 0.024             | 0.075                 | 100                        | No            | 4.5 ~ 36               | 3.1          | 1.7           | 1                                   | 56                    | 450                             | 135                         | 125              | No             | Yes             | SOIC-8,MSOP-8                         | High Voltage, Very High Precision, Low Noise                            |
| 1                            | SGM8255-1      | 0.02              | 0.028                 | 200                        | No            | 4.5 ~ 36               | 9            | 5             | 0.48                                | 25                    | 800                             | 133                         | 112              | No             | Yes             | SOT-23-5,SC70-5,SOIC-8,MSOP-8         | High Voltage, Ultra High Precision, Low Noise                           |
| 2                            | SGM8255-2      | 0.02              | 0.028                 | 200                        | No            | 4.5 ~ 36               | 9            | 5             | 0.48                                | 25                    | 800                             | 133                         | 112              | No             | Yes             | SOIC-8,MSOP-8                         | High Voltage, Ultra High Precision, Low Noise                           |
| 4                            | SGM8255-4      | 0.02              | 0.028                 | 200                        | No            | 4.5 ~ 36               | 9            | 5             | 0.48                                | 25                    | 800                             | 133                         | 112              | No             | Yes             | SOIC-14                               | High Voltage, Ultra High Precision, Low Noise                           |
| 1                            | SGM8291        | 1.5               | 3                     | 20                         | No            | 4.5 ~ 36               | 1.4          | 5             |                                     | 45                    | 144                             | 86                          | 84               | No             | Yes             | SOT-23-5,SOIC-8,MSOP-8                | High Voltage, Precision, Low Power, Rail-to-Rail Output                 |
| 2                            | SGM8292        | 1.5               | 3                     | 20                         | No            | 4.5 ~ 36               | 1.4          | 5             |                                     | 45                    | 144                             | 86                          | 84               | No             | Yes             | SOIC-8,MSOP-8                         | High Voltage, Precision, Low Power, Rail-to-Rail Output                 |
| 4                            | SGM8294        | 1.5               | 3                     | 20                         | No            | 4.5 ~ 36               | 1.4          | 5             |                                     | 45                    | 144                             | 86                          | 84               | No             | Yes             | SOIC-14,TSSOP-14                      | High Voltage, Precision, Low Power, Rail-to-Rail Output                 |
| 1                            | SGM8551        | 0.02              | 0.02                  | 10                         | No            | 2.5 ~ 5.5              | 1.53         | 0.9           | 0.8                                 | 47.5                  | 930                             | 145                         | 105              | Yes            | Yes             | SOT-23-5,SOIC-8,MSOP-8                | Ultra High Precision, Low Noise, Zero-Drift                             |
| 2                            | SGM8552        | 0.02              | 0.02                  | 10                         | No            | 2.5 ~ 5.5              | 1.53         | 0.9           | 0.8                                 | 47.5                  | 465                             | 145                         | 105              | Yes            | Yes             | SOIC-8,MSOP-8                         | Ultra High Precision, Low Noise, Zero-Drift                             |
| 4                            | SGM8554        | 0.02              | 0.07                  | 10                         | No            | 2.5 ~ 5.5              | 1.5          | 1             | 1.6                                 | 63                    | 465                             | 145                         | 105              | Yes            | Yes             | SOIC-14,TSSOP-14                      | Ultra High Precision, Low Noise, Zero-Drift                             |
| 1                            | SGM8555        | 0.09              | 0.05                  | 30                         | No            | 2.5 ~ 5.5              | 3.5          | 3             | 0.6                                 | 21                    | 950                             | 133                         | 98               | Yes            | Yes             | SOT-23-5,SOIC-8,MSOP-8                | 3.5MHz, 3V/μs, High Precision, Low Noise, RRIO                          |
| 2                            | SGM8556        | 0.09              | 0.05                  | 30                         | No            | 2.5 ~ 5.5              | 3.5          | 3             | 0.6                                 | 21                    | 950                             | 133                         | 98               | Yes            | Yes             | SOIC-8,MSOP-8                         | 3.5MHz, 3V/μs, High Precision, Low Noise, RRIO                          |
| 1                            | SGM8557-1      | 0.005             | 0.027                 | 100                        | No            | 2.7 ~ 5.5              | 15           | 7             | 0.5                                 | 22                    | 1150                            | 144                         | 120              | Yes            | Yes             | SOT-23-5,SOIC-8,MSOP-8                | Ultra High Precision, Low Noise, Zero-Drift                             |
| 2                            | SGM8557-2      | 0.005             | 0.027                 | 100                        | No            | 2.7 ~ 5.5              | 15           | 7             | 0.5                                 | 22                    | 1150                            | 144                         | 120              | Yes            | Yes             | SOIC-8                                | Ultra High Precision, Low Noise, Zero-Drift                             |
| 1                            | SGM8557-3      | 0.005             | 0.027                 | 100                        | Yes           | 2.7 ~ 5.5              | 15           | 7             | 0.5                                 | 22                    | 1150                            | 144                         | 120              | Yes            | Yes             | SOT-23-6,SOIC-8                       | Ultra High Precision, Low Noise, Zero-Drift, Single Amp with Shutdown   |
| 1                            | SGM8557-5      | 0.005             | 0.027                 | 100                        | Yes           | 2.7 ~ 5.5              | 15           | 7             | 0.5                                 | 22                    | 1150                            | 144                         | 120              | Yes            | Yes             | MSOP-10                               | Ultra High Precision, Low Noise, Zero-Drift, Single Amp with Shutdown   |
| 1                            | SGM8558-1      | 0.005†            |                       | 40                         | No            | 2.7 ~ 5.5              | 14           | 8.5           |                                     | 7.5                   | 850                             | 120                         | 100              | Yes            | Yes             | SOT-23-5,SOIC-8                       | High Precision, Low Noise, Zero-Drift                                   |
| 2                            | SGM8558-2      | 0.005†            |                       | 40                         | No            | 2.7 ~ 5.5              | 14           | 8.5           |                                     | 7.5                   | 850                             | 120                         | 100              | Yes            | Yes             | TDFN-3X3-8L,SOIC-8,WLCSP-1.45X1.45-8B | High Precision, Low Noise, Zero-Drift                                   |
| 1                            | SGM8558-3      | 0.005†            |                       | 40                         | Yes           | 2.7 ~ 5.5              | 14           | 8.5           |                                     | 7.5                   | 850                             | 120                         | 100              | Yes            | Yes             | SOT-23-6                              | High Precision, Low Noise, Zero-Drift, Single Amp with Shutdown         |
| 4                            | SGM8558-4      | 0.005†            |                       | 40                         | No            | 2.7 ~ 5.5              | 14           | 8.5           |                                     | 7.5                   | 850                             | 120                         | 100              | Yes            | Yes             | SOIC-14                               | High Precision, Low Noise, Zero-Drift                                   |
| 1                            | SGM8581        | 0.1               | 0.1                   | 15                         | No            | 2.5 ~ 5.5              | 1.45         | 0.75          | 0.85                                | 47.5                  | 445                             | 145                         | 90               | Yes            | Yes             | SOT-23-5,SOIC-8,MSOP-8                | High Precision, Low Noise, Zero-Drift                                   |
| 2                            | SGM8582        | 0.1               | 0.1                   | 15                         | No            | 2.5 ~ 5.5              | 1.5          | 0.9           | 0.8                                 | 49                    | 430                             | 145                         | 95               | Yes            | Yes             | SOIC-8,MSOP-8                         | High Precision, Low Noise, Zero-Drift                                   |
| 4                            | SGM8584        | 0.1               | 0.15                  | 60                         | No            | 2.5 ~ 5.5              | 1.5          | 0.9           | 1.4                                 | 78                    | 430                             | 135                         | 92               | Yes            | Yes             | SOIC-14,TSSOP-14                      | High Precision, Low Noise, Zero-Drift                                   |
| 1                            | SGM8591        | 0.5               | 0.2                   | 15                         | No            | 2.5 ~ 5.5              | 1.45         | 0.75          | 0.85                                | 47.5                  | 445                             | 145                         | 90               | Yes            | Yes             | SOT-23-5,SOIC-8                       | High Precision, Low Noise, Zero-Drift                                   |
| 2                            | SGM8592        | 0.5               | 0.2                   | 15                         | No            | 2.5 ~ 5.5              | 1.5          | 0.9           | 0.8                                 | 49                    | 430                             | 145                         | 95               | Yes            | Yes             | SOIC-8,MSOP-8                         | High Precision, Low Noise, Zero-Drift                                   |
| 4                            | SGM8594        | 0.5               | 0.2                   | 60                         | No            | 2.5 ~ 5.5              | 1.5          | 0.9           | 1.4                                 | 78                    | 430                             | 135                         | 92               | Yes            | Yes             | SOIC-14,TSSOP-14                      | High Precision, Low Noise, Zero-Drift                                   |
| 2                            | SGM8922A       | 0.9               | 1.6                   |                            | No            | 3.0 ~ 5.5              | 12.7         | 6.8           |                                     | 6                     | 3000                            | 104                         | 108              | No             | Yes             | SOIC-8,MSOP-8,TSSOP-8                 | High Precision, 300mA Output Short Circuit Current, Rail-to-Rail Output |
| 2                            | SGM8924A       | 1                 | 1.5                   |                            | No            | 3.0 ~ 5.5              | 8.9          | 5.1           |                                     | 6                     | 5500                            | 105                         | 102              | No             | Yes             | MSOP-10                               | High Precision, 300mA Output Short Circuit Current, Rail-to-Rail Output |
| 1                            | SGM8925        | 0.6               | 2.5                   | 1                          | No            | 1.6 ~ 5.5              | 0.11         | 0.04          |                                     | 105                   | 6.4                             | 93                          | 85               | No             | Yes             | SOT-23-5,SC70-5,SOIC-8,MSOP-8         | High Precision, Very Low Quiescent Current, Low Side Current Sense      |
| 2                            | SGM8926        | 0.9               | 2.5                   | 1                          | No            | 1.6 ~ 5.5              | 0.11         | 0.04          |                                     | 105                   | 6.4                             | 93                          | 85               | No             | Yes             | SOIC-8,MSOP-8                         | High Precision, Very Low Quiescent Current, Low Side Current Sense      |
| 1                            | SGM8927        | 0.6               | 2.5                   | 1                          | Yes           | 1.6 ~ 5.5              | 0.11         | 0.04          |                                     | 105                   | 6.4                             | 93                          | 85               | No             | Yes             | SOT-23-6,SOIC-8,MSOP-8                | High Precision, Very Low Quiescent Current, Low Side Current Sense      |
| 1                            | SGM8931        | 0.9               | 1.5                   | 3                          | No            | 1.8 ~ 5.5              | 1.5          | 0.8           |                                     | 30                    | 80                              | 100                         | 86               | No             | Yes             | SOT-23-5,SC70-5,SOIC-8,MSOP-8         | High Precision, Low Power, Low Noise, Rail-to-Rail Output               |
| 2                            | SGM8932        | 0.9               | 1.5                   | 3                          | No            | 1.8 ~ 5.5              | 1.5          | 0.8           |                                     | 30                    | 80                              | 100                         | 86               | No             | Yes             | SOIC-8,MSOP-8                         | High Precision, Low Power, Low Noise, Rail-to-Rail Output               |

# High Precision Operational Amplifiers

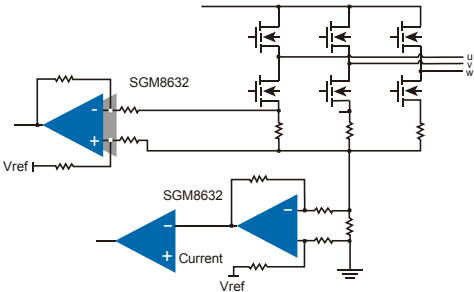
| Amplifiers<br>per<br>Package | Part<br>Number | V <sub>OS</sub><br>Max @25°C<br>(mV) | TC of V <sub>OS</sub><br>Typ<br>(μV/°C) | I <sub>B</sub> Typ<br>(pA) | Shut-<br>down | V <sub>CC</sub><br>(V) | GBP<br>Typ<br>(MHz) | Slew Rate<br>Typ<br>(V/μs) | E <sub>NOISE</sub><br>0.1Hz ~ 10Hz<br>(μV <sub>PP</sub> ) | E <sub>NOISE</sub><br>Typ @1kHz<br>(nV/√Hz) | I <sub>O</sub> /Amp Typ<br>(μA) | A <sub>VO</sub> Typ<br>(dB) | CMRR Typ<br>(dB) | Rail-to<br>-Rail<br>Input | Rail-to<br>-Rail<br>Output | Package                   | Features                                                  |
|------------------------------|----------------|--------------------------------------|-----------------------------------------|----------------------------|---------------|------------------------|---------------------|----------------------------|-----------------------------------------------------------|---------------------------------------------|---------------------------------|-----------------------------|------------------|---------------------------|----------------------------|---------------------------|-----------------------------------------------------------|
| 1                            | SGM8933        | 0.9                                  | 1.5                                     | 3                          | Yes           | 1.8 ~ 5.5              | 1.5                 | 0.8                        |                                                           | 30                                          | 80                              | 100                         | 86               | No                        | Yes                        | SOT-23-6,SOIC-8,MSOP-8    | High Precision, Low Power, Low Noise, Rail-to-Rail Output |
| 4                            | SGM8934        | 0.9                                  | 1.5                                     | 3                          | No            | 1.8 ~ 5.5              | 1.5                 | 0.8                        |                                                           | 30                                          | 80                              | 100                         | 86               | No                        | Yes                        | SOIC-14,TSSOP-14          | High Precision, Low Power, Low Noise, Rail-to-Rail Output |
| 1                            | SGM8951        | 0.8                                  |                                         |                            | No            | 1.8 ~ 5.5              | 0.11                | 0.045                      | 3.5                                                       | 115                                         | 26                              | 92                          | 92               | Yes                       | Yes                        | SOT-23-5,SOIC-8           | High Precision, Low Noise, Micro Power, RRIO              |
| 2                            | SGM8952        | 0.8                                  |                                         |                            | No            | 1.8 ~ 5.5              | 0.11                | 0.045                      | 3.5                                                       | 115                                         | 17                              | 92                          | 92               | Yes                       | Yes                        | SOIC-8,MSOP-8             | High Precision, Low Noise, Micro Power, RRIO              |
| 1                            | SGM8955        | 0.05                                 | 0.08                                    | 130                        | No            | 1.8 ~ 5.5              | 0.35                | 0.18                       | 2                                                         |                                             | 20                              | 121                         | 100              | Yes                       | Yes                        | SOT-23-5,SC70-5,SOIC-8    | Very High Precision, Low Noise, Micro Power, RRIO         |
| 2                            | SGM8956        | 0.05                                 | 0.08                                    | 130                        | No            | 1.8 ~ 5.5              | 0.35                | 0.18                       | 2                                                         |                                             | 20                              | 121                         | 100              | Yes                       | Yes                        | SOIC-8,MSOP-8,TDFN-3×3-8L | Very High Precision, Low Noise, Micro Power, RRIO         |
| 1                            | SGM8957-1      | 0.025                                | 0.08                                    | 130                        | No            | 1.8 ~ 5.5              | 0.35                | 0.18                       | 2                                                         |                                             | 20                              | 121                         | 100              | Yes                       | Yes                        | SOT-23-5,SC70-5,SOIC-8    | Very High Precision, Low Noise, Micro Power, RRIO         |
| 2                            | SGM8957-2      | 0.025                                | 0.08                                    | 130                        | No            | 1.8 ~ 5.5              | 0.35                | 0.18                       | 2                                                         |                                             | 20                              | 121                         | 100              | Yes                       | Yes                        | SOIC-8,TDFN-3×3-8L,MSOP-8 | Very High Precision, Low Noise, Micro Power, RRIO         |
| 1                            | SGM8958-1      | 0.01                                 | 0.03                                    | 500                        | No            | 1.8 ~ 5.5              | 1.8                 | 0.7                        | 0.3                                                       | 12                                          | 165                             | 136                         | 125              | Yes                       | Yes                        | SOT-23-5,SC70-5,SOIC-8    | Ultra High Precision, Low Noise, Zero-Drift               |
| 2                            | SGM8958-2      | 0.01                                 | 0.03                                    | 500                        | No            | 1.8 ~ 5.5              | 1.8                 | 0.7                        | 0.3                                                       | 12                                          | 165                             | 136                         | 125              | Yes                       | Yes                        | SOIC-8,TDFN-3×3-8L        | Ultra High Precision, Low Noise, Zero-Drift               |
| 1                            | SGM8959-1      | 0.01                                 | 0.032                                   | 350                        | No            | 1.8 ~ 5.5              | 4                   | 1                          |                                                           | 8                                           | 380                             | 127                         | 123              | Yes                       | Yes                        | SOT-23-5,SC70-5,SOIC-8    | Ultra High Precision, Low Noise, Zero-Drift               |
| 2                            | SGM8959-2      | 0.01                                 | 0.032                                   | 350                        | No            | 1.8 ~ 5.5              | 4                   | 1                          |                                                           | 8                                           | 380                             | 127                         | 123              | Yes                       | Yes                        | SOIC-8,TDFN-3×3-8L        | Ultra High Precision, Low Noise, Zero-Drift               |

Notes: † Typical Values @ 25°C  
†† Typical Values @100kHz



# Low Noise Operational Amplifiers

The Low Noise Operational Amplifier family provides rail-to-rail input and output with an excellent speed/power consumption ratio. They are designed to provide optimal performance in low noise systems, providing rail-to-rail output swing into heavy loads. The combination of these characteristics makes them extremely suitable for sensor interfaces, high speed current sensing and active filtering.

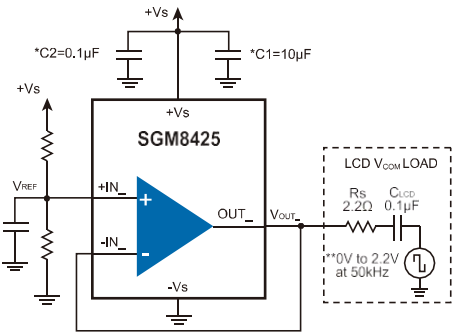


| Amplifiers<br>per<br>Package         | Part<br>Number | $E_{NOISE}$<br>1kHz<br>(nV/√Hz) | $I_{NOISE}$<br>Typ @1kHz<br>(pA/√Hz) | GBP<br>Typ<br>(MHz) | Slew Rate<br>Typ<br>(V/μs) | $I_{OUT}$<br>Min @25°C<br>(mA) | $V_{OS}$<br>Max @25°C<br>(mV) | TC of $V_{OS}$<br>Typ<br>(μV/°C) | $I_b$ Typ<br>(pA) | $V_{CC}$<br>(V) | $I_Q$ /Amp Typ<br>(mA) | $A_{VO}$ Typ<br>(dB) | CMRR Typ<br>(dB) | Rail-to<br>-Rail<br>I/O | Package                                     | Features                                                               |
|--------------------------------------|----------------|---------------------------------|--------------------------------------|---------------------|----------------------------|--------------------------------|-------------------------------|----------------------------------|-------------------|-----------------|------------------------|----------------------|------------------|-------------------------|---------------------------------------------|------------------------------------------------------------------------|
| Operational Amplifier,<br>Comparator | 1 SGM721       | 12.5                            |                                      | 11                  | 8.5                        | 52                             | 4                             | 2.1                              | 1                 | 2.1 ~ 5.5       | 1.2                    | 89                   | 75               | Yes                     | SOT-23-5,SOIC-8,SC70-5                      | 11MHz/8.5V/μs, Low Noise, RRIO                                         |
|                                      | 2 SGM722       | 12.5                            |                                      | 11                  | 8.5                        | 52                             | 4                             | 2.1                              | 1                 | 2.1 ~ 5.5       | 1.1                    | 89                   | 75               | Yes                     | SOIC-8,MSOP-8,TSSOP-8                       | 11MHz/8.5V/μs, Low Noise, RRIO                                         |
|                                      | 1 SGM723       | 12.5                            |                                      | 11                  | 8.5                        | 52                             | 4                             | 2.1                              | 1                 | 2.1 ~ 5.5       | 1.2                    | 89                   | 75               | Yes                     | SOT-23-6,SOIC-8                             | 11MHz/8.5V/μs, Low Noise, Single Amp with Shutdown, RRIO               |
|                                      | 4 SGM724       | 12.5                            |                                      | 11                  | 8.5                        | 52                             | 4                             | 2.1                              | 1                 | 2.1 ~ 5.5       | 1.1                    | 89                   | 75               | Yes                     | SOIC-14,TSSOP-14                            | 11MHz/8.5V/μs, Low Noise, RRIO                                         |
| Audio/Video                          | 1 SGM8261-1    | 1.6                             | 6                                    | 16                  | 16                         | 60†                            | 0.1†                          | 1                                | 60000             | 4.5 ~ 36        | 3.6                    | 130                  | 120              | Output                  | SOIC-8                                      | 16MHz, Ultra Low Noise, HiFi Audio Amp                                 |
|                                      | 2 SGM8261-2    | 1.6                             | 6                                    | 16                  | 16                         | 60†                            | 0.1†                          | 1                                | 60000             | 4.5 ~ 36        | 3.6                    | 130                  | 120              | Output                  | TDFN-3×3-8AL,TDFN-3×3-8BL,<br>SOIC-8,MSOP-8 | 16MHz, Ultra Low Noise, HiFi Audio Amp                                 |
|                                      | 2 SGM8261-5    | 1.6                             | 6                                    | 20                  | 16                         | 120†                           | 0.05†                         | 1                                | 60000             | 4.5 ~ 36        | 4                      | 130                  | 120              | Output                  | TDFN-3×3-10L,MSOP-10                        | 20MHz, Ultra Low Noise, HiFi Audio Amp                                 |
|                                      | 2 SGM8262-2    | 4                               | 4                                    |                     | 40                         | 150†                           | 0.1†                          | 1                                | 40000             | 4.5 ~ 36        | 6.2                    | 130                  | 120              | Output                  | SOIC-8                                      | 30MHz, Ultra Low Noise, HiFi High Output Current Audio Amp             |
| Analog Switch                        | 1 SGM8263-1    | 6.5                             | 5                                    | 9                   | 10                         | 60†                            | 0.008†                        | 0.1                              | 60000             | 4.5 ~ 36        | 3                      | 130                  | 120              | Output                  | SOIC-8                                      | 9MHz, Ultra Low Noise, Ultra Low Offset                                |
|                                      | 2 SGM8263-2    | 6.5                             | 5                                    | 9                   | 10                         | 60†                            | 0.008†                        | 0.1                              | 60000             | 4.5 ~ 36        | 3                      | 130                  | 120              | Output                  | SOIC-8                                      | 9MHz, Ultra Low Noise, Ultra Low Offset                                |
|                                      | 1 SGM8275-1    | 8.5                             | 1.5                                  | 3                   | 4                          | 35†                            | 0.05†                         | 0.8                              | 1000              | 3.6 ~ 36        | 0.9                    | 120                  | 140              | Output                  | SOT-23-5,SOIC-8                             | 3MHz, Low Noise, High Voltage Amp                                      |
|                                      | 2 SGM8275-2    | 8.5                             | 1.5                                  | 3                   | 4                          | 35†                            | 0.05†                         | 0.8                              | 1000              | 3.6 ~ 36        | 0.9                    | 120                  | 140              | Output                  | SOIC-8,MSOP-8                               | 3MHz, Low Noise, High Voltage Amp                                      |
| Power Managen                        | 1 SGM8275-3    | 8.5                             | 1.5                                  | 3                   | 4                          | 35†                            | 0.05†                         | 0.8                              | 1000              | 3.6 ~ 36        | 0.9                    | 120                  | 140              | Output                  | SOT-23-6                                    | 3MHz, Low Noise, High Voltage, Single Amp with Shutdown                |
|                                      | 1 SGM8295-1    | 4.5                             | 2                                    | 9                   | 8                          | 50†                            | 0.06†                         | 1                                | 2000              | 3.6 ~ 36        | 1.5                    | 120                  | 120              | Output                  | SOIC-8,SOT-23-5                             | 9MHz, Low Noise, High Voltage Amp                                      |
|                                      | 2 SGM8295-2    | 4.5                             | 2                                    | 9                   | 8                          | 50†                            | 0.06†                         | 1                                | 2000              | 3.6 ~ 36        | 1.5                    | 120                  | 120              | Output                  | SOIC-8,MSOP-8                               | 9MHz, Low Noise, High Voltage Amp                                      |
|                                      | 4 SGM8295-4    | 4.5                             | 2                                    | 9                   | 8                          | 50†                            | 0.06†                         | 1                                | 2000              | 3.6 ~ 36        | 1.5                    | 120                  | 120              | Output                  | SOIC-14                                     | 9MHz, Low Noise, High Voltage Amp                                      |
| Logic IC                             | 1 SGM8621      | 17.5                            |                                      | 3                   | 1.7                        | 38                             | 3                             | 2.7                              | 1                 | 2 ~ 5.5         | 0.27                   | 90                   | 71               | Yes                     | SOT-23-5,SOIC-8,SC70-5                      | 3MHz/1.7V/μs, Low Noise, RRIO                                          |
|                                      | 2 SGM8622      | 17.5                            |                                      | 3                   | 1.7                        | 38                             | 3                             | 2.7                              | 1                 | 2 ~ 5.5         | 0.21                   | 90                   | 71               | Yes                     | SOIC-8,MSOP-8                               | 3MHz/1.7V/μs, Low Noise, RRIO                                          |
|                                      | 1 SGM8623      | 17.5                            |                                      | 3                   | 1.7                        | 38                             | 3                             | 2.7                              | 1                 | 2 ~ 5.5         | 0.27                   | 90                   | 71               | Yes                     | SOT-23-6,SOIC-8                             | 3MHz/1.7V/μs, Low Noise, Single Amp with Shutdown, RRIO                |
|                                      | 4 SGM8624      | 17.5                            |                                      | 3                   | 1.7                        | 38                             | 3                             | 2.7                              | 1                 | 2 ~ 5.5         | 0.21                   | 90                   | 71               | Yes                     | SOIC-14,TSSOP-14                            | 3MHz/1.7V/μs, Low Noise, RRIO                                          |
| Motor/MOSFET                         | 1 SGM8631      | 13                              |                                      | 6                   | 3.7                        | 40                             | 3.5                           | 2.4                              | 1                 | 2 ~ 5.5         | 0.57                   | 86                   | 76               | Yes                     | SOT-23-5,SOIC-8,SC70-5                      | 6MHz/3.7V/μs, Low Noise, RRIO                                          |
|                                      | 2 SGM8632      | 13                              |                                      | 6                   | 3.7                        | 40                             | 3.5                           | 2.4                              | 1                 | 2 ~ 5.5         | 0.48                   | 86                   | 76               | Yes                     | MSOP-8,SOIC-8                               | 6MHz/3.7V/μs, Low Noise, RRIO                                          |
|                                      | 1 SGM8633      | 13                              |                                      | 6                   | 3.7                        | 40                             | 3.5                           | 2.4                              | 1                 | 2 ~ 5.5         | 0.57                   | 86                   | 76               | Yes                     | SOT-23-6,SOIC-8                             | 6MHz/3.7V/μs, Low Noise, Single Amp with Shutdown, RRIO                |
|                                      | 4 SGM8634      | 12                              | 0.003                                | 6                   | 3.7                        | 49                             | 3.5                           | 2.4                              | 1                 | 2.5 ~ 5.5       | 0.47                   | 97                   | 83               | Yes                     | SOIC-14,TSSOP-14                            | 6MHz/3.7V/μs, Low Noise, RRIO                                          |
|                                      | 1 SGM8651      | 8.7††                           |                                      | 50                  | 66                         | 100                            | 8                             | 4.5                              | 6                 | 2.5 ~ 5.5       | 2.3                    | 80                   | 80               | Output                  | SOT-23-5,SOIC-8                             | 50MHz/66V/μs, Low Noise, Rail-to-Rail Output                           |
|                                      | 2 SGM8652      | 8.7††                           |                                      | 50                  | 66                         | 100                            | 8                             | 4.5                              | 6                 | 2.5 ~ 5.5       | 2.3                    | 80                   | 80               | Output                  | SOIC-8,MSOP-8                               | 50MHz/66V/μs, Low Noise, Rail-to-Rail Output                           |
|                                      | 1 SGM8653      | 8.7††                           |                                      | 50                  | 66                         | 100                            | 8                             | 4.5                              | 6                 | 2.5 ~ 5.5       | 2.3                    | 80                   | 80               | Output                  | SOT-23-6,SOIC-8                             | 50MHz/66V/μs, Low Noise, Single Amp with Shutdown, Rail-to-Rail Output |
|                                      | 4 SGM8654      | 8.7††                           |                                      | 50                  | 66                         | 100                            | 8                             | 4.5                              | 6                 | 2.5 ~ 5.5       | 2.3                    | 80                   | 80               | Output                  | SOIC-14,TSSOP-14                            | 50MHz/66V/μs, Low Noise, Rail-to-Rail Output                           |
|                                      | 2 SGM8655      | 8.7††                           |                                      | 50                  | 66                         | 100                            | 8                             | 4.5                              | 6                 | 2.5 ~ 5.5       | 2.3                    | 80                   | 80               | Output                  | MSOP-10                                     | 50MHz/66V/μs, Low Noise, Dual Amps with Shutdown, Rail-to-Rail Output  |

Notes: † Typical Values @25°C  
†† Typical Values @1MHz

# Application-Specific Operational Amplifiers

The Application-Specific Operational Amplifier family provides the improved V<sub>COM</sub> buffer IC featuring up to 3A transient output peak current with single/dual/quad amplifiers per package; industry standard crossover distortion-free operational amplifiers are extremely suitable for data acquisition systems requiring high linearity; dual channel OPAs with positive offset in tiny DFN packages make them best choice for portable applications.

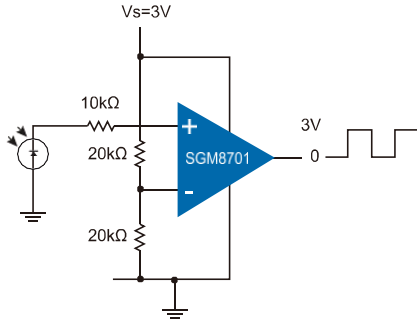


| Amplifiers<br>per<br>Package | Part<br>Number | Transient Output<br>Peak Current<br>(mA) | Settling Time<br>to 0.1%<br>(μs) | GBP<br>Typ<br>(MHz) | Slew Rate<br>Typ<br>(V/μs) | I <sub>OUT</sub><br>Typ<br>(mA) | V <sub>OS</sub><br>Max @25°C<br>(mV) | TC of V <sub>OS</sub><br>Typ<br>(μV/°C) | I <sub>B</sub> Typ<br>(pA) | V <sub>CC</sub><br>(V) | I <sub>O</sub> /Amp Typ<br>(μA) | A <sub>VO</sub> Typ<br>(dB) | CMRR<br>Typ<br>(dB) | Rail-to-<br>-Rail<br>I/O | Package                  | Features                                                                                   |
|------------------------------|----------------|------------------------------------------|----------------------------------|---------------------|----------------------------|---------------------------------|--------------------------------------|-----------------------------------------|----------------------------|------------------------|---------------------------------|-----------------------------|---------------------|--------------------------|--------------------------|--------------------------------------------------------------------------------------------|
| 2                            | SGM8139        |                                          |                                  | 0.011               |                            | 50                              | 1.6                                  |                                         |                            | 1.4 ~ 5.5              | 6.5                             | 92                          | 78                  |                          | SOIC-16,TQFN-2.5×2.5-16L | Low Power, Low Voltage PIR and Vibration Sensor AFE                                        |
| 1                            | SGM8416-1      | 800                                      | 0.16                             | 25                  | 65                         | 300                             | 10                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 2600                            | 120                         | 72                  | Yes                      | TDFN-3×3-8L              | 0.8A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> , Single V <sub>COM</sub> Buffer     |
| 2                            | SGM8416-2      | 800                                      | 0.16                             | 25                  | 65                         | 300                             | 10                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 2600                            | 120                         | 72                  | Yes                      | MSOP-8 (Exposed Pad)     | 0.8A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> , Dual V <sub>COM</sub> Buffer       |
| 4                            | SGM8416-4      | 800                                      | 0.16                             | 25                  | 65                         | 300                             | 10                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 2600                            | 120                         | 72                  | Yes                      | TSSOP-14 (Exposed Pad)   | 0.8A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> , Quad V <sub>COM</sub> Buffer       |
| 1                            | SGM8417-1      | 1500                                     | 0.14                             | 28                  | 65                         | 400                             | 10                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 3300                            | 120                         | 72                  | Yes                      | TDFN-3×3-8L              | 1.5A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> , Single V <sub>COM</sub> Buffer     |
| 2                            | SGM8417-2      | 1500                                     | 0.14                             | 28                  | 65                         | 400                             | 10                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 3300                            | 120                         | 72                  | Yes                      | MSOP-8 (Exposed Pad)     | 1.5A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> , Dual V <sub>COM</sub> Buffer       |
| 4                            | SGM8417-4      | 1500                                     | 0.14                             | 28                  | 65                         | 400                             | 10                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 3300                            | 120                         | 72                  | Yes                      | TSSOP-14 (Exposed Pad)   | 1.5A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> , Quad V <sub>COM</sub> Buffer       |
| 1                            | SGM8418-1      | 3000                                     | 0.14                             | 28                  | 65                         | 400                             | 10                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 4800                            | 120                         | 72                  | Yes                      | TDFN-3×3-8L              | 3A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> , Single V <sub>COM</sub> Buffer       |
| 2                            | SGM8418-2      | 3000                                     | 0.14                             | 28                  | 65                         | 400                             | 10                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 4800                            | 120                         | 72                  | Yes                      | MSOP-8 (Exposed Pad)     | 3A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> , Dual V <sub>COM</sub> Buffer         |
| 4                            | SGM8418-4      | 3000                                     | 0.14                             | 28                  | 65                         | 400                             | 10                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 4800                            | 120                         | 72                  | Yes                      | TSSOP-14 (Exposed Pad)   | 3A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> , Quad V <sub>COM</sub> Buffer         |
| 1                            | SGM8421-1Q1    | 3000                                     | 0.13                             | 25                  | 65                         | 400                             | 1†                                   | 3.6                                     | 1000                       | 4.5 ~ 26.5             | 4500                            | 120                         | 72                  | Yes                      | TO-263-A                 | 3A Peak Output Current, 65V/μs, 26.5V <sub>CC</sub> OPA, Meet ACE-Q100                     |
| 2                            | SGM8422        |                                          |                                  | 2.4                 | 2                          | 80                              | 5.9                                  |                                         | 10                         | 4.5 ~ 30               | 660                             | 113                         | 73                  | Yes                      | SOIC-8,MSOP-8            | Low Power, 30V <sub>CC</sub> , Dual V <sub>COM</sub> Buffer for Small Panel                |
| 4                            | SGM8424        |                                          |                                  | 2.4                 | 2                          | 80                              | 5.9                                  |                                         | 10                         | 4.5 ~ 30               | 660                             | 113                         | 73                  | Yes                      | SOIC-14,TSSOP-14         | Low Power, 30V <sub>CC</sub> , Quad V <sub>COM</sub> Buffer for Small Panel                |
| 1                            | SGM8425        | 336                                      | 0.34                             | 9                   | 14                         | 80                              | 6.5                                  | 4.9                                     |                            | 4.5 ~ 30               | 1600                            | 92                          | 71                  | Yes                      | SOT-23-5,SOIC-8,MSOP-8   | 336mA Peak Output Current, 14V/μs, 30V <sub>CC</sub> , Single V <sub>COM</sub> Buffer      |
| 2                            | SGM8426        | 336                                      | 0.34                             | 9                   | 14                         | 80                              | 6.5                                  | 4.9                                     |                            | 4.5 ~ 30               | 1600                            | 92                          | 71                  | Yes                      | SOIC-8,MSOP-8            | 336mA Peak Output Current, 14V/μs, 30V <sub>CC</sub> , Dual V <sub>COM</sub> Buffer        |
| 4                            | SGM8428        | 336                                      | 0.34                             | 9                   | 14                         | 80                              | 6.5                                  | 4.9                                     |                            | 4.5 ~ 30               | 1600                            | 92                          | 71                  | Yes                      | SOIC-14,TSSOP-14         | 336mA Peak Output Current, 14V/μs, 30V <sub>CC</sub> , Quad V <sub>COM</sub> Buffer        |
| 1                            | SGM8477-1      |                                          |                                  | 0.15 @-3dB          | 0.15                       | 45                              | 0.0035†                              |                                         | 17×10 <sup>6</sup>         | 1.8 ~ 5.5              | 380                             |                             | 100                 | Yes                      | SC70-6,UTQFN-1.8×1.4-10L | 1.8V, Low Noise, Zero-Drift, Single Amp                                                    |
| 1                            | SGM8478-1H     |                                          |                                  | 0.04 @-3dB          | 1                          | 40                              | 0.01†                                |                                         | 8×10 <sup>6</sup>          | 4.5 ~ 36               | 5000                            |                             | 102                 | Yes                      | SOIC-8,TDFN-3×3-8L       | High Voltage, High Precision, Low Noise, Over the Rail Difference Amplifier                |
| 1                            | SGM8481        |                                          |                                  | 5.3                 | 8                          | 20                              | 2                                    |                                         |                            | 3 ~ 5.5                | 12000                           | 120                         | 90                  |                          | MSOP-10                  | Single Power Supply, True Negative Signal Amp                                              |
| 2                            | SGM8482        |                                          |                                  | 5.3                 | 8                          | 20                              | 2                                    |                                         |                            | 3 ~ 5.5                | 12000                           | 120                         | 90                  |                          | TSSOP-14                 | Single Power Supply, True Negative Signal Amp                                              |
| 2                            | SGM8600        |                                          | 0.21                             | 11                  | 8.5                        | 63                              | 4                                    | 8.7                                     | 1                          | 2.1 ~ 5.5              | 1100                            | 92                          | 82                  | Yes                      | TDFN-2×2-8L,SOIC-8       | Tiny Package, Positive Offset, Low Noise                                                   |
| 1                            | SGM8601        |                                          | 0.21                             | 11                  | 8.5                        | 63                              | 4                                    | 8.7                                     | 1                          | 2.1 ~ 5.5              | 1100                            | 92                          | 82                  | Yes                      | TDFN-2×2-8L              | Tiny Package, Low Noise                                                                    |
| 2                            | SGM8602        |                                          | 0.2                              | 12                  | 9                          | 65                              | 5.1                                  | 4.7                                     | 1                          | 2.1 ~ 5.5              | 1100                            | 92                          | 75                  | Yes                      | SOT-23-8,TDFN-2×3-8L     | Tiny Package, Low Noise                                                                    |
| 1                            | SGM8603        |                                          | 0.21                             | 11                  | 8.5                        | 64                              | 4.9                                  | 2.7                                     | 1                          | 2.1 ~ 5.5              | 1100                            | 91                          | 83                  | Yes                      | TDFN-2×2-6L              | Tiny Package, Low Noise                                                                    |
| 1                            | SGM8604-1      | 232                                      |                                  | 15                  | 7                          | 232                             | 0.01                                 | 0.017                                   | 200                        | 2.7 ~ 5.5              | 1200                            | 145                         | 120                 | Yes                      | UTDFN-1.45×1-6L          | 15MHz, 7V/μs, High-Output-Drive, RRIO, High Precision, Low Noise, Single Amp               |
| 2                            | SGM8604-2      | 232                                      |                                  | 15                  | 7                          | 232                             | 0.01                                 | 0.017                                   | 200                        | 2.7 ~ 5.5              | 1200                            | 145                         | 120                 | Yes                      | TDFN-2×3-8L              | 15MHz, 7V/μs, High-Output-Drive, RRIO, High Precision, Low Noise, Dual Amps                |
| 1                            | SGM8604-3      | 232                                      |                                  | 15                  | 7                          | 232                             | 0.01                                 | 0.017                                   | 200                        | 2.7 ~ 5.5              | 1200                            | 145                         | 120                 | Yes                      | UTDFN-1.45×1-6L          | 15MHz, 7V/μs, High-Output-Drive, RRIO, High Precision, Low Noise, Single Amp with Shutdown |
| 2                            | SGM8604-5      | 232                                      |                                  | 15                  | 7                          | 232                             | 0.01                                 | 0.017                                   | 200                        | 2.7 ~ 5.5              | 1200                            | 145                         | 120                 | Yes                      | TDFN-3×3-10L             | 15MHz, 7V/μs, High-Output-Drive, RRIO, High Precision, Low Noise, Dual Amps with Shutdown  |
| 1                            | SGM8605-1      |                                          | 0.21                             | 12.5                | 8.5                        | 78                              | 4.5                                  |                                         | 2                          | 2.1 ~ 5.5              | 1200                            | 88                          | 79                  | Yes                      | UTDFN-1.45×1-6L          | Ultra Tiny Package, Low Noise                                                              |
| 1                            | SGM8606        |                                          |                                  | 0.35                | 0.18                       | 18                              | 0.05                                 | 0.08                                    | 130                        | 1.8 ~ 5.5              | 20                              | 121                         | 100                 | Yes                      | TDFN-3×3-10L             | Current Sensing AFE                                                                        |
| 1                            | SGM8941        |                                          | 2                                | 1.5                 | 0.8                        |                                 | 0.9                                  | 3                                       | 3                          | 1.8 ~ 5.5              | 120                             | 90                          | 90                  | Yes                      | SOT-23-5,SOIC-8          | Crossover Distortion Free, 0.9mV V <sub>OS</sub> , Low Bias Current                        |
| 2                            | SGM8942        |                                          | 2                                | 1.5                 | 0.8                        |                                 | 0.9                                  | 3                                       | 3                          | 1.8 ~ 5.5              | 120                             | 90                          | 90                  | Yes                      | SOIC-8,MSOP-8            | Crossover Distortion Free, 0.9mV V <sub>OS</sub> , Low Bias Current                        |
| 1                            | SGMOP07        |                                          | 0.5                              | 3                   | 4                          | 35                              | 0.05†                                | 0.8                                     | 1000                       | 3.6 ~ 36               | 900                             | 120                         | 140                 | No                       | SOIC-8                   | 3MHz, Low Noise, High Voltage Amp with Offset Nulling Function                             |
| 1                            | SGMOP07C       |                                          | 0.5                              | 3                   | 4                          | 35                              | 0.05†                                | 0.8                                     | 1000                       | 3.6 ~ 36               | 900                             | 120                         | 140                 | No                       | SOIC-8                   | 3MHz, Low Noise, High Voltage Amp                                                          |
| 1                            | SGMOP07D       |                                          | 0.5                              | 3                   | 4                          | 35                              | 0.12†                                | 0.8                                     | 1000                       | 3.6 ~ 36               | 900                             | 120                         | 140                 | No                       | SOIC-8                   | 3MHz, Low Noise, High Voltage Amp                                                          |
| 1                            | SGMOP17C       |                                          |                                  | 1.5                 | 1.7                        |                                 | 0.12                                 | 0.3                                     | 100                        | 4.5 ~ 36               | 450                             | 135                         | 125                 | Output                   | SOT-23-5,SOIC-8          | 1.5MHz, High Voltage, High Precision, Low Noise Rail-to-Rail Output, Single Amp            |
| 2                            | SGMOP17C-2     |                                          |                                  | 1.5                 | 1.7                        |                                 | 0.12                                 | 0.3                                     | 100                        | 4.5 ~ 36               | 480                             | 135                         | 125                 | Output                   | SOIC-8                   | 1.5MHz, High Voltage, High Precision, Low Noise Rail-to-Rail Output, Dual Amps             |

Notes: † Typical Values @25°C

# Nano Power Comparators

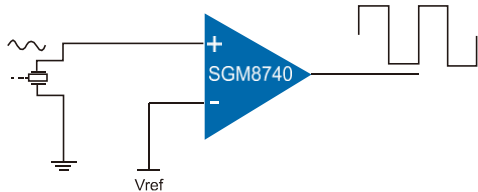
The Nano Power Comparator family provides a typical power supply current as low as 350nA. They have the best-in-class power supply current versus propagation delay performance. The propagation delay is as low as 6μs with 100mV overdrive at 1.4V supply. The Nano Power Comparator family also provides different options featuring push-pull output stage, PFET/NFET open-drain output stage, latch enable, reference output and ultra small DFN packages.



| Comparators<br>per<br>Package | Part<br>Number | I <sub>o</sub> /Comp<br>Typ<br>(nA) | Latch<br>Enable | V <sub>cc</sub><br>(V) | V <sub>os</sub><br>Max @25°C<br>(mV) | t <sub>PD</sub> , H to L<br>@V <sub>cc</sub> = 5V<br>(μs) | t <sub>PD</sub> , L to H<br>@V <sub>cc</sub> = 5V<br>(μs) | Logic<br>Output    | Reference<br>Output<br>(V) | Rise Time<br>@V <sub>cc</sub> = 5V<br>(ns) | Fall Time<br>@V <sub>cc</sub> = 5V<br>(ns) | Package                  | Features                                                                  |
|-------------------------------|----------------|-------------------------------------|-----------------|------------------------|--------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|--------------------|----------------------------|--------------------------------------------|--------------------------------------------|--------------------------|---------------------------------------------------------------------------|
| 1                             | SGM8701        | 350                                 | No              | 1.4 ~ 5.5              | 3                                    | 6                                                         | 33                                                        | Push-Pull          | NA                         | 85                                         | 60                                         | SOT-23-5,SC70-5          | Ultra Low Power, Push-Pull, Small Package                                 |
| 1                             | SGM8702        | 350                                 | No              | 1.4 ~ 5.5              | 3                                    | 6                                                         | 33                                                        | Open-Drain (PFET)  | NA                         | 85                                         | NA                                         | SOT-23-5,SC70-5          | Ultra Low Power, PFET Open-Drain, Small Package                           |
| 1                             | SGM8703        | 350                                 | Yes             | 1.4 ~ 5.5              | 3                                    | 6                                                         | 33                                                        | Push-Pull          | NA                         | 85                                         | 60                                         | SOT-23-6                 | Latch Enable, Ultra Low Power, Push-Pull, Small Package                   |
| 1                             | SGM8704        | 350                                 | Yes             | 1.4 ~ 5.5              | 3                                    | 6                                                         | 33                                                        | Push-Pull & Invert | NA                         | 85                                         | 60                                         | SOIC-8,MSOP-8            | Latch Enable, Ultra Low Power, Push-Pull and Inverter                     |
| 2                             | SGM8705        | 350                                 | No              | 1.4 ~ 5.5              | 3                                    | 6                                                         | 33                                                        | Push-Pull          | NA                         | 85                                         | 60                                         | SOIC-8,MSOP-8            | Ultra Low Power, Push-Pull                                                |
| 1                             | SGM8706        | 2300                                | Yes             | 1.8 ~ 5.5              | 3                                    | 5.6                                                       | 30                                                        | Push-Pull          | 1.2                        | 40                                         | 30                                         | SOIC-8,SOT-23-8,SOT-23-6 | Internal Reference, Latch Enable, Ultra Low Power, Push-Pull              |
| 1                             | SGM8707        | 350                                 | No              | 1.4 ~ 5.5              | 3                                    | 6                                                         | 33                                                        | Push-Pull          | NA                         | 85                                         | 60                                         | SOT-23-5,SC70-5          | Ultra Low Power, Push-Pull, Small Package                                 |
| 1                             | SGM8708        | 2300                                | Yes             | 1.8 ~ 5.5              | 3                                    | 5.6                                                       | 30                                                        | Push-Pull & Invert | 1.2                        | 40                                         | 30                                         | SOT-23-8,SOIC-8          | Internal Reference, Latch Enable, Ultra Low Power, Push-Pull and Inverter |
| 1                             | SGM8709        | 350                                 | No              | 1.4 ~ 5.5              | 3                                    | 5                                                         |                                                           | Open-Drain (NFET)  | NA                         | NA                                         | 36                                         | SOT-23-5,SC70-5          | Ultra Low Power, NFET Open-Drain, Small Package                           |
| 1                             | SGM8710        | 2300                                | Yes             | 1.8 ~ 5.5              | 3                                    | 5.6                                                       |                                                           | Open-Drain (NFET)  | 1.2                        | NA                                         | 30                                         | SOT-23-8,SOT-23-6        | Internal Reference, Latch Enable, Ultra Low Power, NFET Open-Drain        |
| 1                             | SGM8711        | 2300                                | No              | 1.8 ~ 5.5              | 3                                    | 5.6                                                       | 30                                                        | Push-Pull          | 1.2                        | 40                                         | 30                                         | UTDFN-1.6×1.6-6L         | Tiny Package, Internal Reference, Ultra Low Power, Push-Pull              |
| 2                             | SGM8712        | 350                                 | No              | 1.4 ~ 5.5              | 3                                    | 6                                                         | 33                                                        | Push-Pull          | NA                         | 85                                         | 60                                         | MSOP-8                   | Ultra Low Power, Push-Pull                                                |

# High Speed Comparators

The High Speed Comparator family provides the smallest propagation delay as short as 6ns, while input common mode range of the devices extends beyond both power supply rails. The output pulls to within 0.1V of either supply rail without external pull-up circuitry, making the devices ideal for interface with both CMOS and TTL logics. All input and output pins can tolerate a continuous short-circuit fault condition to either rail. Internal hysteresis ensures a clean output switching, even with slow-moving input signals.



| Comparators<br>per<br>Package | Part<br>Number | t <sub>PD</sub> , H to L<br>@V <sub>cc</sub> = 5V<br>(ns) | t <sub>PD</sub> , L to H<br>@V <sub>cc</sub> = 5V<br>(ns) | Rise Time<br>@V <sub>cc</sub> = 5V<br>(ns) | Fall Time<br>@V <sub>cc</sub> = 5V<br>(ns) | V <sub>os</sub><br>Max @25°C<br>(mV) | V <sub>cc</sub><br>(V) | Input<br>Common Mode<br>Voltage Range (V) | I <sub>o</sub> /Comp<br>Typ<br>(μA) | Logic<br>Output | Rail-to-Rail<br>Output | Package         | Features                                                    |
|-------------------------------|----------------|-----------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------|------------------------|-------------------------------------------|-------------------------------------|-----------------|------------------------|-----------------|-------------------------------------------------------------|
| 1                             | SGM8740        | 20                                                        | 25                                                        | 8                                          | 5                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 155                                 | Push-Pull       | Yes                    | SOT-23-5,SC70-5 | High Speed, Small Package, Single, Rail-to-Rail Input       |
| 1                             | SGM8741        | 20                                                        | 25                                                        | 8                                          | 5                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 155                                 | Push-Pull       | Yes                    | SOT-23-5,SC70-5 | High Speed, Small Package, Single, Rail-to-Rail Input       |
| 2                             | SGM8742        | 20                                                        | 25                                                        | 8                                          | 5                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 155                                 | Push-Pull       | Yes                    | SOIC-8,MSOP-8   | High Speed, Small Package, Dual, Rail-to-Rail Input         |
| 1                             | SGM8743        | 6                                                         | 6                                                         | 8                                          | 6                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 1300                                | Push-Pull       | Yes                    | SOT-23-5,SC70-5 | Ultra High Speed, Small Package, Single, Rail-to-Rail Input |
| 1                             | SGM8744        | 6                                                         | 6                                                         | 8                                          | 6                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 1300                                | Push-Pull       | Yes                    | SOT-23-5,SC70-5 | Ultra High Speed, Small Package, Single, Rail-to-Rail Input |
| 2                             | SGM8745        | 6                                                         | 6                                                         | 8                                          | 6                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 1300                                | Push-Pull       | Yes                    | SOIC-8,MSOP-8   | Ultra High Speed, Small Package, Dual, Rail-to-Rail Input   |
| 1                             | SGM8746        | 95                                                        | 120                                                       | 8                                          | 6                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 22                                  | Push-Pull       | Yes                    | SOT-23-5,SC70-5 | Low Power, Small Package, Single, Rail-to-Rail Input        |
| 1                             | SGM8747        | 95                                                        | 120                                                       | 8                                          | 6                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 22                                  | Push-Pull       | Yes                    | SOT-23-5,SC70-5 | Low Power, Small Package, Single, Rail-to-Rail Input        |
| 2                             | SGM8748        | 95                                                        | 120                                                       | 8                                          | 6                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 22                                  | Push-Pull       | Yes                    | SOIC-8,MSOP-8   | Low Power, Small Package, Dual, Rail-to-Rail Input          |
| 1                             | SGM8749        | 97                                                        | NA                                                        | NA                                         | 6                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 22                                  | Open-Drain      | No                     | SOT-23-5,SC70-5 | Low Power, Small Package, Single, Open-Drain Output         |
| 2                             | SGM8750        | 97                                                        | NA                                                        | NA                                         | 6                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs+0.1                             | 22                                  | Open-Drain      | No                     | SOIC-8,MSOP-8   | Low Power, Small Package, Dual, Open-Drain Output           |
| 1                             | SGM8751        | 30                                                        | 22                                                        | 11                                         | 8                                          | 5                                    | 2.7 ~ 5.5              | -0.1 ~ Vs-1.2                             | 150                                 | Push-Pull       | Yes                    | SOT-23-5        | Low Power, Small Package, Single, Rail-to-Rail Output       |

# High Performance Video Buffers

The High Performance, High Reliability Video Buffer family provides industry's broadest products of driving Standard Definition and High Definition analog video signals, including 1080p. These comprehensive filtering solutions provide the designers flexibility to easily filter and drive various video signals, including high definition video, DVD and set-top box applications.

Operational Amplifier,  
Comparator

Audio/Video

Analog Switch

Power Managen

Logic IC

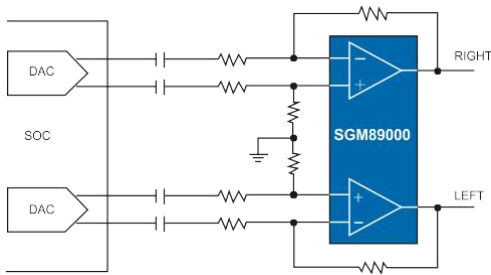
Motor/MOSFET

| Part Number | Standard Definition Channels | High Definition Channels | 1080p Support | Shut-down | V <sub>CC</sub> (V) | Internal Gain (dB) | -3dB Bandwidth Typ (MHz) | -0.1dB Bandwidth Typ (MHz) | Rail-to-Rail Output | Internal Filter | Quiescent Current (mA) | Slew Rate Typ (V/μs) | Group Delay (ns) | Package                 | Features                                                                   |
|-------------|------------------------------|--------------------------|---------------|-----------|---------------------|--------------------|--------------------------|----------------------------|---------------------|-----------------|------------------------|----------------------|------------------|-------------------------|----------------------------------------------------------------------------|
| SGM9111     | 1                            |                          |               | No        | 3.0 ~ 5.5           | 6                  | 8                        | 6                          | Yes                 | Yes             | 6                      | 35                   | 28               | SOIC-8,SC70-5           | Single Channel, Standard Definition, Small Package                         |
| SGM9113     | 1                            |                          |               | No        | 3.0 ~ 5.5           | 6                  | 8                        | 6                          | Yes                 | Yes             | 6                      | 35                   | 28               | SOIC-8,SC70-5           | Single Channel, Standard Definition, Small Package                         |
| SGM9114     | 1                            |                          |               | Yes       | 3.0 ~ 5.5           | 6                  | 8                        | 6                          | Yes                 | Yes             | 6                      | 35                   | 28               | SOT-23-6                | Single Channel, Standard Definition, Small Package with Shutdown           |
| SGM9115     | 3                            |                          |               | No        | 3.3 ~ 5.5           | 6                  | 9                        | 5.5                        | Yes                 | Yes             | 21                     | 44                   | 31               | SOIC-8                  | Triple Channels, Standard Definition                                       |
| SGM9116     |                              | 3                        |               | No        | 3.3 ~ 5.5           | 6                  | 38.5                     | 30.5                       | Yes                 | Yes             | 30                     | 165                  | 3                | SOIC-8                  | Triple Channels, High Definition, 1080i Supported                          |
| SGM9117     |                              | 3                        | Yes           | No        | 2.5 ~ 5.5           | 6                  | 200                      | 92                         | Yes                 | No              | 27.5                   | 300                  | 3                | SOIC-8                  | Triple Channels, High Definition, 1080p Supported                          |
| SGM9119     | 3                            |                          |               | No        | 3.3 ~ 5.5           | 6                  | 8                        | 5.56                       | Yes                 | Yes             | 21                     | 31.5                 | 31.2             | SOIC-8,MSOP-8           | Triple Channels, Standard Definition                                       |
| SGM9121     | 1                            |                          |               | Yes       | 3.0 ~ 5.5           | 6                  | 8                        | 6                          | Yes                 | Yes             | 6                      | 35                   | 28               | SC70-6                  | Single Channel, Standard Definition, Small Package with Shutdown           |
| SGM9122     | 2                            |                          |               | No        | 3.0 ~ 5.5           | 6                  | 15                       | 8.9                        | Yes                 | Yes             | 5.8                    |                      |                  | WSOP-8,TSSOP-8          | Dual Channels, Standard Definition                                         |
| SGM9124     | 4                            |                          |               | No        | 3.3 ~ 5.5           | 6                  | 8                        | 5.9                        | Yes                 | Yes             | 30                     | 35                   | 28               | MSOP-10                 | Quad Channels, Standard Definition                                         |
| SGM9125     | 5                            |                          |               | No        | 3.3 ~ 5.5           | 6                  | 8                        | 5.8                        | Yes                 | Yes             | 44                     | 35                   | 30.4             | TSSOP-14                | Five Channels, Standard Definition                                         |
| SGM9126     | 6                            |                          |               | No        | 3.3 ~ 5.5           | 6                  | 8                        | 5.7                        | Yes                 | Yes             | 44                     | 35                   | 30.5             | TSSOP-14                | Six Channels, Standard Definition                                          |
| SGM9127     | 4                            |                          |               | No        | 3.3 ~ 5.5           | 6                  | 8                        | 5.9                        | Yes                 | Yes             | 30                     | 35                   | 28               | TSSOP-14                | Quad Channels, Standard Definition                                         |
| SGM9128YP   | 1                            | 3                        |               | No        | 3.1 ~ 5.5           | 6                  | 8.5/46                   | 6.4/32                     | Yes                 | Yes             | 65                     | 34/190               | 30/2.5           | MSOP-10 (Exposed Pad)   | Single SD Channel, Triple HD Channels, 1080i Supported, Exposed Pad        |
| SGM9131     |                              | 3                        |               | No        | 3.1 ~ 5.5           | 6                  | 46                       | 32                         | Yes                 | Yes             | 55                     | 190                  | 3.5              | SOIC-8                  | Triple Channels, High Definition, 1080i Supported                          |
| SGM9132     |                              | 3                        | Yes           | No        | 3.1 ~ 5.5           | 6                  | 98                       | 78                         | Yes                 | Yes             | 75                     | 340                  | 5.3              | SOIC-8 (Exposed Pad)    | Triple Channels, High Definition, 1080p Supported                          |
| SGM9133     | 1                            | 3                        | Yes           | Yes       | 3.1 ~ 5.5           | 6                  | 8.5/46/98                | 6.4/32/78                  | Yes                 | Yes             | 75                     | 34/190/340           | 35/3.5/7         | TSSOP-14                | Single SD Channel, Triple HD Channels, 1080i/1080p Supported with Shutdown |
| SGM9134     | 1                            | 3                        |               | No        | 3.1 ~ 5.5           | 6                  | 8.5/46                   | 6.4/32                     | Yes                 | Yes             | 58                     | 34/190               | 35/3.5           | TSSOP-14                | Single SD Channel, Triple HD Channels, 1080i Supported                     |
| SGM9135     | 1                            | 3                        | Yes           | No        | 3.1 ~ 5.5           | 6                  | 8.5/98                   | 6.4/78                     | Yes                 | Yes             | 88                     | 34/340               | 35/5.3           | MSOP-10 (Exposed Pad)   | Single SD Channel, Triple HD Channels, 1080p Supported                     |
| SGM9136     | 1                            | 3                        | Yes           | Yes       | 3.1 ~ 5.5           | 6                  | 8.5/46/98                | 6.4/33/78                  | Yes                 | Yes             | 75                     | 34/190/340           | 35/3.5/5.3       | TSSOP-14                | Single SD Channel, Triple HD Channels, 1080i/1080p Supported with Shutdown |
| SGM9137     | 1                            | 3                        |               | No        | 3.1 ~ 5.5           | 6                  | 8.5/46                   | 6.4/32                     | Yes                 | Yes             | 58                     | 34/190               | 35/3.5           | TSSOP-14                | Single SD Channel, Triple HD Channels, 1080i Supported                     |
| SGM9140     | 1                            |                          |               | Yes       | 2.8 ~ 5.5           | 12/6               | 26/23                    | 18/16                      | Yes                 | No              | 9                      |                      |                  | MSOP-8                  | Quad Channels, Standard Definition                                         |
| SGM9141     | 1                            |                          |               | No        | 4.5 ~ 13.2          | 6                  | 25                       | 17                         | Yes                 | No              | 9                      |                      |                  | SOIC-8,TSSOP-8          | Triple Channels, Standard Definition                                       |
| SGM9144     | 1                            |                          |               | Yes       | 2.5 ~ 4.0           | 6/12               | 14/14                    |                            | Yes                 | Yes             | 11.8                   | 60                   |                  | MSOP-8,TDFN-2×2-8L      | Single SD Channel, Capless Output Coupling                                 |
| SGM9146     | 1                            | 3                        | Yes           | No        | 3.1 ~ 5.5           | 6                  | 8.5/46/98                | 6.4/32/78                  | Yes                 | Yes             | 9.5/58/78              | 34/190/340           | 35/3.5/5.3       | TSSOP-14                | Single SD Channel, Triple HD Channels, 1080i/1080p Supported               |
| SGM9147     | 1                            |                          |               | No        | 3.0 ~ 5.5           | 6                  | 13                       | 10                         | Yes                 | Yes             | 5                      | 60                   | 6                | SC70-5                  | Single Channel, Standard Definition, Small Package                         |
| SGM9148     | 1                            |                          |               | Yes       | 3.0 ~ 5.5           | 6                  | 13                       | 10                         | Yes                 | Yes             | 5                      | 60                   | 6                | SOT-23-6                | Single Channel, Standard Definition, Small Package with Shutdown           |
| SGM9149     | 3                            |                          |               | No        | 3.0 ~ 5.5           | 6                  | 13                       | 10.7                       | Yes                 | Yes             | 21                     | 61                   | 5.2              | SOIC-8,MSOP-8           | Triple Channels, Standard Definition                                       |
| SGM9150     | 1                            | 3                        | Yes           | Yes       | 3.1 ~ 5.5           | 6                  | 8.5/98                   | 6.4/78                     | Yes                 | Yes             | 9.5/65                 | 34/340               | 35/5.3           | TSSOP-14                | Single SD Channel, Triple HD Channels, 1080p Supported with Shutdown       |
| SGM9152     |                              | 1                        | Yes           | Yes       | 3.1 ~ 5.5           | 6                  | 79                       | 64                         | Yes                 | Yes             | 15                     | 300                  | 3.5              | MSOP-8                  | Single HD Channel, 1080p Supported                                         |
| SGM9153     |                              | 1                        | Yes           | Yes       | 2.5 ~ 4.0           | 6                  | 82                       | 62                         | Yes                 | Yes             | 36                     | 305                  | 6.2              | MSOP-10,TDFN-3×3-10L    | Single HD Channel, 1080p Supported, Capless Output Coupling                |
| SGM9154     |                              | 1                        | Yes           | Yes       | 3.1 ~ 5.5           | 6                  | 79                       | 64                         | Yes                 | Yes             | 15                     | 300                  | 3.5              | TSSOP-8,SOT-23-6,SC70-5 | Single HD Channel, 1080p Supported                                         |
| SGM9155     |                              | 1                        |               | Yes       | 3.1 ~ 5.5           | 6                  | 40                       |                            | Yes                 | Yes             | 12.5                   | 175                  | 3.8              | SOT-23-6,SC70-5         | Single HD Channel, 720p Supported                                          |
| SGM9203     | 3                            | 3                        | Yes           | Yes       | 3.3 ~ 5.5           | 6/0                | 8/18/38/75               | 5.4/12/30/40               | Yes                 | Yes             | 40                     | 40/78/155/311        | 22/13.5/9.5/NA   | TSSOP-14                | Triple Channels, Selectable SD/PS/HD(1080i)/HD(1080p) with Shutdown        |
| SGM9346     | 3                            | 3                        |               | No        | 3.3 ~ 5.5           | 6                  | 8/35                     | 5.36/28.2                  | Yes                 | Yes             | 64.5                   | 39.5/140             | 10.5/4.9         | TSSOP-20                | Triple SD Channels, Triple HD Channels                                     |



# High Performance Audio Line Drivers

The Audio Line Driver family provides pop & click free stereo line drivers designed to allow the removal of the output DC-blocking capacitors for reduced component count and cost. The products are ideal for single supply electronics where size and cost are critical design parameters. The use of external gain resistors also allows the implementation of a 2nd order low pass filter to complement DAC's and SoC converters.

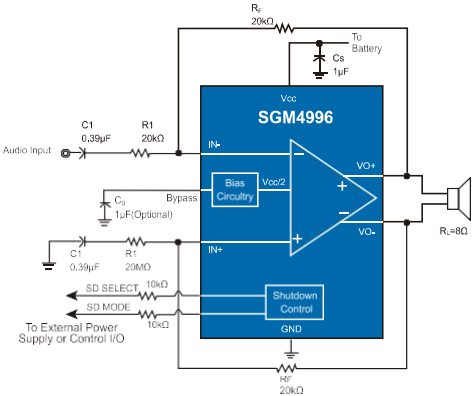


| Part Number | Output Voltage<br>R <sub>L</sub> = 600Ω<br>THD = 1%, V <sub>CC</sub> = 5.0V | Output Power<br>R <sub>L</sub> = 32Ω<br>THD ≤ 0.1%, V <sub>CC</sub> = 5.0V | Stereo or Mono | V <sub>CC</sub> (V) | Differential Input | Shutdown Logic | Shutdown Current Typ (μA) | Pop & Click Suppression | Package               | Features                                           |
|-------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------|---------------------|--------------------|----------------|---------------------------|-------------------------|-----------------------|----------------------------------------------------|
| SGM4809     |                                                                             | 87mW/CH                                                                    | Stereo         | 2.5 ~ 5.5           | No                 | Active Low     | 0.6                       | Yes                     | MSOP-8                | Headphone Driver with Active Low Shutdown Mode     |
| SGM4810     |                                                                             | 87mW/CH                                                                    | Stereo         | 2.5 ~ 5.5           | No                 | Active High    | 0.5                       | Yes                     | MSOP-8                | Headphone Driver with Active High Shutdown Mode    |
| SGM4812     |                                                                             | 82mW/CH                                                                    | Stereo         | 2.7 ~ 5.5           | Yes                | Active High    | 0.36                      | Yes                     | MSOP-10               | Headphone Driver with Differential Input           |
| SGM4914     |                                                                             | 95mW/CH                                                                    | Stereo         | 2.7 ~ 5.5           | No                 | Active Low     | 0.02                      | Yes                     | TQFN-4×4-20L          | Headphone Driver with Active Low Shutdown Mode     |
| SGM4915     |                                                                             | 85mW/CH                                                                    | Stereo         | 2.5 ~ 5.5           | No                 | Active Low     | 0.02                      | Yes                     | TDFN-2×2-8L           | Headphone Driver with Small Package                |
| SGM4916     |                                                                             | 88mW/CH                                                                    | Stereo         | 2.7 ~ 5.5           | No                 | Active Low     | 0.01                      | Yes                     | TQFN-3×3-12L          | OCL Headphone Driver                               |
| SGM4917     |                                                                             | 80mW/CH                                                                    | Stereo         | 2.7 ~ 5.5           | Yes                | Active Low     | 0.01                      | Yes                     | TQFN-3×3-16L          | OCL Headphone Driver with Differential Input       |
| SGM4918     |                                                                             | 80mW/CH                                                                    | Stereo         | 2.7 ~ 5.1           | No                 | Active Low     | 0.01                      | Yes                     | TDFN-3×3-10L          | OCL Headphone Driver                               |
| SGM89000    | 2.05Vrms @V <sub>CC</sub> = 3.3V                                            |                                                                            | Stereo         | 3.0 ~ 3.6           | Yes                | Active Low     | 130                       | Yes                     | TSSOP-14              | 600Ω Audio Line Driver with UVP Function           |
| SGM8902     | 3.05Vrms                                                                    |                                                                            | Stereo         | 3.0 ~ 5.5           | Yes                | Active Low     | 130                       | Yes                     | TSSOP-14              | 600Ω Audio Line Driver                             |
| SGM8903     | 3.05Vrms                                                                    |                                                                            | Stereo         | 3.0 ~ 5.5           | Yes                | Active Low     | 130                       | Yes                     | TSSOP-14              | 600Ω Audio Line Driver with UVP Function           |
| SGM8904     | 3.05Vrms                                                                    |                                                                            | Stereo         | 3.0 ~ 5.5           | No                 | Active Low     | 130                       | Yes                     | MSOP-10               | 600Ω Audio Line Driver with UVP Function           |
| SGM8905     | 3.05Vrms                                                                    |                                                                            | Stereo         | 3.0 ~ 5.5           | No                 | Active Low     | 130                       | Yes                     | MSOP-10 (Exposed Pad) | 600Ω Audio Line Driver with UVP Function           |
| SGM8909     | 3.05Vrms                                                                    |                                                                            | Stereo         | 2.8 ~ 5.5           | No                 | Active Low     | 3400                      | Yes                     | TSSOP-14              | Audio Line Driver with Power On/Off Timing Control |
| SGM89111    | 3.05Vrms                                                                    |                                                                            | Stereo         | 3.0 ~ 5.5           | Yes                | Active Low     |                           | Yes                     | TSSOP-20              | Audio Line Driver with Video Driver                |
| SGM89112    | 3.05Vrms                                                                    |                                                                            | Stereo         | 3.0 ~ 5.5           | No                 | Active Low     |                           | Yes                     | TSSOP-16              | Audio Line Driver with Video Driver                |

# Class AB Audio Power Amplifiers

The Class AB Audio Power Amplifier family provides single-ended or full-differential audio power amplifiers that are designed for portable communication devices. With the advanced pop & click circuitry, low-power shutdown mode and minimal count of external components, these products provide up to 1.3W of continuous average power to an 8Ω load with 1% distortion (THD+N) from a battery voltage. All these features make these devices ideal for wireless handsets and other low voltage applications where minimal power consumption is a primary requirement.

| Shutdown Control |           |          |
|------------------|-----------|----------|
| SD Mode          | SD Select | Status   |
| 0                | 0         | Shutdown |
| 0                | 1         | On       |
| 1                | 0         | On       |
| 1                | 1         | Shutdown |



| Part Number | Output Power<br>RL = 8Ω |                      | Stereo or Mono | VCC (V)   | Differential Input | Shutdown Logic | Shutdown Current Typ (μA) | Package                                                                   | Features                                                  |
|-------------|-------------------------|----------------------|----------------|-----------|--------------------|----------------|---------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------|
|             | THD ≤ 1%, VCC = 3.6V    | THD ≤ 1%, VCC = 5.0V |                |           |                    |                |                           |                                                                           |                                                           |
| SGM4863     | 0.7W/CH                 | 1.3W/CH              | Stereo         | 2.8 ~ 5.5 | No                 | Active High    | 0.03                      | TSSOP-20 (Exposed Pad),TSSOP-16 (Exposed Pad),TQFN-3×3-20L,SOIC-16,DIP-16 | Class AB, BTL Output with Headphone Driver                |
| SGM4865     | 0.7W/CH                 | 1.3W/CH              | Stereo         | 2.6 ~ 5.5 | No                 | Active Low     | 0.03                      | TQFN-4×4-16L                                                              | Class AB, BTL Output                                      |
| SGM4871     |                         | 1.2W/CH              | Mono           | 2.5 ~ 5.5 | No                 | Active High    | 0.07                      | SOIC-8,SOIC-8 (Exposed Pad)                                               | Class AB, BTL Output                                      |
| SGM4888     | 0.7W/CH                 | 1.3W/CH              | Stereo         | 2.8 ~ 5.5 | No                 | Active Low     | 0.02                      | TQFN-4×4-24L                                                              | Class AB, BTL Output with 3D Enhance and Headphone Driver |
| SGM4891     | 0.6W/CH                 | 1.2W/CH              | Mono           | 2.5 ~ 5.5 | No                 | Active Low     | 0.02                      | TDFN-2×2-8L                                                               | Class AB, BTL Output                                      |
| SGM4895     | 0.65W/CH                | 1.3W/CH              | Mono           | 2.5 ~ 5.5 | Yes                | Active Low     | 0.01                      | TDFN-3×3-8L,MSOP-8 (Exposed Pad)                                          | Class AB, Fully Differential Input, BTL Output            |
| SGM4995     | 0.65W/CH                | 1.3W/CH              | Mono           | 2.5 ~ 5.5 | Yes                | Active Low     | 0.02                      | TDFN-2×2-8L                                                               | Class AB, Fully Differential Input, BTL Output            |
| SGM4996     | 0.65W/CH                | 1.3W/CH              | Mono           | 2.5 ~ 5.5 | Yes                | Active Low     | 0.01                      | MSOP-8,MSOP-10,TDFN-3×3-10L                                               | Class AB, Fully Differential Input, BTL Output            |

# High Performance Click-Pop Noise Suppressors

| Channels per Package | Part Number | Type of Switch | VCC (V)  | Quiescent Current (μA) | RON (Ω) | Bandwidth @-3dB (MHz) | Digital I/O VINH Min (V) | Digital I/O VINL Max (V) | ton (ns) | toff (ns) | Package                                  | Features                                                              |
|----------------------|-------------|----------------|----------|------------------------|---------|-----------------------|--------------------------|--------------------------|----------|-----------|------------------------------------------|-----------------------------------------------------------------------|
| 2                    | SGM4806     | 1:2            | 2.7 ~ 12 | 600                    | 1       | 100                   | 1.6                      | 0.3                      | 400      | 100       | WLCSP-1.27×2.13-15B,SOIC-16,TQFN-4×4-16L | 1Ω, High Voltage, Rail-to-Rail Negative Signal Passing, Mute Function |
| 2                    | SGM4807     | SPST           | 1.7 ~ 5  | 1.5                    | 0.09    |                       | 1.5                      | 0.4                      | 110      | Adj       | WLCSP-1.57×0.80-8B,MSOP-8,TDFN-2×2-8L    | Power On/Off and Turn On/Off Timing Control                           |
| 2                    | SGM4808     | SPST           | 2.7 ~ 12 | 300                    | 1       | 160                   | 1.4                      | 0.4                      | 200      | 60        | TQFN-2.6×1.8-16L,SOIC-16                 | 1Ω, High Voltage, Rail-to-Rail Negative Signal Passing                |

# Analog Switches

The Analog Switch family provides industry's broadest analog switches covering the requirements of low on-resistance (as low as 0.4Ω), high speed (up to 600MHz), multi-channel selection and high voltage operation (up to 40V).

|                                      | Channels<br>per<br>Package | Part<br>Number | Type of<br>Switch | V <sub>CC</sub><br>(V) | Quiescent<br>Current<br>(μA) | R <sub>ON</sub><br>(Ω) | Bandwidth<br>@-3dB<br>(MHz) | Digital I/O<br>V <sub>INH</sub> Min<br>(V) | Digital I/O<br>V <sub>INL</sub> Max<br>(V) | t <sub>ON</sub><br>(ns) | t <sub>OFF</sub><br>(ns) | Package                               | Features                                                                                    |
|--------------------------------------|----------------------------|----------------|-------------------|------------------------|------------------------------|------------------------|-----------------------------|--------------------------------------------|--------------------------------------------|-------------------------|--------------------------|---------------------------------------|---------------------------------------------------------------------------------------------|
| Operational Amplifier,<br>Comparator | 2                          | SGM2258        | 1:2               | 1.8 ~ 5.5              | <1                           | 4.5                    | 300                         | 1.6                                        | 0.5                                        | 70                      | 20                       | TQFN-2.1×1.6-10L                      | USB2.0 Full Speed Analog Switch                                                             |
|                                      | 2                          | SGM2260        | 1:2               | 1.8 ~ 4.3              | <1                           | 6                      | 300                         | 1.6                                        | 0.5                                        | 20                      | 20                       | UTQFN-1.8×1.4-10L                     | 6Ω, 300MHz, Low-Power Full-Speed USB (12Mbps) Switch                                        |
|                                      | 2                          | SGM2267        | 1:2               | 1.8 ~ 4.2              | <1                           | 0.4                    | 40                          | 1.6                                        | 0.5                                        | 96                      | 16                       | TQFN-2.1×1.6-10L                      | Ultra Low R <sub>ON</sub> , Tiny Package, Dual SPDT                                         |
|                                      | 2                          | SGM2268        | 1:2               | 1.8 ~ 4.2              | <1                           | 0.4                    | 40                          | 1.6                                        | 0.5                                        | 88                      | 16                       | TQFN-1.8×1.4-10L                      | Ultra Low R <sub>ON</sub> , Tiny Package, Dual SPDT                                         |
|                                      | 1                          | SGM3001        | 1:2               | 1.8 ~ 5.5              | <1                           | 2.5                    | 120                         | 2.4                                        | 0.8                                        | 11                      | 30                       | SC70-6                                | Small Package, 120MHz, Low On-Resistance, Single SPDT                                       |
|                                      | 2                          | SGM3002        | 1:2               | 1.8 ~ 5.5              | <1                           | 2.5                    | 120                         | 2.4                                        | 0.8                                        | 11                      | 8                        | MSOP-10                               | Small Package, 120MHz, Low On-Resistance, Dual SPDT                                         |
| Audio/Video                          | 1                          | SGM3003        | 1:2               | 1.8 ~ 5.5              | <1                           | 0.5                    | 30                          | 2.4                                        | 0.8                                        | 21                      | 9                        | MSOP-8                                | Small Package, 30MHz, Ultra Low On-Resistance, Single SPDT                                  |
|                                      | 2                          | SGM3005        | 1:2               | 1.8 ~ 5.5              | <1                           | 0.5                    | 15                          | 2.4                                        | 0.8                                        | 50                      | 15                       | TDFN-3×3-10L,MSOP-10                  | Tiny Package, 15MHz, Ultra Low On-Resistance, Dual SPDT                                     |
|                                      | 1                          | SGM3157        | 1:2               | 1.8 ~ 5.5              | <5                           | 4.5                    | 300                         | 1.5                                        | 0.6                                        | 20                      | 15                       | SC70-6                                | 300MHz, Small Package, Single SPDT                                                          |
|                                      | 2                          | SGM3158        | 1:2               | 1.8 ~ 5.5              | <5                           | 4.5                    | 270                         | 1.5                                        | 0.6                                        | 20                      | 15                       | TDFN-3×1-12L                          | 270MHz, Tiny Package, Dual SPDT                                                             |
|                                      | 1                          | SGM3167        | 1:2               | 1.8 ~ 5.5              | <5                           | 9                      | 600                         | 1.5                                        | 0.6                                        | 20                      | 15                       | SC70-6                                | 600MHz, Small Package, Single SPDT                                                          |
| Analog Switch                        | 4                          | SGM330A        | 1:2               | 5                      | <20                          | 12                     | 500                         | 2                                          | 0.6                                        | 25                      | 13                       | SOIC-16,TSSOP-16,SSOP-16              | Quad, SPDT Video Analog Switch                                                              |
|                                      | 4                          | SGM331A        | 1:2               | 5                      | <20                          | 12                     | 500                         | 2                                          | 0.6                                        | 25                      | 13                       | SOIC-16,TSSOP-16,SSOP-16              | Quad, SPDT Video Analog Switch with 1.2V Self Bias                                          |
|                                      | 4                          | SGM3699        | 1:2               | 1.8 ~ 4.35             | <1                           | 0.5                    | 70                          | 1.6                                        | 0.5                                        | 52                      | 25                       | TQFN-3×3-16L                          | 70MHz, Low Voltage, Low I <sub>Q</sub> , Ultra Low R <sub>ON</sub> , Quad SPDT              |
|                                      | 4                          | SGM3700        | 1:2               | 2.5 ~ 5.5              | <15                          | 4                      | 380                         | 1.5                                        | 0.5                                        | 15                      | 9                        | TQFN-3×3-16L                          | 380MHz, Negative Signal Passing, Quad SPDT, Tiny Package                                    |
|                                      | 2                          | SGM3710        | 1:2               | 2.7 ~ 12               | 300                          | 1/11                   | 160/130                     | 1.4                                        | 0.4                                        | 200                     | 100                      | TQFN-2.6×1.8-16L,SOIC-16              | 1Ω/11Ω, High Voltage, Rail-to-Rail Negative Signal Passing                                  |
|                                      | 2                          | SGM3711        | 1:2               | 2.7 ~ 12               | 300                          | 11                     | 300                         | 1.4                                        | 0.4                                        | 200                     | 60                       | SOIC-16,TQFN-2.6×1.8-16L              | 12V, High THD, High Off-Isolation, Very Low Crosstalk, Rail-to-Rail Negative Signal Passing |
| Power Managen                        | 2                          | SGM3712        | 1:2               | 2.7 ~ 12               | 600                          | 1                      | 100                         | 1.6                                        | 0.3                                        | 400                     | 100                      | WLCSP-1.27×2.13-15B,SOIC-14           | 1Ω, High Voltage, Rail-to-Rail Negative Signal Passing                                      |
|                                      | 2                          | SGM3717        | 1:2               | 2.5 ~ 5.0              | <6                           | 4                      | 400                         | 1.5                                        | 0.6                                        | 15                      | 11                       | UTQFN-1.8×1.4-10L,MSOP-10             | 400MHz, Negative Signal Passing, Tiny Package, Dual SPDT                                    |
|                                      | 2                          | SGM3718        | 1:2               | 2.5 ~ 5.0              | <3.5                         | 0.6                    | 80                          | 1.5                                        | 0.6                                        | 17                      | 24                       | UTQFN-1.8×1.4-10L                     | 80MHz, Negative Signal Passing, Tiny Package, Dual SPDT                                     |
|                                      | 1                          | SGM3719        | 1:2               | 2.5 ~ 5.0              | <8                           | 4                      | 400                         | 1.65                                       | 0.6                                        | 15                      | 11                       | SOT-23-6                              | 400MHz, Negative Signal Passing, Single SPDT                                                |
|                                      | 1                          | SGM3798        | 1:2               | 2.6 ~ 5.0              | 2                            | 0.075                  | 100                         | 1.4                                        | 0.4                                        | 205                     | 210                      | WLCSP-1.2×1.2-9B                      | Audio Headset Analog Switch with Reduced GND Switch R <sub>ON</sub> and FM Capability       |
|                                      | 4                          | SGM3799        | 1:2               | 1.8 ~ 4.35             | <1                           | 0.5                    | 70                          | 1.6                                        | 0.5                                        | 52                      | 25                       | TQFN-2.6×1.8-16L                      | 70MHz, Low Voltage, Low I <sub>Q</sub> , Ultra Low R <sub>ON</sub> , Quad SPDT              |
| Logic IC                             | 1                          | SGM4157YC      | 1:2               | 1.8 ~ 5.5              | 0.1                          | 0.8                    | 90                          | 1.6                                        | 0.4                                        | 56                      | 32                       | SC70-6                                | Low R <sub>ON</sub> , Small Package, Single SPDT                                            |
|                                      | 4                          | SGM44599       | 1:2               | 1.8 ~ 5.5              | <1                           | 4                      | 300                         | 1.6                                        | 0.5                                        | 31.5                    | 30                       | TQFN-3×3-16L,TQFN-2.5×2.5-16L         | 300MHz, Small Package, Quad SPDT                                                            |
|                                      | 4                          | SGM44600       | 1:2               | 1.8 ~ 5.5              | <1                           | 4                      | 300                         | 1.6                                        | 0.5                                        | 29.5                    | 29.5                     | TQFN-3×3-16L                          | 300MHz, Small Package, Quad SPDT                                                            |
|                                      | 4                          | SGM44601       | 1:2               | 1.8 ~ 5.5              | <1                           | 4                      | 300                         | 1.6                                        | 0.5                                        | 36                      | 30                       | TQFN-2.6×1.8-16L                      | 300MHz, Tiny Package, Quad SPDT                                                             |
|                                      | 4                          | SGM44602       | 1:2               | 1.8 ~ 5.5              | <1                           | 4                      | 300                         | 1.6                                        | 0.5                                        | 32                      | 26                       | TQFN-2.6×1.8-16L                      | 300MHz, Tiny Package, Quad SPDT                                                             |
| Motor/MOSFET                         | 4                          | SGM44603       | 1:2               | 1.8 ~ 5.5              | <1                           | 4.5                    | 300                         | 1.6                                        | 0.5                                        | 40                      | 30                       | TQFN-2.6×1.8-16L                      | 300MHz, Tiny Package, Quad SPDT                                                             |
|                                      | 4                          | SGM4511        | SPST              | 4.5 ~ 40               |                              | 23                     | 300                         | 1.6                                        | 0.5                                        | 40                      | 120                      | TSSOP-16,SOIC-16                      | 40V, 300MHz, Quad SPST, Fast Turn-On Time                                                   |
|                                      | 4                          | SGM4512        | SPST              | 4.5 ~ 40               |                              | 23                     | 300                         | 1.6                                        | 0.5                                        | 40                      | 120                      | TSSOP-16,SOIC-16                      | 40V, 300MHz, Quad SPST, Fast Turn-On Time                                                   |
|                                      | 2                          | SGM4515        | 1:2               | 2.7 ~ 24               | 70                           | 1/11                   | 160/130                     | 1.4                                        | 0.4                                        | 200                     | 60                       | SOIC-16,TQFN-2.6×1.8-16L              | 24V, High THD, High Off-Isolation, Very Low Crosstalk, Rail-to-Rail Negative Signal Passing |
|                                      | 2                          | SGM4516        | 1:2               | 2.7 ~ 24               | 70                           | 11                     | 300                         | 1.4                                        | 0.4                                        | 200                     | 60                       | SOIC-16,TQFN-2.6×1.8-16L              | 24V, High THD, High Off-Isolation, Very Low Crosstalk, Rail-to-Rail Negative Signal Passing |
|                                      | 2                          | SGM4517        | 1:2               | 2.7 ~ 24               | 350                          | 1                      | 100                         | 1.6                                        | 0.3                                        | 400                     | 100                      | WLCSP-1.27×2.13-15B,SOIC-14           | 24V, High THD, High Off-Isolation, Very Low Crosstalk, Rail-to-Rail Negative Signal Passing |
|                                      | 1                          | SGM4581        | 1:8               | 3.6 ~ 11               | <20                          | 36                     | 90                          | 2.4                                        | 0.8                                        | 60                      | 60                       | SSOP-16,TSSOP-16,SOIC-16,TQFN-3×3-16L | High Voltage, Single 1:8 Mux                                                                |
|                                      | 2                          | SGM4582        | 1:4               | 3.6 ~ 11               | <20                          | 36                     | 120                         | 2.4                                        | 0.8                                        | 60                      | 60                       | SSOP-16,TSSOP-16,SOIC-16,TQFN-3×3-16L | High Voltage, Dual 1:4 Mux                                                                  |
|                                      | 3                          | SGM4583        | 1:2               | 3.6 ~ 11               | <20                          | 36                     | 140                         | 2.4                                        | 0.8                                        | 60                      | 70                       | SSOP-16,TSSOP-16,SOIC-16,TQFN-3×3-16L | High Voltage, Triple 1:2 Mux                                                                |
|                                      | 1                          | SGM4588        | 1:8               | 4.5 ~ 40               |                              | 23                     | 160                         | 1.6                                        | 0.5                                        | 50                      | 180                      | TSSOP-16,SOIC-16                      | 40V, 160MHz, Single 1:8 Mux in One Package, GPIO Control                                    |
|                                      | 2                          | SGM4589        | 1:4               | 4.5 ~ 40               |                              | 23                     | 300                         | 1.6                                        | 0.5                                        | 50                      | 180                      | TSSOP-16,SOIC-16                      | 40V, 300MHz, Dual 1:4 Mux in One Package, GPIO Control                                      |
|                                      | 2                          | SGM4684        | 1:2               | 1.8 ~ 5.5              | <1                           | 0.4                    | 13                          | 2.4                                        | 0.8                                        | 25                      | 28                       | WLCSP-2.0×1.5-10B                     | Ultra Low R <sub>ON</sub> , Tiny Package, Dual SPDT                                         |

Analog Switches

Operational Amplifier,  
Comparator

Audio/Video

Analog Switch

| Channels<br>per<br>Package | Part<br>Number | Type of<br>Switch | V <sub>CC</sub><br>(V) | Quiescent<br>Current<br>(μA) | R <sub>ON</sub><br>(Ω) | Bandwidth<br>@-3dB<br>(MHz) | Digital I/O<br>V <sub>INH</sub> Min<br>(V) | Digital I/O<br>V <sub>INL</sub> Max<br>(V) | t <sub>ON</sub><br>(ns) | t <sub>OFF</sub><br>(ns) | Package                                                 | Features                                                  |
|----------------------------|----------------|-------------------|------------------------|------------------------------|------------------------|-----------------------------|--------------------------------------------|--------------------------------------------|-------------------------|--------------------------|---------------------------------------------------------|-----------------------------------------------------------|
| 2                          | SGM4717        | 1:2               | 1.8 ~ 5.5              | <5                           | 4.5                    | 300                         | 1.5                                        | 0.6                                        | 26                      | 20                       | WLCSP-2.0×1.5-10B,MSOP-10,TDFN-3×3-10L,TQFN-1.8×1.4-10L | 300MHz, WLCSP, Tiny Package, Dual SPDT                    |
| 2                          | SGM4782        | 1:4               | 1.8 ~ 4.2              | <1                           | 0.5                    | 30                          | 1.6                                        | 0.5                                        | 20                      | 20                       | TQFN-3×3-16L,TSSOP-16                                   | Ultra Low R <sub>ON</sub> , Dual, SPQT                    |
| 1                          | SGM48751       | 1:8               | 2.5 ~ 5.5              | <6                           | 48                     | 180                         | 1.7                                        | 0.5                                        | 60                      | 70                       | SSOP-16,TSSOP-16,SOIC-16,TQFN-3×3-16L                   | Low On-Resistance, Low Charge Injection, Single 1:8 Mux   |
| 2                          | SGM48752       | 1:4               | 2.5 ~ 5.5              | <6                           | 48                     | 180                         | 1.7                                        | 0.5                                        | 60                      | 70                       | SSOP-16,TSSOP-16,SOIC-16,TQFN-3×3-16L                   | Low On-Resistance, Low Charge Injection, Dual 1:4 Mux     |
| 3                          | SGM48753       | 1:2               | 2.5 ~ 5.5              | <6                           | 48                     | 180                         | 1.7                                        | 0.5                                        | 60                      | 70                       | SSOP-16,TSSOP-16,SOIC-16,TQFN-3×3-16L                   | Low On-Resistance, Low Charge Injection, Triple 1:2 Mux   |
| 4                          | SGM48754       | SPST              | 2.5 ~ 5.5              | <6                           | 24                     | 180                         | 1.7                                        | 0.5                                        | 40                      | 100                      | TSSOP-14,SOIC-14                                        | Low On-Resistance, Low Charge Injection, Quad SPST        |
| 1                          | SGM48755       | 1:4               | 2.5 ~ 5.5              | <6                           | 24                     | 180                         | 1.7                                        | 0.5                                        | 50                      | 85                       | MSOP-10                                                 | Low On-Resistance, Low Charge Injection, Single 1:4 Mux   |
| 1                          | SGM48780       | 1:4               | 1.8 ~ 4.2              | <1                           | 4                      | 150                         | 1.4                                        | 0.3                                        | 35                      | 9                        | TDFN-3×3-10L,MSOP-10                                    | Single SPQT                                               |
| 4                          | SGM5018        | 1:2               | 1.8 ~ 5.5              | <1                           | 4.5                    | 300                         | 1.6                                        | 0.5                                        | 40                      | 30                       | TSSOP-16                                                | 300MHz, Quad SPDT                                         |
| 2                          | SGM5223        | 1:2               | 1.8 ~ 4.2              | <1                           | 0.5                    | 55                          | 1.6                                        | 0.5                                        | 17                      | 27.5                     | TQFN-1.8×1.4-10L                                        | Ultra Low R <sub>ON</sub> , Dual, SPDT                    |
| 2                          | SGM7222        | 1:2               | 1.8 ~ 4.3              | <1                           | 4.5                    | 550                         | 1.6                                        | 0.5                                        | 10                      | 22                       | TQFN-1.8×1.4-10L,MSOP-10,UTQFN-1.8×1.4-10L              | USB2.0 High Speed, Dual SPDT                              |
| 2                          | SGM7223        | 1:2               | 1.8 ~ 4.3              | <1                           | 4.5                    | 500                         | 1.6                                        | 0.5                                        | 11                      | 20                       | TQFN-2.1×1.6-10L                                        | USB2.0 High Speed, Dual SPDT                              |
| 2                          | SGM7226        | 1:2               | 1.8 ~ 5.5              | <30                          | 5                      | 550                         | 1.5                                        | 0.35                                       | 15                      | 20                       | TQFN-2.6×1.8-16L                                        | 5.5V, USB2.0 High Speed, Dual SPDT                        |
| 2                          | SGM7227        | 1:2               | 1.8 ~ 4.3              | <1                           | 5                      | 550                         | 1.6                                        | 0.5                                        | 15                      | 20                       | MSOP-10,UTQFN-1.8×1.4-10L                               | 550MHz, USB2.0 Certified, Tiny Package, Dual SPDT         |
| 2                          | SGM7228        | 1:2               | 1.8 ~ 4.3              | <1                           | 6                      | 550                         | 1.6                                        | 0.5                                        | 10                      | 22                       | TQFN-1.8×1.4-10L                                        | Low Cost, High Speed USB 2.0 (480Mbps) DPDT Analog Switch |
| 2                          | SGM84782       | 1:4               | 1.8 ~ 4.2              | <1                           | 4                      | 150                         | 1.6                                        | 0.5                                        | 17                      | 9                        | TQFN-3×3-16L,TSSOP-16                                   | Dual SPQT                                                 |

Switch Complexes

Power Managen

Logic IC

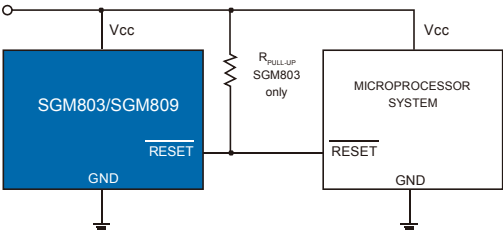
Motor/MOSFET

| Part<br>Number | Type     | V <sub>CC</sub><br>(V) | Bandwidth<br>@-3dB<br>(MHz) | Control<br>Interface | R <sub>ON</sub><br>(Ω) | R <sub>ON</sub><br>Flatness<br>(Ω) | C <sub>ON</sub><br>(pF) | C <sub>OFF</sub><br>C <sub>S</sub> /C <sub>D</sub><br>(pF) | Crosstalk Typ<br>(dB) | Charge Injection<br>Typ<br>(pC) | Package                   | Features                                              |
|----------------|----------|------------------------|-----------------------------|----------------------|------------------------|------------------------------------|-------------------------|------------------------------------------------------------|-----------------------|---------------------------------|---------------------------|-------------------------------------------------------|
| SGM6501        | 12×9     | 3.1 ~ 5.5              | 84                          | I <sup>2</sup> C     |                        |                                    |                         |                                                            | -74                   |                                 | SSOP-28,TSSOP-28          | 12×9, Buffered                                        |
| SGM6502        | 8×6      | 3.1 ~ 5.5              | 88                          | I <sup>2</sup> C     |                        |                                    |                         |                                                            | -77                   |                                 | TSSOP-24                  | 8×6, Buffered                                         |
| SGM6503        |          | 1.8 ~ 5.5              | 400                         | I/O                  |                        | 3.5/0.45                           | 12/185                  |                                                            | -80                   | 3/80                            | TQFN-3×3-20L              | SIM I/F Swap                                          |
| SGM6504        | (2:2)×4  | 1.8 ~ 5.5              | 400                         | I/O                  | 12                     | 3.5                                | 12                      |                                                            | -80                   | 2.5                             | TQFN-3×3-20L              | 4-2:2, Passive Swap                                   |
| SGM6505        | (1:2)×6  | 2 ~ 5                  | 450                         | I/O                  | 8.5                    | 4.5                                | 15                      | 4/9                                                        | -55                   | 1.2                             | TSSOP-24,TQFN-4×4-24L     | Six Channels 1:2 Multiplexer                          |
| SGM6510        | 16×4     | 2.7 ~ 5.5              | 120                         | I <sup>2</sup> C     | 30                     | 8                                  | 40                      |                                                            | -110                  | 7                               | TSSOP-28,TQFN-4×4-28L     | 16×4, Passive                                         |
| SGM6511        | 16×8     | 2.7 ~ 5.5              | 120                         | I <sup>2</sup> C     | 30                     | 8                                  | 50                      |                                                            | -110                  | 7                               | TQFN-5×5-32L,LQFP-7×7-32L | 16×8, Passive                                         |
| SGM6512        | 1:16     | 3.3 ~ 13.2             | 80                          | I/O                  | 24                     | 12                                 | 75                      | 8/70                                                       | -70                   | 25                              | TQFN-5×5-32L,TSSOP-28     | 1:16, Multiplexer                                     |
| SGM6513        | (1:8)×2  | 3.3 ~ 13.2             | 135                         | I/O                  | 24                     | 12                                 | 50                      | 8/36                                                       | -70                   | 25                              | TQFN-5×5-32L,TSSOP-28     | Dual 1:8, Multiplexer                                 |
| SGM6514        | 16×8     | 2.7 ~ 5.5              | 250                         | I <sup>2</sup> C     | 30                     | 8                                  | 50                      |                                                            | -110                  | 7                               | LQFP-7×7-32L              | High Speed, 16×8, Passive, I <sup>2</sup> C Interface |
| SGM6515        | 1:8      | 3.3 ~ 13.2             | 80                          | I/O                  | 24                     | 12                                 | 75                      | 8/70                                                       | -70                   | 25                              | TSSOP-16                  | 1:8, Multiplexer                                      |
| SGM6516        | 16×8     | 4.5 ~ 13.2             | 45                          | I/O                  | 40                     |                                    | 65                      | 25                                                         | -47                   |                                 | LQFP-10×10-44L,PLCC-44L   | 16×8, Passive                                         |
| SGM6518        | 16×8     | 2.7 ~ 5.5              | 250                         | SPI                  | 28                     | 7                                  | 50                      | 25                                                         | -55                   | 6                               | LQFP-7×7-32L              | High Speed, 16×8, Passive, Serial Digital Interface   |
| SGM65232       | (1:2)×32 | 3.3 ~ 5                | 100                         | I/O                  | 11                     |                                    | 26                      | 13                                                         | -60                   |                                 | LQFP-14×14-100L           | High Speed, 2:1 32-Bit Bus Multiplexer                |
| SGM6533        | (1:3)×3  | 2.5 ~ 5.5              | 350                         | I/O                  | 7                      |                                    |                         |                                                            | -60                   |                                 | TQFN-3×3-20L,TSSOP-20     | High Speed, 3-1:3 Multiplexer                         |
| SGM7232        | (1:3)×2  | 2.7 ~ 4.3              | 380/400                     | I/O                  | 4/9                    |                                    | 18                      | 7                                                          | -90                   |                                 | UTQFN-2.2×1.4-12L         | High Speed, 2-1:3 Multiplexer                         |



# Supervisory Circuits

The Supervisory Circuits family provides industry standard supervisory IC with high reliability and consistency, featuring low power supply manual reset, up to 8 reset thresholds suitable for monitoring 1.8V, 2.5V, 3V, 3.3V and 5V supply voltages, adjustable reset time setup with output capacitance and watchdog.



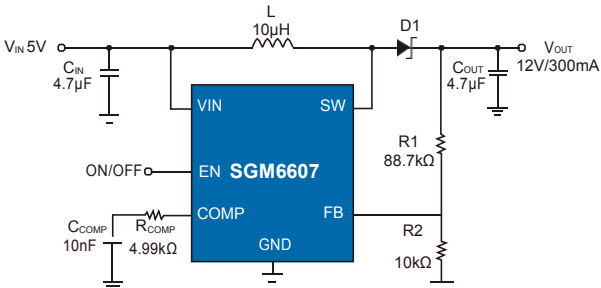
| Part Number | Supply Current (μA) | Manual Reset | V <sub>CC</sub> (V) | Reset Threshold (V)                     | Watchdog Timer | V <sub>CC</sub> to Reset Delay (μs) | Reset Active Timeout Period (ms) | Reset Output              | Package            | Features                                                                  |
|-------------|---------------------|--------------|---------------------|-----------------------------------------|----------------|-------------------------------------|----------------------------------|---------------------------|--------------------|---------------------------------------------------------------------------|
| SGM706      | 50                  | Yes          | 1.0 ~ 5.5           | 4.65,4.4,4.0,3.08,2.93,2.63             | 1.6s           |                                     | 200                              | Active Low/Push-Pull      | SOIC-8             | 6 Selectable Thresholds, Watchdog, Debounced Manual-Reset Input           |
| SGM708      | 20                  | Yes          | 1.0 ~ 5.5           | 4.65,4.4,4.0,3.08,2.93,2.63             | No             |                                     | 200                              | Active Low/High/Push-Pull | SOIC-8             | 6 Selectable Thresholds, Debounced Manual-Reset Input, Dual Reset Outputs |
| SGM800      | 3                   | No           | 1.0 ~ 5.5           | 2.93,2.63,2.32,1.63                     | No             | 80                                  | Programmable                     | Active Low/Open-Drain     | SOT-23-5           | Programmable Reset Timeout, Low Quiescent Current                         |
| SGM802      | 3                   | No           | 1.0 ~ 5.5           | 2.93,2.63,2.32,1.63                     | No             | 80                                  | Programmable                     | Active High/Push-Pull     | SC70-4 (R),SOT-143 | Programmable Reset Timeout, Low Quiescent Current, Small Package          |
| SGM803      | 13                  | No           | 1.0 ~ 5.5           | 4.63,4.38,4.00,3.08,2.93,2.63,2.32,1.63 | No             | 20                                  | 240                              | Active Low/Open-Drain     | SOT-23-3,SOT-23    | 8 Selectable Thresholds, Low Power                                        |
| SGM804      | 3                   | No           | 1.0 ~ 5.5           | 2.93,2.63,2.32,1.63                     | No             | 80                                  | Programmable                     | Active Low/Push-Pull      | SOT-23-5           | Programmable Reset Timeout, Low Quiescent Current                         |
| SGM809      | 13                  | No           | 1.0 ~ 5.5           | 4.63,4.38,4.00,3.08,2.93,2.63,2.32,1.63 | No             | 20                                  | 240                              | Active Low/Push-Pull      | SOT-23-3,SOT-23    | 8 Selectable Thresholds, Low Power                                        |
| SGM810      | 13                  | No           | 1.0 ~ 5.5           | 4.63,4.38,4.00,3.08,2.93,2.63,2.32,1.63 | No             | 20                                  | 240                              | Active High/Push-Pull     | SOT-23-3,SOT-23    | 8 Selectable Thresholds, Low Power                                        |
| SGM811      | 13                  | Yes          | 1.0 ~ 5.5           | 4.63,4.38,4.00,3.08,2.93,2.63,2.32,1.63 | No             | 20                                  | 240                              | Active Low/Push-Pull      | SOT-143,SOT-23-5   | 8 Selectable Thresholds, Low Power                                        |
| SGM812      | 13                  | Yes          | 1.0 ~ 5.5           | 4.63,4.38,4.00,3.08,2.93,2.63,2.32      | No             | 20                                  | 240                              | Active High/Push-Pull     | SOT-143,SOT-23-5   | 7 Selectable Thresholds, Low Power                                        |

# Over-Voltage Protection ICs

| Part Number | Input Over-Voltage Protection Threshold (V) | Input Voltage Max (V) | Battery Over-Voltage Protection Threshold (V) | Maximum Start-Up Output Current (mA) | Shutdown Current (μA) | Soft-Start | Soft-Stop | LDO Mode Output Voltage (V) | Package                          | Features                                                                                   |
|-------------|---------------------------------------------|-----------------------|-----------------------------------------------|--------------------------------------|-----------------------|------------|-----------|-----------------------------|----------------------------------|--------------------------------------------------------------------------------------------|
| SGM4062     | 6.8                                         | 18                    | 4.35                                          | 1500                                 | <2                    | Yes        | Yes       | 5.1                         | TDFN-2×2-8L,MSOP-8 (Exposed Pad) | 1.5A Fixed Start-Up Current, Soft-Start, Soft-Stop, 18V Input                              |
| SGM4064     | 6.8                                         | 18                    | 4.35                                          | Adj (Max 1500)                       | <2                    | Yes        | Yes       | 5.1                         | TDFN-2×2-8L                      | Adjustable Start-Up Current, Soft-Start, Soft-Stop, 18V Input                              |
| SGM4065     | 7.1                                         | 18                    | 4.35                                          | 1500                                 | <2                    | Yes        | Yes       | 5.1                         | TDFN-2×2-8L                      | 1.5A Fixed Start-Up Current, Soft-Start, Soft-Stop, 18V Input                              |
| SGM40653    | ADJ (Default 15.39V)                        | 28                    | NA                                            | 4500                                 | NA                    | Yes        | Yes       | NA                          | WLCSP-1.30×1.83-12B,TDFN-3×3-12L | 120V Surge/Inrush Immunity Function, ADJ OVP, 4.5A, Soft Start-Up, 28V Input               |
| SGM40654    | ADJ (Default 6.8V)                          | 28                    | NA                                            | 4500                                 | NA                    | Yes        | Yes       | NA                          | WLCSP-1.30×1.83-12B,TDFN-3×3-12L | 120V Surge/Inrush Immunity Function, ADJ OVP, 4.5A, Soft Start-Up, 28V Input               |
| SGM40655    | ADJ (Default 5.81V)                         | 28                    | NA                                            | 4500                                 | NA                    | Yes        | Yes       | NA                          | WLCSP-1.30×1.83-12B,TDFN-3×3-12L | 120V Surge/Inrush Immunity Function, ADJ OVP, 4.5A, Soft Start-Up, 28V Input               |
| SGM4066     | 7.1                                         | 18                    | 4.35                                          | Adj (Max 1500)                       | <2                    | Yes        | Yes       | 5.1                         | TDFN-2×2-8L                      | Adjustable Start-Up Current, Soft-Start, Soft-Stop, 18V Input                              |
| SGM40700    | ADJ (Default 15.39V)                        | 28                    | NA                                            | 4500                                 | <1                    | Yes        | Yes       | NA                          | WLCSP-1.30×1.83-12B,TDFN-3×3-12L | 120V Surge/Inrush Immunity Function, Adj OVP, 4.5A, Soft Start-Up, 28V Input with Shutdown |
| SGM40701    | ADJ (Default 6.8V)                          | 28                    | NA                                            | 4500                                 | <1                    | Yes        | Yes       | NA                          | WLCSP-1.30×1.83-12B,TDFN-3×3-12L | 120V Surge/Inrush Immunity Function, Adj OVP, 4.5A, Soft Start-Up, 28V Input with Shutdown |
| SGM40702    | ADJ (Default 5.81V)                         | 28                    | NA                                            | 4500                                 | <1                    | Yes        | Yes       | NA                          | WLCSP-1.30×1.83-12B,TDFN-3×3-12L | 120V Surge/Inrush Immunity Function, Adj OVP, 4.5A, Soft Start-Up, 28V Input with Shutdown |
| SGM41000    | 4.2,4.25,4.3,4.35,4.45                      | 8                     |                                               | 650                                  | <0.3                  | NA         | NA        | NA                          | UTDFN-1.5×2-6L,XTDFN-1.5×2-6L    | Single Battery Protection IC, Ultra Thin Package                                           |
| SGM41000A   | 4.35,4.45                                   | 8                     |                                               | 1210                                 | <0.3                  | NA         | NA        | NA                          | UTDFN-1.5×2-6L,XTDFN-1.5×2-6L    | Single Battery Protection IC, Ultra Thin Package                                           |
| SGM41000B   | 4.35,4.45                                   | 8                     |                                               | 2180                                 | <0.3                  | NA         | NA        | NA                          | UTDFN-1.5×2-6L                   | Single Battery Protection IC                                                               |
| SGM41000C   | 4.3,4.35,4.45                               | 8                     |                                               | 380                                  | <0.3                  | NA         | NA        | NA                          | UTDFN-1.5×2-6L                   | Single Battery Protection IC                                                               |

DC/DC Converters

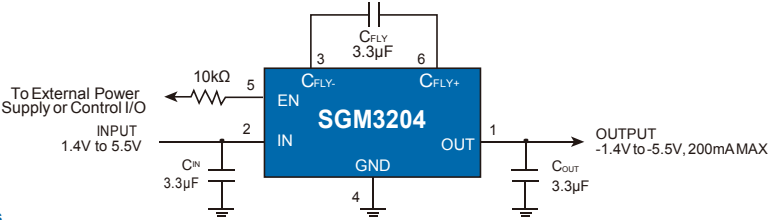
The DC/DC Converter family provides various DC/DC converters with high efficiency, high reliability in five different topologies, featuring high input voltage, low shutdown current, tiny DFN package, and SOIC-8 with exposed pad. All these features make the family extremely suitable for portable and industrial applications.



| DC/DC Topology        | Part Number | Output Current | V <sub>IN</sub> | V <sub>IN</sub> | Output Voltage  | Switching Frequency | Quiescent Current | Shutdown Current | Enable Logic | Efficiency Max | Package               | Features                                                                |
|-----------------------|-------------|----------------|-----------------|-----------------|-----------------|---------------------|-------------------|------------------|--------------|----------------|-----------------------|-------------------------------------------------------------------------|
|                       |             | Max (mA)       | Min (V)         | Max (V)         | (V)             | (MHz)               | (μA)              | (μA)             |              |                |                       |                                                                         |
| Sync Buck             | SGM6010     | 3000           | 3               | 5.5             | Adj             | 0.3 ~ 2             | 410               | <2               | Active Low   | 95%            | TDFN-3×3-10L          | 3A, High Efficiency, Low Voltage, Synchronous Buck                      |
| Sync Buck             | SGM6011     | 2000           | 2.5             | 5.5             | 3.3/Adj         | 1.4                 | 300               | <2               | Active High  | 95%            | TDFN-3×3-10L          | 2A, High Efficiency, Low Voltage, Synchronous Buck                      |
| Sync Buck             | SGM6012     | 800            | 2.5             | 5.5             | 1.2/1.8/3.3/Adj | 1.6                 | 30                | <1               | Active High  | 95%            | TSOT-23-5             | 600mA, High Efficiency, Low Voltage, Synchronous Buck                   |
| Sync Buck             | SGM6013     | 800            | 2.5             | 5.5             | 1.2/1.8/3.3/Adj | 1.6                 | 30                | <1               | Active High  | 95%            | TSOT-23-5,TDFN-2×2-6L | 600mA, High Efficiency, Low Voltage, Synchronous Buck                   |
| Sync Buck             | SGM6014     | 2000           | 2.5             | 5.5             | 1.2/1.8/3.3/Adj | 1.4                 | 55                | <2               | Active High  | 95%            | TDFN-3×3-10L          | 2A, High Efficiency, Low Voltage, Synchronous Buck                      |
| Sync Buck             | SGM6016     | 1200           | 2.7             | 5.5             | Adj             | 1.6                 | 30                | <1               | Active High  | 95%            | TDFN-3×3-10L          | 1.2A, High Efficiency, Low Voltage, Synchronous Buck                    |
| Sync Buck             | SGM6019     | 1200           | 2.7             | 5.5             | Adj             | 1.6                 | 30                | <1               | Active High  | 95%            | TDFN-2×3-8L           | 1.2A, High Efficiency, Low Voltage, Synchronous Buck                    |
| Sync Boost            | SGM6603     | 600            | 0.9             | 5.5             | 3.3/5.0/Adj     | 1.2                 | 33                | <1               | Active High  | 90%            | SOT-23-6              | 0.9V Input, Synchronous Boost                                           |
| Sync Boost            | SGM6605     | 600            | 2.7             | 5.5             | 5.0/Adj         | 1.2                 | 30                | <1               | Active High  | 90%            | SOT-23-6              | 1.1A Switch, Internal MOSFET, High Efficiency, Synchronous Boost        |
| Sync Boost            | SGM66051    | 1000           | 2.2             | 5.5             | 5.1/5.4/Adj     | 1.1                 | 20                | <1               | Active High  | 90%            | TSOT-23-6             | 2.7A Switch, Internal MOSFET, High Efficiency, Synchronous Boost        |
| Sync Boost            | SGM66052    | 1000           | 2.2             | 5.2             | 5.1/Adj         | 1.1                 | 20                | <1               | Active High  | 90%            | UTDFN-2×1.5-6L        | 2.7A Switch, Internal MOSFET, High Efficiency, Synchronous Boost        |
| Sync Boost            | SGM6606     | 2500           | 2.4             | 5               | Adj (3.0 ~ 5.0) | 0.66                | 55                | <2               | Active High  | 95%            | TDFN-3×3-14L          | 5V/2.5A, Internal MOSFET, High Efficiency, Synchronous Boost            |
| Sync Boost            | SGM6608     | 2500           | 2.4             | 5               | Adj (3.0 ~ 5.0) | 0.66                | 55                | <1               | Active High  | 95%            | TDFN-3×3-12L          | 2.5A, 660kHz, Internal MOSFET, High Efficiency, Synchronous Boost       |
| Sync Boost            | SGM6609     | 2000           | 2.4             | 5               | Adj (3.0 ~ 5.0) | 1.2                 | 50                | <1               | Active High  | 95%            | TDFN-3×3-12L          | 2.5A, 1.2MHz, High Efficiency, Sync-Boost with Adjustable Current Limit |
| Non-Sync Buck         | SGM6130     | 3000           | 4.5             | 28.5            | Adj             | 0.385               | 800               | <18              | Active High  | 94%            | SOIC-8 (Exposed Pad)  | 3A, 28.5V Input, Non-Synchronous Buck                                   |
| Non-Sync Buck         | SGM6132     | 3000           | 4.5             | 28.5            | Adj             | 1.4                 | 800               | <18              | Active High  | 91%            | SOIC-8 (Exposed Pad)  | 3A, 28.5V Input, Non-Synchronous Buck                                   |
| Non-Sync Buck         | SGM6230     | 2000           | 4.5             | 38              | Adj             | 0.385               | 800               | <18              | Active High  | 94%            | SOIC-8 (Exposed Pad)  | 2A, 38V Input, Non-Synchronous Buck                                     |
| Non-Sync Buck         | SGM6232     | 2000           | 4.5             | 38              | Adj             | 1.4                 | 800               | <18              | Active High  | 91%            | SOIC-8 (Exposed Pad)  | 2A, 38V Input, Non-Synchronous Buck                                     |
| Non-Sync Buck         | SGM6332     | 3000           | 4.5             | 18              | Adj             | 1.4                 | 800               | <18              | Active High  | 91%            | SOIC-8 (Exposed Pad)  | 3A, 18V Input, Non-Synchronous Buck                                     |
| Non-Sync Boost        | SGM6601     |                | 1.8             | 5.5             | Adj (up to 38)  | up to 1             | 20                | <1               | Active High  |                | TSOT-23-5,TDFN-2×2-6L | 400mA Switch, Internal MOSFET, High Voltage Non-Synchronous Boost       |
| Non-Sync Boost        | SGM6607     | 300†           | 3               | 20              | Adj (up to 38)  | 1.2                 | 400               | <1               | Active High  | 93%            | TDFN-2×2-6L,TSOT-23-6 | 1.1A Switch, Internal MOSFET, High Voltage Non-Synchronous Boost        |
| LCM Bias Power Supply | SGM3803     | 200            | 2.7             | 5.5             | Adj (up to 5.5) | 1.2/0.95            | 30                | <1               | Active High  | 90%            | TDFN-3×3-12L          | P/N Voltage Output, 200mA Output Current Synchronous Boost              |
| LCM Bias Power Supply | SGM3804     | 100            | 2.7             | 5.5             | Adj (2.4 ~ 6.4) | 1.6                 | 400               | 0.4              | Active High  | 84%            | WLCSP-1.7×1.51-12B    | P/N Voltage Output, 100mA Output Current Synchronous Boost              |
| LCM Bias Power Supply | SGM3806     | 200            | 2.7             | 5.5             | Adj (2.4 ~ 6.4) | 1.6                 | 400               | 0.4              | Active High  | 84%            | WLCSP-1.7×1.51-12B    | P/N Voltage Output, 200mA Output Current Synchronous Boost              |

Note: † Input Voltage = 5V, Output Voltage = 12V

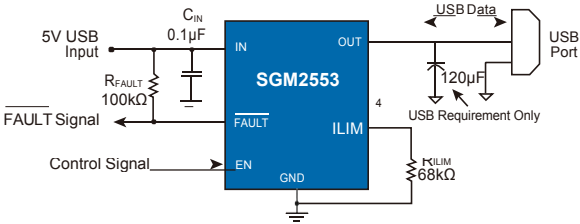
Charge Pump DC/DC Converters



| Converters per Package | Part Number | Output Current Max (mA) | Shut-down | VIN Min (V) | VIN Max (V) | Output Voltage (V) | Switching Frequency (kHz) | Quiescent Current (µA) | Shutdown Current (µA) | Output Type | Package            | Features                                            |
|------------------------|-------------|-------------------------|-----------|-------------|-------------|--------------------|---------------------------|------------------------|-----------------------|-------------|--------------------|-----------------------------------------------------|
| 1                      | SGM3110     | 100                     | Yes       | 2.7         | 5           | 5                  | 750                       | 60                     | <1                    | Regulated   | SOT-23-6           | Low Noise, Doubler/White LED Driver                 |
| 2                      | SGM3200     | 500                     | Yes       | 2.7         | 5           | 5                  | 1700                      | 70                     | <2                    | Regulated   | TDFN-3×3-8L        | Low Noise, Doubler/White LED Driver                 |
| 1                      | SGM3204     | 200                     | Yes       | 1.4         | 5.5         | -VIN               | 950                       | 1500                   | <1                    | Unregulated | SOT-23-6           | Unregulated Inverter, 950kHz, 200mA                 |
| 1                      | SGM3206     | 60                      | No        | 1.4         | 5.5         | -VIN               | 47                        | 115                    | NA                    | Unregulated | SOT-23-5           | Unregulated Inverter, 47kHz, 60mA                   |
| 1                      | SGM3207     | 60                      | No        | 1.4         | 5.5         | -VIN               | 19                        | 72                     | NA                    | Unregulated | SOT-23-5           | Unregulated Inverter, 19kHz, 60mA                   |
| 1                      | SGM3209     | 100                     | Yes       | 4           | 18          | -VIN               | 120 ~ 1280                | 1200                   | 0.5                   | Unregulated | SOIC-8,TDFN-2×2-8L | Unregulated Inverter, Programmable Frequency, 100mA |

Load Switches

Load switches are integrated electronic relays used for turning on and off power rails, power distribution and power savings. Load switches can be used in telecommunication equipment, computer equipment & peripherals, TVs & STBs, small portable devices, and test equipments with the benefits of reducing overall BOM count and solution size, as well as adding additional protection features.



| Switches<br>per<br>Package | Part<br>Number | Continuous<br>Output Current<br>(mA) | Quiescent<br>Current<br>(µA) | V <sub>IN</sub><br>Min<br>(V) | V <sub>IN</sub><br>Max<br>(V) | Enable<br>Logic | Shutdown<br>Current<br>(µA) | Current<br>Limit<br>(mA) | Soft-<br>Start | Fault<br>Flag | Package                         | Features                                                                       |
|----------------------------|----------------|--------------------------------------|------------------------------|-------------------------------|-------------------------------|-----------------|-----------------------------|--------------------------|----------------|---------------|---------------------------------|--------------------------------------------------------------------------------|
| 2                          | SGM2540        | 2000/1500                            | 88                           | 2.5                           | 20                            | Active High     |                             | 2000                     | Yes            | Yes           | UTDFN-2×2-8AL                   | Autonomous 20V Charging Sources Selection and OTG Feeding Switch Combo         |
| 1                          | SGM2551A/C     |                                      | 71                           | 2.5                           | 5.5                           | Active High     | <1                          | Programmable (100~1700)  | Yes            | No            | TDFN-2×2-6L,SOT-23-5            | 1.5A, Adjustable Current Limit, Soft-Start, Tiny Package                       |
| 1                          | SGM2553/D      | 1500                                 | 71                           | 2.5                           | 5.5                           | Active High     | <1                          | Programmable (100~1700)  | Yes            | Yes           | TDFN-2×2-6L,SOT-23-6            | 1.5A, Adjustable Current Limit, Soft-Start, Tiny Package                       |
| 1                          | SGM2554A       | 1100                                 | 19                           | 2.2                           | 5.5                           | Active High     | <1                          | 1850                     | Yes            | No            | SOT-23-5                        | 1.1A Output Current, 1.85A Fixed Current Limit, Low Power                      |
| 1                          | SGM2554B       | 1100                                 | 19                           | 2.2                           | 5.5                           | None            | NA                          | 1750                     | Yes            | No            | SOT-23-5                        | 1.1A Output Current, 1.75A Fixed Current Limit, Low Power                      |
| 1                          | SGM2555        | 1100                                 | 19                           | 2.2                           | 5.5                           | Active High     | <1                          | 1850                     | Yes            | No            | TDFN-2×2-6L                     | 1.1A Output Current, 1.85A Fixed Current Limit, Low Power                      |
| 1                          | SGM2556        | 1100                                 | 19                           | 2.2                           | 5.5                           | Active High     | <1                          | 1850                     | Yes            | Yes           | TDFN-2×2-6L                     | 1.1A Output Current, 1.85A Fixed Current Limit, Low Power                      |
| 2                          | SGM2558A       | 600/CH                               | 28                           | 2.7                           | 5.5                           | Active High     | <1                          | 1100                     | Yes            | Yes           | SOIC-8,TDFN-3×3-8L              | 600mA Output Current, 1.1A Fixed Current Limit, Dual Channels                  |
| 2                          | SGM2558B       | 600/CH                               | 28                           | 2.7                           | 5.5                           | Active Low      | <1                          | 1100                     | Yes            | Yes           | SOIC-8,TDFN-3×3-8L              | 600mA Output Current, 1.1A Fixed Current Limit, Dual Channels                  |
| 2                          | SGM2560A       | 600/CH                               | 28                           | 2.7                           | 5.5                           | Active High     | <1                          | 1100                     | Yes            | Yes           | SOIC-8,TDFN-3×3-8L              | 600mA Output Current, 1.1A Fixed Current Limit, Dual Channels                  |
| 2                          | SGM2560B       | 600/CH                               | 28                           | 2.7                           | 5.5                           | Active Low      | <1                          | 1100                     | Yes            | Yes           | SOIC-8,TDFN-3×3-8L              | 600mA Output Current, 1.1A Fixed Current Limit, Dual Channels                  |
| 1                          | SGM2576        | Adj                                  | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | Programmable (400~2500)  | Yes            | No            | SOT-23-5                        | Adjustable Current Limit, Soft-Start, Low Power                                |
| 1                          | SGM2578        | 1000                                 | 5                            | 1.0                           | 5.0                           | Active High     | <1.5                        | 1600                     |                | No            | WLCSP-0.9×0.9-4B                | 1A, Ultra Low Quiescent Current, WLCSP Package                                 |
| 1                          | SGM2581A       | 1000                                 | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | 1100                     | Yes            | Yes           | SOT-23-5                        | 1A Output Current, 1.1A Fixed Current Limit, Low Power                         |
| 1                          | SGM2581C       | 2000                                 | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | 2100                     | Yes            | Yes           | SOT-23-5                        | 2A Output Current, 2.1A Fixed Current Limit, Low Power                         |
| 1                          | SGM2581E       | 2500                                 | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | 2600                     | Yes            | Yes           | SOT-23-5                        | 2.5A† Output Current, 2.6A Fixed Current Limit, Low Power                      |
| 1                          | SGM2588A       | 1000                                 | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | 1100                     | Yes            | Yes           | SOT-23-5                        | 1A Output Current, 1.1A Fixed Current Limit, Low Power, Auto Discharge         |
| 1                          | SGM2588C       | 2000                                 | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | 2100                     | Yes            | Yes           | SOT-23-5                        | 2A Output Current, 2.1A Fixed Current Limit, Low Power, Auto Discharge         |
| 1                          | SGM2588E       | 2500                                 | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | 2600                     | Yes            | Yes           | SOT-23-5                        | 2.5A† Output Current, 2.6A Fixed Current Limit, Low Power, Auto Discharge      |
| 1                          | SGM2588G       | 1000                                 | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | 1100                     | Yes            | Yes           | SOT-23-5                        | 1A Output Current, 1.1A Fixed Current Limit, Low Power, Default Disable /EN    |
| 1                          | SGM2588I       | 2000                                 | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | 2100                     | Yes            | Yes           | SOT-23-5                        | 2A Output Current, 2.1A Fixed Current Limit, Low Power, Default Disable /EN    |
| 1                          | SGM2588K       | 2500                                 | 23                           | 2.5                           | 5.5                           | Active High     | <1                          | 2600                     | Yes            | Yes           | SOT-23-5                        | 2.5A† Output Current, 2.6A Fixed Current Limit, Low Power, Default Disable /EN |
| 1                          | SGM4073        | 6000                                 | 1                            | 1.5                           | 5.5                           | None            | <1.5                        |                          | Yes            | No            | WLCSP-1.31x1.62-12B             | 6A, Ultra Low Quiescent Current, Programmable Reset Timer, WLCSP Package       |
| 1                          | SGM4075-1      | 6000/4500                            | 1                            | 1.5                           | 5.5                           | None            | <1.5                        |                          | Yes            | No            | WLCSP-1.31x1.62-12B,TDFN-3×3-8L | 6A/4.5A, Reset Timer with Integrated Load Switch, WLCSP/TDFN Packages          |
| 1                          | SGM4075-2      | 6000                                 | 1                            | 1.5                           | 5.5                           | None            | <1.5                        |                          | Yes            | No            | WLCSP-1.31x1.62-12B             | 6A, Reset Timer with Integrated Load Switch, WLCSP Package                     |

Note: † This parameter is guaranteed by design and characterization.

Isolated Power

| Drivers per Package | Part Number | Output Power (W) | V <sub>CC</sub> Range (V) | External Resistance (kΩ) | Input Frequency (kHz) | Logic Low Input Voltage (V) | Logic High Input Voltage (V) | I <sub>CC</sub> Typ (mA) | Package              | Features                                                                   |
|---------------------|-------------|------------------|---------------------------|--------------------------|-----------------------|-----------------------------|------------------------------|--------------------------|----------------------|----------------------------------------------------------------------------|
| 1                   | SGM46000    | 3                | 2.5 ~ 5.5                 | 5 ~ 390                  | 200 ~ 2000            | 0.3                         | 2                            | 0.6                      | SOIC-8 (Exposed Pad) | 3W Output Power, Programmable Oscillator Frequency Isolated Power Supplies |

# High Voltage Linear Regulators

| Part Number | V <sub>IN</sub> Min (V) | V <sub>IN</sub> Max (V) | Output Current (mA) | Dropout Voltage (mV) | Ground Current (No Load) (μA) | PSRR @1kHz (dB) | V <sub>OUT</sub> (V)                                                    | Package                          | Features                                                 |
|-------------|-------------------------|-------------------------|---------------------|----------------------|-------------------------------|-----------------|-------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------|
| SGM2200     | 4                       | 26.4                    | 50                  | 1750                 | 1.75                          | 47              | 1.5,1.8,2.5,2.8,3.0,3.3,3.6,4.4,5.0,Adj                                 | SOT-89-3,TSOT-23-5,SOT-23,SC70-5 | High Voltage, Low I <sub>o</sub> , Small Package, Single |
| SGM2200H    | 2.7                     | 36                      | 60                  | 1600                 | 2.2                           | 40              | 0.8V to 4.7V with 0.1V per step<br>5V to 12V with 0.25V per step<br>Adj | SOT-89-3,TSOT-23-5,SOT-23,SC70-5 | High Voltage, Low I <sub>o</sub> , Small Package, Single |
| SGM2201     | 2.7                     | 36                      | 150                 | 1300                 | 4.2                           | 40              | Adj                                                                     | TSOT-23-5,TDFN-2×3-8L            | High Voltage, Low I <sub>o</sub> , Small Package, Single |
| SGM2202     | 2.7                     | 36                      | 150                 | 1300                 | 4.2                           | 40              | 0.8V to 4.7V with 0.1V per step<br>5V to 12V with 0.25V per step<br>Adj | SOT-23-5,SOT-23-6                | High Voltage, Low I <sub>o</sub> , Small Package, Single |
| SGM2203     | 2.7                     | 36                      | 150                 | 1300                 | 4.2                           | 40              | 0.8V to 4.7V with 0.1V per step<br>5V to 12V with 0.25V per step        | SOT-89-3,SOT-23,SOT-23-5         | High Voltage, Low I <sub>o</sub> , Small Package, Single |
| SGM2204     | 2.7                     | 36                      | 150                 | 1300                 | 4.2                           | 40              | 12                                                                      | SOIC-8 (Exposed Pad),TO-252-A    | High Voltage, Low I <sub>o</sub> , Single                |
| SGM2300     | 4                       | 18                      | 50                  | 1750                 | 1.7                           | 47              | 1.5,1.8,2.5,2.8,3.0,3.3,3.6,5.0,Adj                                     | SOT-23-5,SOT-23                  | High Voltage, Low I <sub>o</sub> , Small Package, Single |
| SGM71XX     | 2.7                     | 36                      | 60                  | 1600                 | 2.2                           | 40              | 3.0,3.3,3.6,4.4,5.0                                                     | SOT-89-3                         | High Voltage, Low I <sub>o</sub> , Small Package, Single |

# High Accuracy, Low Noise, Low Power LDOs

| Part Number | V <sub>OUT</sub> (V)                                                         | V <sub>IN</sub> (V) | Output Current (mA) | Dropout Voltage (mV) | Ground Current (No Load) (μA) | Output Voltage Noise (μV <sub>RMS</sub> ) | PSRR @1kHz (dB) | Package                      | Features                                                    |
|-------------|------------------------------------------------------------------------------|---------------------|---------------------|----------------------|-------------------------------|-------------------------------------------|-----------------|------------------------------|-------------------------------------------------------------|
| SGM2013     | 1.2,1.5,1.8,2.5,2.6,2.8,2.85,3.0,3.3                                         | 2.5 ~ 5.5           | 300                 | 270                  | 110                           | 140                                       | 52              | SOT-89-3                     | Low Power, Low Noise, 3-Terminal LDO                        |
| SGM2019     | 1.2,1.5,1.8,2.5,2.6,2.8,2.85,3.0,3.3,Adj                                     | 2.5 ~ 5.5           | 300                 | 270                  | 100                           | 30                                        | 74              | SOT-23-5,SC70-5              | Low Power, Low Noise, High PSRR LDO                         |
| SGM2020     | 1.2,1.5,1.8,2.5,2.8,2.85,3.0,3.3                                             | 2.5 ~ 5.5           | 300                 | 270                  | 110                           | 30                                        | 67              | SOT-23-5,SC70-5              | Low Power, Low Noise, High PSRR LDO                         |
| SGM2021     | 0.9,1.2,1.3,1.5,1.8,2.1,2.5,2.8,3.0,3.3,...5.0                               | 2.5 ~ 5.5           | 300                 | 270                  | 120                           | 120                                       | 48              | SOT-23-3                     | Low Power, Low Noise, 3-Terminal LDO                        |
| SGM2028     | 2.8,3.0,3.3,Adj                                                              | 2.5 ~ 5.5           | 500                 | 270                  | 115                           | 30                                        | 73              | SOT-23-5                     | 500mA, Low Power, Low Noise, High PSRR LDO                  |
| SGM2030     | 1.2,1.5,1.8,2.5,2.6,2.8,2.85,3.0,3.3                                         | 2.5 ~ 5.5           | 300                 | 270                  | 95                            | 140                                       | 71              | UTDFN-1.2×1.6-4L             | Mini Package, Low Power, High PSRR LDO                      |
| SGM2031     | 1.2,1.5,1.8,2.5,2.6,2.8,2.85,3.0,3.3                                         | 2.5 ~ 5.5           | 250                 | 230                  | 95                            | 140                                       | 72              | UTDFN-1×1-4L                 | Mini Package, Low Power, High PSRR LDO                      |
| SGM2032     | 0.9,1.3,2.1,2.7,2.9,3.1,3.2,3.6,4.2,5.0,Adj                                  | 2.5 ~ 5.5           | 300                 | 270                  | 120                           | 30                                        | 75              | SOT-23-5,SC70-5              | Low Power, Low Noise, High PSRR LDO                         |
| SGM2035C    | 2.8,3.0,3.3,Adj                                                              | 2.5 ~ 5.5           | 500                 | 250                  | 115                           | 30                                        | 73              | TDFN-2×2-6L,UTDFN-1.6×1.6-6L | 500mA,MiniPackage,LowPower,LowNoise,HighPSRR LDO            |
| SGM2036     | 0.8,0.9,1.0,1.05,1.1,1.2,1.3,1.5,1.8,1.85,2.1,2.2,2.3,2.5,2.6,2.7,2.8,...Adj | 1.6 ~ 5.5           | 300                 | 185                  | 20                            | 30                                        | 66              | UTDFN-1×1-4L,SOT-23-5,SC70-5 | Mini Package, Low I <sub>o</sub> , Low Noise, High PSRR LDO |
| SGM2043     | 2.8,3.3                                                                      | 2.5 ~ 5.5           | 250                 | 230                  | 95                            | 140                                       | 72              | UTDFN-1×1-4L                 | Mini Package, Low Power, High PSRR LDO                      |

# Multi-Channel, High Accuracy, Low Noise, Low Power LDOs

| Part Number | V <sub>OUT</sub> (V)                                                        | V <sub>IN</sub> (V) | Output Current (mA) | Dropout Voltage (mV) | Ground Current (No Load) (μA) | Output Voltage Noise (μV <sub>RMS</sub> ) | PSRR @1kHz (dB) | Package   | Features                             |
|-------------|-----------------------------------------------------------------------------|---------------------|---------------------|----------------------|-------------------------------|-------------------------------------------|-----------------|-----------|--------------------------------------|
| SGM2022     | 2 Channels, 2.8/1.8,2.8/1.3,2.8/1.2,2.8/1.5,2.8/2.8,1.5/3.3,2.5/1.8,...     | 2.5 ~ 5.5           | 250                 | 250                  | 190                           | 120                                       | 54              | SOT-23-6  | 2 Channels, Low Power, High Accuracy |
| SGM2027     | 2 Channels, 3.0/3.0,1.2/1.8,1.8/3.0,1.5/2.8,1.8/3.3,1.2/2.8,1.8/2.8,2.8/3.3 | 2.5 ~ 5.5           | 250                 | 250                  | 190                           | 120                                       | 54              | TSOT-23-6 | 2 Channels, Low Power, High Accuracy |



# Li-Ion Battery Chargers

| Part Number | Input Over-Voltage Protection Threshold (V) | Charge Voltage (V) | V <sub>IN</sub> Min (V) | V <sub>IN</sub> Max (V) | Programmable Current (mA) | Shutdown Current From V <sub>IN</sub> (μA) | Status Indication | Foldback Current From Battery (μA) | Package                                                     | Features                                                                                     |
|-------------|---------------------------------------------|--------------------|-------------------------|-------------------------|---------------------------|--------------------------------------------|-------------------|------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| SGM4056     | 6.8, 10.5                                   | 4.2                | 4.55                    | 26.5                    | 100 ~ 900                 | 200                                        | Yes               | <1                                 | TDFN-3×3-8L, TDFN-2×3-8L, TDFN-2×2-8L, SOIC-8 (Exposed Pad) | 100mA~900mA, 6.8V/10.5V Over-Voltage Protection, Input Voltage up to 26.5V                   |
| SGM40561    | 10.5                                        | 4.2, 4.3, 4.35     | 4.55                    | 26.5                    | 5 ~ 200                   | 180                                        | Yes               | <1                                 | TDFN-2×2-8L                                                 | 5mA ~ 200mA, 10.5V Over-Voltage Protection, Input Voltage up to 26.5V                        |
| SGM40565    |                                             | 4.2, 4.35          | 4.55                    | 26.5                    | 5 ~ 400                   | 175                                        | Yes               | <1                                 | XTDFN-2×2-8L, TDFN-2×2-8L, WLCSP-1.3×0.7-6B                 | Ultra-Thin Package, 5mA ~ 400mA, 4.2V/4.35V Output Voltage for Long Battery Life Application |
| SGM41502    | 5.5                                         | 4.2, 4.35          | 2.7                     | 5.5                     | 500 ~ 4000                |                                            | Yes               |                                    | TQFN-4×4-24AL                                               | Dual-Channel 4A Quick Charger                                                                |
| SGM41504    | 5.5                                         | 4.25, 4.35, 4.4    | 2.7                     | 5.5                     | 500 ~ 4000                |                                            | Yes               |                                    | TQFN-4×4-24AL                                               | Type-C 4A Quick Charger                                                                      |
| SGM41507    | 5.5                                         | 4.25, 4.35         | 2.7                     | 5.5                     | 500 ~ 4000                |                                            | Yes               |                                    | TQFN-4×4-24AL                                               | Multi-Channel 4A Quick Charger                                                               |
| SGM41508    | 5.5                                         | 4.25, 4.35         | 2.7                     | 5.5                     | 500 ~ 4000                |                                            | Yes               |                                    | TQFN-4×4-24AL                                               | Simple 4A Quick Charger                                                                      |

# Flash LED Drivers

The flash LED driver family provides high efficiency LED driving power needed by cameras in smart phone and tablet applications. The configurations include a single LED or dual LEDs with current source options from 500mA to 2A, high switching frequency for smaller inductors, I<sup>2</sup>C interface, and ultra compact packages.

| Channels per Package | Part Number | Output Current per Channel (mA) | V <sub>IN</sub> Min (V) | V <sub>IN</sub> Max (V) | Shutdown Current (μA) | Switching Frequency (MHz) | Quiescent Current (mA) | Package                          | Features                                    |
|----------------------|-------------|---------------------------------|-------------------------|-------------------------|-----------------------|---------------------------|------------------------|----------------------------------|---------------------------------------------|
| 1                    | SGM3140     | 500                             | 2.7                     | 5.5                     | <1                    | 2.2                       | 3                      | TDFN-3×3-10L                     | Inductor Free                               |
| 1                    | SGM3140B    | 500                             | 2.7                     | 5.5                     | <1                    | 2.2                       | 3                      | TDFN-3×3-10L                     | Inductor Free                               |
| 1                    | SGM3141     | 700                             | 2.7                     | 5.5                     | <1                    | 2.2                       | 3                      | TDFN-3×3-10L                     | Inductor Free                               |
| 1                    | SGM3141B    | 700                             | 2.7                     | 5.5                     | <1                    | 2.2                       | 3                      | TDFN-3×3-10L                     | Inductor Free                               |
| 2                    | SGM3780     | 750                             | 3                       | 5                       | <1                    | 2                         | 0.45                   | TDFN-3×2-14L                     | High Efficiency, Dual Flash LED Outputs     |
| 2                    | SGM3781     | 750                             | 3                       | 5                       | <1                    | 2                         | 0.45                   | TDFN-3×2-14L                     | High Efficiency, Dual Flash LED Outputs     |
| 2                    | SGM3784     | 1100                            | 2.7                     | 5                       | <1                    | 3/1.6                     | 0.22                   | WLCSP-2×1.6-12B                  | Independent Control Dual Flash LED Outputs  |
| 2                    | SGM3785     | 750                             | 3                       | 5                       | <1                    | 2                         | 0.45                   | TDFN-3×2-14L                     | Flash Dimming Function                      |
| 1                    | SGM37891    | 235 ~ 720                       | 2.7                     | 5.5                     | <1                    |                           |                        | TSOT-23-6, UTDFN-1.5×2-6L        | Inductor Free                               |
| 1                    | SGM37891A   | 235 ~ 1240                      | 2.7                     | 5.5                     | <1                    |                           |                        | TSOT-23-6, UTDFN-1.5×2-6L        | Inductor Free                               |
| 1                    | SGM37892    | 235 ~ 720                       | 2.7                     | 5.5                     | <1                    |                           |                        | TSOT-23-6, UTDFN-1.5×2-6L        | Inductor Free                               |
| 1                    | SGM37892A   | 235 ~ 1240                      | 2.7                     | 5.5                     | <1                    |                           |                        | TSOT-23-6, UTDFN-1.5×2-6L        | Inductor Free                               |
| 2                    | SGM37895    | 750/1000                        | 2.7                     | 5.5                     | <1                    |                           |                        | TDFN-3×3-10L, UTQFN-2.6×1.8-10AL | Inductor Free, Support I <sup>2</sup> C Bus |
| 2                    | SGM37898    | 750/1000/1500/2000              | 2.7                     | 5.5                     | <1                    |                           |                        | UTQFN-2.6×1.8-10AL               | Inductor Free, Support I <sup>2</sup> C Bus |

# White LED Drivers

The white LED driver family offers various solutions for LCD backlighting in portable device applications. The devices operate from 2.7V to 20V input supply range and deliver an output voltage up to 38V with up to 8 channels in parallel and up to 10 LEDs in series.

|                                      | Channels<br>per<br>Package | Part<br>Number | V <sub>IN</sub><br>Min<br>(V) | V <sub>IN</sub><br>Max<br>(V) | LEDs<br>per<br>String | Shutdown<br>Current<br>(μA)   | Switching<br>Frequency<br>(MHz) | LED<br>Connection<br>Type | Quiescent<br>Current<br>(mA) | Dimming Method | Package                         | Features                                             |
|--------------------------------------|----------------------------|----------------|-------------------------------|-------------------------------|-----------------------|-------------------------------|---------------------------------|---------------------------|------------------------------|----------------|---------------------------------|------------------------------------------------------|
| Operational Amplifier,<br>Comparator | 1                          | SGM3110        | 2.7                           | 5                             | 1                     | <1                            | 0.75                            | Common Anode              | 0.06                         | PWM            | SOT-23-6                        | 1P Charge Pump LED Driver                            |
|                                      | 4                          | SGM3122        | 2.7                           | 5.5                           | 1                     | <1                            | 1                               | Common Anode              | 0.1                          | PWM            | TQFN-3×3-16L                    | 4P Charge Pump LED Driver                            |
|                                      | 3                          | SGM3124        | 2.7                           | 5.5                           | 1                     | <1                            | 1                               | Common Anode              | 0.1                          | PWM            | TQFN-3×3-16L                    | 3P Charge Pump LED Driver                            |
|                                      | 4                          | SGM3127        | 2.5                           | 5.5                           | 1                     | <1                            |                                 | Common Anode              | 0.24                         | PWM            | SOT-23-6                        | 4P Low Dropout LED Driver                            |
|                                      | 4                          | SGM3131        | 2.7                           | 5.5                           | 1                     | <1                            | 1                               | Common Anode              | 0.1                          | One-Wire       | TQFN-3×3-16L                    | 4P Charge Pump LED Driver                            |
| Audio/Video<br>Driver                | 4                          | SGM3132        | 2.5                           | 5                             | 1                     | <5                            |                                 | Common Anode              | 0.55                         | One-Wire       | TQFN-3×3-16L,TDFN-2×2-8L,MSOP-8 | 4P Ultra Low Dropout LED Driver                      |
|                                      | 4                          | SGM3133        | 2.7                           | 5.5                           | 1                     | <10                           | 1                               | Common Cathode            | 0.3                          | One-Wire       | TQFN-3×3-16L                    | 4P Charge Pump LED Driver                            |
|                                      | 6                          | SGM3138        | 2.7                           | 5.5                           | 1                     | <1                            | 1                               | Common Anode              | 0.21                         | One-Wire       | TQFN-3×3-16L                    | 6P Charge Pump LED Driver                            |
|                                      | 6                          | SGM3139B       | 2.5                           | 5                             | 1                     | <5                            |                                 | Common Anode              | 0.72                         | One-Wire       | TQFN-3×3-16L                    | 6P Ultra Low Dropout LED Driver                      |
|                                      | 6                          | SGM3142        | 2.7                           | 5.5                           | 1                     | <10                           | 1                               | Common Cathode            | 0.3                          | One-Wire       | TQFN-4×4-16L                    | 6P Charge Pump LED Driver                            |
| Analog Switch                        | 6                          | SGM3144        | 2.7                           | 5.5                           | 1                     | <2.5 @ V <sub>IN</sub> = 4.2V | 0.93                            | Common Anode              | 0.155                        | PWM            | TQFN-3×3-16L                    | 6P Charge Pump LED Driver                            |
|                                      | 8                          | SGM3145        | 2.7                           | 5.5                           | 1                     | <2.5 @ V <sub>IN</sub> = 4.2V | 0.93                            | Common Anode              | 0.155                        | PWM            | TQFN-3×3-20L                    | 8P Charge Pump LED Driver                            |
|                                      | 8                          | SGM3146        | 2.7                           | 5.5                           | 1                     | <2.5 @ V <sub>IN</sub> = 4.2V | 0.93                            | Common Anode              | 0.155                        | One-Wire       | TQFN-3×3-20L                    | 8P Charge Pump LED Driver                            |
|                                      | 1                          | SGM3720        | 2.7                           | 5.5                           | 10                    | <1                            | 0.6                             | Common Anode              | 0.2                          | PWM            | TSOT-23-6                       | 600kHz, 10 LEDs per String                           |
|                                      | 1                          | SGM3725        | 2.7                           | 5.5                           | 10                    | <1                            | 1.1                             | Common Anode              | 0.2                          | One-Wire       | TSOT-23-6                       | 1.1MHz, 10 LEDs per String                           |
| Power Managen                        | 1                          | SGM3726        | 3                             | 20                            | 10                    | <1                            | 1.25                            | Common Anode              | 0.4                          | PWM            | TDFN-2×2-6L,TSOT-23-6           | 1.25MHz, 10 LEDs per String, 20V Input               |
|                                      | 1                          | SGM3727        | 2.8                           | 5                             | 10                    | <1                            |                                 | Common Anode              | 0.045                        | One-Wire       | TDFN-2×2-8L                     | 10 LEDs per String                                   |
|                                      | 1                          | SGM3732        | 2.7                           | 5.5                           | 10                    | <1                            | 1.1                             | Common Anode              | 0.2                          | PWM            | TSOT-23-6                       | 10 LEDs per String                                   |
|                                      | 1                          | SGM3733B       | 2.7                           | 20                            | 10                    | <1                            | 0.65                            | Common Anode              | 0.4                          | PWM            | TDFN-2×2-6L,TSOT-23-6           | 650kHz, 10 LEDs per String, 20V Input                |
|                                      | 1                          | SGM3735        | 2.7                           | 5.5                           | 10                    | <1                            | 1                               | Common Anode              | 0.2                          | One-Wire       | TDFN-2×2-8L                     | 10 LEDs per String                                   |
| Logic IC                             | 1                          | SGM3736        | 2.7                           | 5.5                           | 10                    | <1                            | 1.1                             | Common Anode              | 0.2                          | PWM            | TDFN-2×2-8L                     | 10 LEDs per String                                   |
|                                      | 2                          | SGM3738        | 3                             | 18                            | 10                    | <1                            | 0.6                             | Common Anode              | 0.24                         | PWM & One-Wire | TQFN-3×3-16L                    | 2 Feedback Channels, 18V Input, Serial LED Driver    |
|                                      | 3                          | SGM3740        | 3                             | 18                            | 10                    | <1                            | 0.6                             | Common Anode              | 0.24                         | PWM & One-Wire | TQFN-3×3-16L                    | 3 Feedback Channels, 18V Input, Serial LED Driver    |
|                                      | 4                          | SGM3740B       | 3                             | 18                            | 10                    | <1                            | 0.6                             | Common Anode              | 0.24                         | PWM & One-Wire | TQFN-3×3-16L                    | 4 Feedback Channels, 18V Input, Serial LED Driver    |
|                                      | 3                          | SGM3741        | 3                             | 18                            | 10                    | <1                            | 0.6                             | Common Anode              | 0.24                         | PWM & PWM      | TQFN-3×3-16L                    | 3 Feedback Channels, 18V Input, Serial LED Driver    |
| Motor/MOSFET<br>Driver               | 4                          | SGM3741B       | 3                             | 18                            | 10                    | <1                            | 0.6                             | Common Anode              | 0.24                         | PWM & PWM      | TQFN-3×3-16L                    | 4 Feedback Channels, 18V Input, Serial LED Driver    |
|                                      | 2                          | SGM3743        | 3                             | 18                            | 10                    | <1                            | 1.2                             | Common Anode              | 1.2                          | PWM & One-Wire | WLCSP-1.32×1.32-9B              | 2 Feedback Channels, 18V Input, Serial LED Driver    |
|                                      | 1                          | SGM3747        | 2.7                           | 5.5                           | 10                    | <1                            | 1.1                             | Common Anode              | 0.2                          | PWM            | TSOT-23-6                       | 1:500 High Performance 10 LEDs per String            |
|                                      | 1                          | SGM3748        | 2.7                           | 5.5                           | 10                    | <1                            | 1.1                             | Common Anode              | 0.2                          | PWM            | TDFN-2×2-8L                     | 1:500 High Performance 10 LEDs per String            |
|                                      | 1                          | SGM3749        | 3                             | 20                            | 10                    | <1                            | 1.25                            | Common Anode              | 0.4                          | PWM            | TDFN-2×2-6L,TSOT-23-6           | 1:500 High Performance 10 LEDs per String, 20V Input |
|                                      | 1                          | SGM3750        | 2.7                           | 20                            | 10                    | <1                            | 0.65                            | Common Anode              | 0.4                          | PWM            | TDFN-2×2-6L,TSOT-23-6           | 1:500 High Performance 10 LEDs per String, 20V Input |
|                                      | 1                          | SGM3752        | 2.7                           | 5.5                           | 10                    | <1                            | 1.2                             | Common Anode              | 0.2                          | PWM            | TSOT-23-6                       | 1:250 High Performance 10 LEDs per String            |
|                                      | 1                          | SGM3753        | 2.7                           | 5.5                           | 10                    | <1                            | 0.6                             | Common Anode              | 0.2                          | PWM            | TDFN-2×2-6L                     | 1:250 High Performance 10 LEDs per String            |
|                                      | 1                          | SGM3755        | 2.7                           | 5.5                           | 10                    | <1                            | 0.6                             | Common Anode              | 0.2                          | PWM            | TSOT-23-6                       | 1:350 High Performance 10 LEDs per String            |
|                                      | 1                          | SGM3756        | 2.7                           | 5.5                           | 10                    | <1                            | 1.2                             | Common Anode              | 0.2                          | PWM            | TDFN-2×2-6L                     | 1:250 High Performance 10 LEDs per String            |
|                                      | 1                          | SGM3757        | 2.7                           | 5.5                           | 10                    | <1                            | 1.2                             | Common Anode              | 0.2                          | PWM            | TDFN-2×2-8L                     | 1:250 High Performance 10 LEDs per String            |
|                                      |                            |                |                               |                               |                       |                               |                                 |                           |                              |                |                                 |                                                      |

# Level Translators

| Translators<br>per<br>Package        | Part<br>Number | Data<br>Rate<br>(Mbps) | V <sub>CC</sub><br>(V) | V <sub>L</sub><br>Range<br>(V) | V <sub>CCA</sub><br>Range<br>(V) | V <sub>CCB</sub><br>Range<br>(V) | Bidirectional | V <sub>CC</sub><br>Shutdown<br>I/O State | Shutdown I <sub>CC</sub><br>Max<br>(μA) | Logic Output         | Package                                | Features                            |
|--------------------------------------|----------------|------------------------|------------------------|--------------------------------|----------------------------------|----------------------------------|---------------|------------------------------------------|-----------------------------------------|----------------------|----------------------------------------|-------------------------------------|
| Operational Amplifier,<br>Comparator | 2              | SGM4551                |                        |                                | 1.2 ~ 3.3                        | 1.8 ~ 5.5                        | Yes           | Hi-Z                                     | 8                                       | Open-Drain           | SOT-23-8,XTDFN-1.4×1-8L                | I <sup>2</sup> C Level Shifter      |
|                                      | 1              | SGM4552                | 24/2                   |                                | 1.65 ~ 5.5                       | 2.3 ~ 5.5                        | Yes           | Hi-Z                                     | 5.5                                     | Open-Drain/Push-Pull | UTDFN-1.45×1-6L,SOT-23-6,SC70-6        | GPIO Level Shifter                  |
|                                      | 2              | SGM4553                | 24/2                   |                                | 1.65 ~ 5.5                       | 2.3 ~ 5.5                        | Yes           | Hi-Z                                     | 5.5                                     | Open-Drain/Push-Pull | SOT-23-8,XTDFN-1.4×1-8L                | GPIO Level Shifter                  |
|                                      | 1              | SGM4554                | 100                    |                                | 1.2 ~ 5.0                        | 1.65 ~ 5.5                       | Yes           | Hi-Z                                     | 10                                      | Push-Pull            | SC70-6,UTDFN-1.45×1-6L                 | GPIO Level Shifter                  |
|                                      | 1              | SGM4555                |                        | 2.7 ~ 5.5                      | 1.4 ~ 5.5                        |                                  | Yes           | Low                                      |                                         |                      | TQFN-2×2-12L,TQFN-3×3-16L              | Card Interface                      |
|                                      | 2              | SGM4556                | 100                    |                                | 1.2 ~ 5.0                        | 1.65 ~ 5.5                       | Yes           | Hi-Z                                     | 10                                      | Push-Pull            | SOT-23-8,XTDFN-1.4×1-8L                | GPIO Level Shifter                  |
|                                      | 2              | SGM4558                |                        | 2.7 ~ 5.5                      | 1.4 ~ 5.5                        |                                  | Yes           | Low                                      | 2                                       |                      | TQFN-3×3-20L                           | SIM/Smart Card Interface            |
|                                      | 1              | SGM4560                |                        | 3.3 ~ 5.5                      | 1.6 ~ 5.5                        |                                  | Yes           | Low                                      | 8                                       |                      | TSSOP-14                               | CA Card Interface                   |
| Audio/Video<br>Driver                | 1              | SGM4561                |                        | 5.0 ~ 5.5                      | 1.6 ~ 5.5                        |                                  | Yes           | Low                                      |                                         |                      | MSOP-10                                | HDMI Interface                      |
|                                      | 4              | SGM4563                | 100                    |                                | 1.2 ~ 5.5                        | 1.65 ~ 5.5                       | No            | Hi-Z                                     | 5                                       | Push-Pull            | SOIC-14,UTQFN-1.8×1.8-12L              | SPI Bus or UART Interface           |
|                                      | 4              | SGM4564                | 100                    |                                | 1.2 ~ 5.5                        | 1.65 ~ 5.5                       | Yes           | Hi-Z                                     | 12/9                                    | Push-Pull            | SOIC-14,UTQFN-1.8×1.8-12L,TQFN-2×2-12L | GPIO Level Shifter                  |
|                                      | 6              | SGM4566                | 100                    |                                | 1.2 ~ 5.5                        | 1.65 ~ 5.5                       | Yes           | Hi-Z                                     | 12/9                                    | Push-Pull            | TSSOP-16,TQFN-2.6×1.8-16L              | GPIO Level Shifter                  |
|                                      | 8              | SGM4568                | 100                    |                                | 1.2 ~ 5.5                        | 1.65 ~ 5.5                       | Yes           | Hi-Z                                     | 12/9                                    | Push-Pull            | TSSOP-20,TQFN-3×3-20L                  | GPIO Level Shifter                  |
|                                      | 4              | SGM4T245               |                        |                                | 1.2 ~ 5.0                        | 1.2 ~ 5.0                        | Yes           | Hi-Z                                     | 2                                       | Push-Pull            | TSSOP-16,TQFN-2.6×1.8-16L              | 4-Bit Non-Inverting Bus Transceiver |
|                                      | 8              | SGM8T245               |                        |                                | 1.2 ~ 5.0                        | 1.2 ~ 5.0                        | Yes           | Hi-Z                                     | 2                                       | Push-Pull            | TSSOP-24,TQFN-5.5×3.5-24L              | 8-Bit Non-Inverting Bus Transceiver |
|                                      |                |                        |                        |                                |                                  |                                  |               |                                          |                                         |                      |                                        |                                     |

# Level Shifters and Drivers

| Channels<br>per<br>Package | Part<br>Number | V <sub>IN</sub><br>Range<br>(V) | V <sub>CC</sub><br>Range<br>(V) | Logic Low<br>Input Voltage<br>(V) | Logic High<br>Input Voltage<br>(V) | Enable Voltage<br>Range<br>(V) | EN High<br>Threshold (V <sub>ENH</sub> )<br>(V) | EN Low<br>Threshold (V <sub>ENL</sub> )<br>(V) | Output Peak<br>Current<br>(A) | Rise<br>Time<br>(ns) | Fall<br>Time<br>(ns) | Shutdown I <sub>CC</sub><br>Max<br>(mA) | V <sub>CC</sub><br>Shutdown<br>I/O State | Package            | Features                                        |
|----------------------------|----------------|---------------------------------|---------------------------------|-----------------------------------|------------------------------------|--------------------------------|-------------------------------------------------|------------------------------------------------|-------------------------------|----------------------|----------------------|-----------------------------------------|------------------------------------------|--------------------|-------------------------------------------------|
| 2                          | SGM4546        | 1.8 ~ 5.5                       | 4.5 ~ 26.5                      | 0.7                               | 1.6                                | 0 ~ 5.5                        | 2.1                                             | 0.6                                            | 2                             | 12                   | 13                   | 0.24                                    | Low                                      | SOIC-8,TDFN-2×2-8L | Piezo-Sounder and Ultra-Sound Transducer Driver |
| 2                          | SGM4547        | 2.5 ~ 20                        | 4.5 ~ 26.5                      | 0.7                               | 1.6                                | 0 ~ 5.5                        | 2.1                                             | 0.6                                            | 2                             | 12                   | 13                   | 0.24                                    | Low                                      | TDFN-3×3-14L       | High SPL Piezo-Sounder Driver                   |
| 2                          | SGM4548        | NA                              | 4.5 ~ 26.5                      | 0.7                               | 1.6                                | 0 ~ 5.5                        | 2.1                                             | 0.6                                            | 2                             | 12                   | 13                   | 0.24                                    | Low                                      | SOIC-8,TDFN-2×2-8L | High Speed, Dual Level Shifters and Drivers     |
| 2                          | SGM4549        | NA                              | 4.5 ~ 26.5                      | 0.7                               | 1.6                                | 0 ~ 5.5                        | 2.1                                             | 0.6                                            | 2                             | 12                   | 13                   | 0.24                                    | Low                                      | SOIC-8,TDFN-2×2-8L | High Speed, Dual Level Shifters and Drivers     |
| 2                          | SGM4550        | NA                              | 4.5 ~ 26.5                      | 0.7                               | 1.6                                | 0 ~ 5.5                        | 2.1                                             | 0.6                                            | 2                             | 12                   | 13                   | 0.24                                    | Low                                      | SOIC-8,TDFN-2×2-8L | High Speed, Dual Level Shifters and Drivers     |

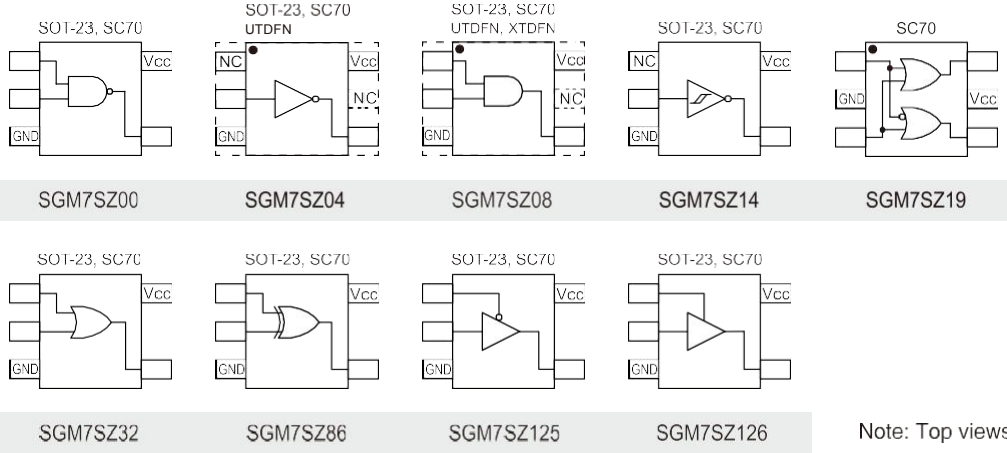
# Small Logic Series

| Part Number | Package                                      | Features                                            |
|-------------|----------------------------------------------|-----------------------------------------------------|
| SGM7SZ00    | SOT-23-5,SC70-5                              | Single 2-Input NAND Gate                            |
| SGM7SZ04    | SOT-23-5,SC70-5,UTDFN-1.45×1-6L              | Single Inverter                                     |
| SGM7SZ08    | XTDFN-1×1-6L,SOT-23-5,SC70-5,UTDFN-1.45×1-6L | Single 2-Input AND Gate                             |
| SGM7SZ125   | SOT-23-5,SC70-5                              | Single Active-Low Tri-State Logic Buffer            |
| SGM7SZ126   | SOT-23-5,SC70-5                              | Single Active-High Tri-State Logic Buffer           |
| SGM7SZ14    | SOT-23-5,SC70-5                              | Single Inverter with Schmitt Trigger Input          |
| SGM7SZ19    | SC70-6                                       | Single 1-of-2 Decoder/Demultiplexer                 |
| SGM7SZ244   | TSSOP-20,TQFN-5.5×3.5-24L,TQFN-3×3-20L       | Octal Buffers and Line Drivers with 3-State Outputs |
| SGM7SZ245   | TSSOP-20,TQFN-5.5×3.5-24L,TQFN-3×3-20L       | Octal Bus Transceivers with 3-State Outputs         |
| SGM7SZ32    | SOT-23-5,SC70-5                              | Single 2-Input OR Gate                              |
| SGM7SZ86    | SOT-23-5,SC70-5                              | Single 2-Input Exclusive-OR Gate                    |

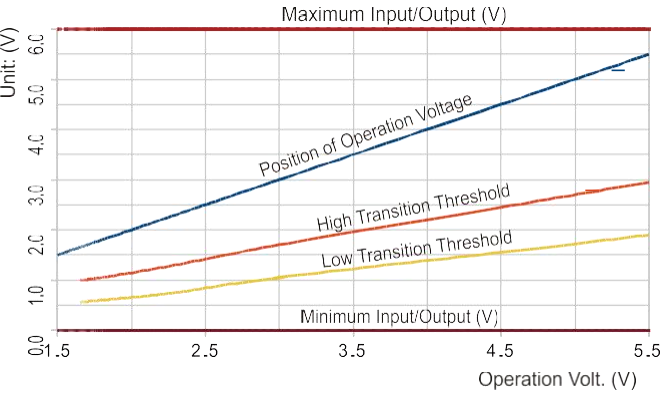
## Specifications

|                                                                       |                 |
|-----------------------------------------------------------------------|-----------------|
| Operation Supply Range                                                | 1.65 ~ 5.5 (V)  |
| Data Retention Supply Range                                           | 1.5 ~ 5.5 (V)   |
| Input/Output Voltage Range                                            | 0 ~ 5.5 (V)     |
| Input/Output Leakage Current and Quiescent Supply Current             | ±0.1 (μA)       |
| Low Level Input Threshold                                             | 0.25Vcc (V)     |
| High Level Input Threshold                                            | 0.75Vcc (V)     |
| Output Driving, at Vcc=3V                                             | ±24 (mA)        |
| Propagation Delay (varied with different devices and supply voltages) | 2.3 ~ 10.3 (ns) |

## Symbols and Pins



The relationship between DC threshold of other parameters and operating voltage.



Except devices with Schmitt trigger on the input, logic state is defined only when input level is above or below the threshold; logic state under any other input condition is undefined and not guaranteed. For devices with Schmitt trigger input, logic state is stable at any input level, and is determined by the last effective triggering.



# Motor Drivers

| Full Bridges<br>per<br>Package | Part<br>Number | V <sub>CC</sub><br>Min<br>(V) | V <sub>CC</sub><br>Max<br>(V) | RMS<br>Output Current<br>(A) | Peak<br>Output Current<br>(A) | Control<br>Interface | R <sub>DS(ON)</sub><br>(HS+LS) per Channel<br>(mΩ) | Operating<br>Temperature<br>Range (°C) | Package                             | Features                                              |
|--------------------------------|----------------|-------------------------------|-------------------------------|------------------------------|-------------------------------|----------------------|----------------------------------------------------|----------------------------------------|-------------------------------------|-------------------------------------------------------|
| 2                              | SGM42600       | 2.7                           | 24                            | 1.5                          | 2                             | PWM                  | 412                                                | -40 to +125                            | TSSOP-16(Exposed Pad), TQFN-4×4-16L | Dual H-Bridge Motor Driver, Outputs can be Paralleled |
| 1                              | SGM42609       | 2.7                           | 24                            | 1.5                          | 2                             | PWM                  | 570                                                | -40 to +125                            | MSOP-10,TDFN-3×3-10L                | Single H-Bridge Motor Driver                          |

# MOSFET Drivers

| Drivers<br>per<br>Package | Part<br>Number | Output Peak<br>Current<br>(A) | V <sub>CC</sub><br>(V) | Rise<br>Time<br>(ns) | Fall<br>Time<br>(ns) | Logic Low<br>Input Voltage<br>(V) | Logic High<br>Input Voltage<br>(V) | Input<br>Hysteresis<br>(V) | I <sub>CC</sub> Typ<br>(mA) | Package            | Features                                            |
|---------------------------|----------------|-------------------------------|------------------------|----------------------|----------------------|-----------------------------------|------------------------------------|----------------------------|-----------------------------|--------------------|-----------------------------------------------------|
| 2                         | SGM48000       | 2                             | 4.5 ~ 26.5             | 12                   | 13                   | 0.7                               | 1.6                                | 0.3                        | 1.14                        | SOIC-8,TDFN-2×2-8L | 2A Peak Current, 26.5V, Dual Non-Inverting          |
| 2                         | SGM48001       | 2                             | 4.5 ~ 26.5             | 12                   | 13                   | 0.7                               | 1.6                                | 0.3                        | 1.29                        | SOIC-8,TDFN-2×2-8L | 2A Peak Current, 26.5V, Dual Inverting              |
| 2                         | SGM48002       | 2                             | 4.5 ~ 26.5             | 12                   | 13                   | 0.7                               | 1.6                                | 0.3                        | 1.19                        | SOIC-8,TDFN-2×2-8L | 2A Peak Current, 26.5V, Inverting and Non-Inverting |