



SGM808B

Small Package, High Precision Voltage Detector

GENERAL DESCRIPTION

The SGM808B is a low-power and high-accuracy voltage detector. The adjustable threshold range is 1.5V to 6V with increments of 0.1V, which greatly provides application flexibility.

The device has an N-channel open-drain output. It is very suitable for applications in power sequencing, reset sequencing and power switching.

The SGM808B is available in Green SC70-4 (R), SOT-23-5 and SOT-89-3 packages. It is specified over the -40°C to +125°C operating junction temperature range.

FEATURES

- **Operating Voltage Range: 0.95V to 10V**
- **High Accuracy Detection: $\pm 1.5\%$ at $T_J = +25^\circ\text{C}$**
- **Low Power Consumption: $1\mu\text{A}$ (TYP) at $V_{CC} = 3.5\text{V}$**
- **Detection Voltage Range: 1.5V to 6V (0.1V Increments)**
- **Hysteresis Characteristics: 5% (TYP)**
- **N-Channel Open-Drain Output**
- **Available in Green SC70-4 (R), SOT-23-5 and SOT-89-3 Packages**

APPLICATIONS

Power Sequencing and Reset Sequencing
Power Switching
Automotive Equipment
Portable Equipment
Computers/Servers

PACKAGE/ORDERING INFORMATION

| MODEL | DETECTION VOLTAGE (V) | PACKAGE DESCRIPTION | SPECIFIED TEMPERATURE RANGE | ORDERING NUMBER | PACKAGE MARKING | PACKING OPTION |
|-------------|-----------------------|---------------------|-----------------------------|--------------------|-----------------|---------------------|
| SGM808B-1.5 | 1.5 | SC70-4 (R) | -40°C to +125°C | SGM808B-1.5XC4G/TR | SAGXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-1.5XN5G/TR | SAHXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-1.5XK3G/TR | SAIXX | Tape and Reel, 1000 |
| SGM808B-1.6 | 1.6 | SC70-4 (R) | -40°C to +125°C | SGM808B-1.6XC4G/TR | SAJXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-1.6XN5G/TR | SAKXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-1.6XK3G/TR | ORAXX | Tape and Reel, 1000 |
| SGM808B-1.7 | 1.7 | SC70-4 (R) | -40°C to +125°C | SGM808B-1.7XC4G/TR | SALXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-1.7XN5G/TR | SAMXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-1.7XK3G/TR | SANXX | Tape and Reel, 1000 |
| SGM808B-1.8 | 1.8 | SC70-4 (R) | -40°C to +125°C | SGM808B-1.8XC4G/TR | SUVXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-1.8XN5G/TR | SAPXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-1.8XK3G/TR | SAQXX | Tape and Reel, 1000 |
| SGM808B-1.9 | 1.9 | SC70-4 (R) | -40°C to +125°C | SGM808B-1.9XC4G/TR | SARXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-1.9XN5G/TR | SASXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-1.9XK3G/TR | SATXX | Tape and Reel, 1000 |
| SGM808B-2.0 | 2.0 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.0XC4G/TR | SAUXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.0XN5G/TR | SAVXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.0XK3G/TR | SAWXX | Tape and Reel, 1000 |
| SGM808B-2.1 | 2.1 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.1XC4G/TR | SAXXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.1XN5G/TR | SAYXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.1XK3G/TR | SAZXX | Tape and Reel, 1000 |
| SGM808B-2.2 | 2.2 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.2XC4G/TR | SBGXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.2XN5G/TR | SBHXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.2XK3G/TR | SBIXX | Tape and Reel, 1000 |
| SGM808B-2.3 | 2.3 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.3XC4G/TR | SBJXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.3XN5G/TR | SBKXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.3XK3G/TR | SBLXX | Tape and Reel, 1000 |
| SGM808B-2.4 | 2.4 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.4XC4G/TR | SBMXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.4XN5G/TR | SBNXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.4XK3G/TR | SUWXX | Tape and Reel, 1000 |

PACKAGE/ORDERING INFORMATION (continued)

| MODEL | DETECTION VOLTAGE (V) | PACKAGE DESCRIPTION | SPECIFIED TEMPERATURE RANGE | ORDERING NUMBER | PACKAGE MARKING | PACKING OPTION |
|-------------|-----------------------|---------------------|-----------------------------|--------------------|-----------------|---------------------|
| SGM808B-2.5 | 2.5 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.5XC4G/TR | SBPXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.5XN5G/TR | SBQXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.5XK3G/TR | SBRXX | Tape and Reel, 1000 |
| SGM808B-2.6 | 2.6 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.6XC4G/TR | SBSXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.6XN5G/TR | SBTXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.6XK3G/TR | SBUXX | Tape and Reel, 1000 |
| SGM808B-2.7 | 2.7 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.7XC4G/TR | SBVXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.7XN5G/TR | SBWXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.7XK3G/TR | SBXXX | Tape and Reel, 1000 |
| SGM808B-2.8 | 2.8 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.8XC4G/TR | SBYXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.8XN5G/TR | SBZXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.8XK3G/TR | SCGXX | Tape and Reel, 1000 |
| SGM808B-2.9 | 2.9 | SC70-4 (R) | -40°C to +125°C | SGM808B-2.9XC4G/TR | SCHXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-2.9XN5G/TR | R5FXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-2.9XK3G/TR | SCIXX | Tape and Reel, 1000 |
| SGM808B-3.0 | 3.0 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.0XC4G/TR | SCJXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.0XN5G/TR | SCKXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.0XK3G/TR | SCLXX | Tape and Reel, 1000 |
| SGM808B-3.1 | 3.1 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.1XC4G/TR | SCMXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.1XN5G/TR | SCNXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.1XK3G/TR | SUXXX | Tape and Reel, 1000 |
| SGM808B-3.2 | 3.2 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.2XC4G/TR | SCPXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.2XN5G/TR | SCQXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.2XK3G/TR | SCRXX | Tape and Reel, 1000 |
| SGM808B-3.3 | 3.3 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.3XC4G/TR | SCSXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.3XN5G/TR | SCTXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.3XK3G/TR | SCUXX | Tape and Reel, 1000 |
| SGM808B-3.4 | 3.4 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.4XC4G/TR | SCVXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.4XN5G/TR | SCWXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.4XK3G/TR | SCXXX | Tape and Reel, 1000 |

PACKAGE/ORDERING INFORMATION (continued)

| MODEL | DETECTION VOLTAGE (V) | PACKAGE DESCRIPTION | SPECIFIED TEMPERATURE RANGE | ORDERING NUMBER | PACKAGE MARKING | PACKING OPTION |
|-------------|-----------------------|---------------------|-----------------------------|--------------------|-----------------|---------------------|
| SGM808B-3.5 | 3.5 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.5XC4G/TR | SCYXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.5XN5G/TR | SCZXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.5XK3G/TR | SDGXX | Tape and Reel, 1000 |
| SGM808B-3.6 | 3.6 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.6XC4G/TR | SDHXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.6XN5G/TR | SDIXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.6XK3G/TR | SDJXX | Tape and Reel, 1000 |
| SGM808B-3.7 | 3.7 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.7XC4G/TR | SDKXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.7XN5G/TR | SDLXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.7XK3G/TR | SDMXX | Tape and Reel, 1000 |
| SGM808B-3.8 | 3.8 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.8XC4G/TR | SDNXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.8XN5G/TR | SUYXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.8XK3G/TR | SDPXX | Tape and Reel, 1000 |
| SGM808B-3.9 | 3.9 | SC70-4 (R) | -40°C to +125°C | SGM808B-3.9XC4G/TR | SDQXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-3.9XN5G/TR | SDRXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-3.9XK3G/TR | SDSXX | Tape and Reel, 1000 |
| SGM808B-4.0 | 4.0 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.0XC4G/TR | SDTXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.0XN5G/TR | SDUXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.0XK3G/TR | SDVXX | Tape and Reel, 1000 |
| SGM808B-4.1 | 4.1 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.1XC4G/TR | SDWXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.1XN5G/TR | SDXXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.1XK3G/TR | SDYXX | Tape and Reel, 1000 |
| SGM808B-4.2 | 4.2 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.2XC4G/TR | SDZXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.2XN5G/TR | SEGXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.2XK3G/TR | SEHXX | Tape and Reel, 1000 |
| SGM808B-4.3 | 4.3 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.3XC4G/TR | SEIXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.3XN5G/TR | SEJXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.3XK3G/TR | SEKXX | Tape and Reel, 1000 |
| SGM808B-4.4 | 4.4 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.4XC4G/TR | SELXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.4XN5G/TR | SEMXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.4XK3G/TR | SENXX | Tape and Reel, 1000 |

PACKAGE/ORDERING INFORMATION (continued)

| MODEL | DETECTION VOLTAGE (V) | PACKAGE DESCRIPTION | SPECIFIED TEMPERATURE RANGE | ORDERING NUMBER | PACKAGE MARKING | PACKING OPTION |
|-------------|-----------------------|---------------------|-----------------------------|--------------------|-----------------|---------------------|
| SGM808B-4.5 | 4.5 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.5XC4G/TR | SUZXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.5XN5G/TR | SEPXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.5XK3G/TR | SEQXX | Tape and Reel, 1000 |
| SGM808B-4.6 | 4.6 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.6XC4G/TR | SERXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.6XN5G/TR | SESXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.6XK3G/TR | SETXX | Tape and Reel, 1000 |
| SGM808B-4.7 | 4.7 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.7XC4G/TR | SEUXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.7XN5G/TR | SEVXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.7XK3G/TR | SEWXX | Tape and Reel, 1000 |
| SGM808B-4.8 | 4.8 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.8XC4G/TR | SEXXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.8XN5G/TR | SEYXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.8XK3G/TR | SEZXX | Tape and Reel, 1000 |
| SGM808B-4.9 | 4.9 | SC70-4 (R) | -40°C to +125°C | SGM808B-4.9XC4G/TR | SFGXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-4.9XN5G/TR | SFHXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-4.9XK3G/TR | SFIXX | Tape and Reel, 1000 |
| SGM808B-5.0 | 5.0 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.0XC4G/TR | SFJXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.0XN5G/TR | SFKXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.0XK3G/TR | SFLXX | Tape and Reel, 1000 |
| SGM808B-5.1 | 5.1 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.1XC4G/TR | SFMXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.1XN5G/TR | SFNXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.1XK3G/TR | SVGXX | Tape and Reel, 1000 |
| SGM808B-5.2 | 5.2 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.2XC4G/TR | SFPXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.2XN5G/TR | SFQXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.2XK3G/TR | SFRXX | Tape and Reel, 1000 |
| SGM808B-5.3 | 5.3 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.3XC4G/TR | SFSXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.3XN5G/TR | SFTXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.3XK3G/TR | SFUXX | Tape and Reel, 1000 |
| SGM808B-5.4 | 5.4 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.4XC4G/TR | SFVXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.4XN5G/TR | SFWXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.4XK3G/TR | SFXXX | Tape and Reel, 1000 |

PACKAGE/ORDERING INFORMATION (continued)

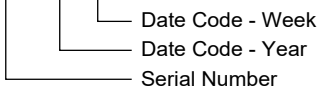
| MODEL | DETECTION VOLTAGE (V) | PACKAGE DESCRIPTION | SPECIFIED TEMPERATURE RANGE | ORDERING NUMBER | PACKAGE MARKING | PACKING OPTION |
|-------------|-----------------------|---------------------|-----------------------------|--------------------|-----------------|---------------------|
| SGM808B-5.5 | 5.5 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.5XC4G/TR | SFYXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.5XN5G/TR | SFZXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.5XK3G/TR | SGGXX | Tape and Reel, 1000 |
| SGM808B-5.6 | 5.6 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.6XC4G/TR | SGHXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.6XN5G/TR | SGIXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.6XK3G/TR | SGJXX | Tape and Reel, 1000 |
| SGM808B-5.7 | 5.7 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.7XC4G/TR | SGKXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.7XN5G/TR | SGLXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.7XK3G/TR | SGMXX | Tape and Reel, 1000 |
| SGM808B-5.8 | 5.8 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.8XC4G/TR | SGNXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.8XN5G/TR | SVHXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.8XK3G/TR | SGPXX | Tape and Reel, 1000 |
| SGM808B-5.9 | 5.9 | SC70-4 (R) | -40°C to +125°C | SGM808B-5.9XC4G/TR | SGQXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-5.9XN5G/TR | SGRXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-5.9XK3G/TR | SGSXX | Tape and Reel, 1000 |
| SGM808B-6.0 | 6.0 | SC70-4 (R) | -40°C to +125°C | SGM808B-6.0XC4G/TR | SGTXX | Tape and Reel, 3000 |
| | | SOT-23-5 | -40°C to +125°C | SGM808B-6.0XN5G/TR | SGUXX | Tape and Reel, 3000 |
| | | SOT-89-3 | -40°C to +125°C | SGM808B-6.0XK3G/TR | SGVXX | Tape and Reel, 1000 |

NOTE: If you need push-pull output devices, please contact the factory.

MARKING INFORMATION

NOTE: XX = Date Code.

YYY X X



Green (RoHS & HSF): SG Micro Corp defines "Green" to mean Pb-Free (RoHS compatible) and free of halogen substances. If you have additional comments or questions, please contact your SGMICRO representative directly.

ABSOLUTE MAXIMUM RATINGS

| | |
|---|-------------------|
| Input Voltage Range | GND - 0.3V to 12V |
| Output Voltage, V_{OUT} | GND - 0.3V to 12V |
| Output Current, I_{OUT} | 50mA |
| Package Thermal Resistance | |
| SC70-4 (R), θ_{JA} | 672°C/W |
| SOT-23-5, θ_{JA} | 260°C/W |
| SOT-89-3, θ_{JA} | 115°C/W |
| Junction Temperature | +150°C |
| Storage Temperature Range | -65°C to +150°C |
| Lead Temperature (Soldering, 10s) | +260°C |
| ESD Susceptibility | |
| HBM | 4000V |
| CDM | 1000V |

RECOMMENDED OPERATING CONDITIONS

Operating Junction Temperature Range..... -40°C to +125°C

OVERSTRESS CAUTION

Stresses beyond those listed in Absolute Maximum Ratings may cause permanent damage to the device. Exposure to absolute maximum rating conditions for extended periods may affect reliability. Functional operation of the device at any conditions beyond those indicated in the Recommended Operating Conditions section is not implied.

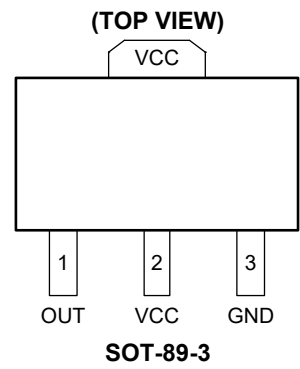
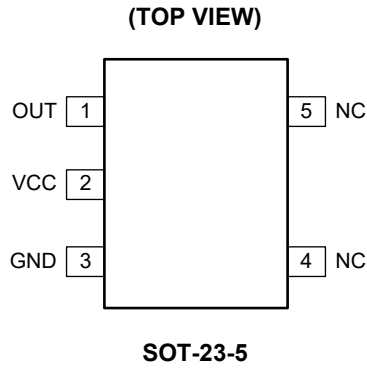
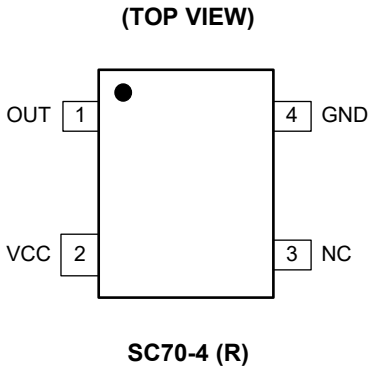
ESD SENSITIVITY CAUTION

This integrated circuit can be damaged if ESD protections are not considered carefully. SGMICRO recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because even small parametric changes could cause the device not to meet the published specifications.

DISCLAIMER

SG Micro Corp reserves the right to make any change in circuit design, or specifications without prior notice.

PIN CONFIGURATIONS



PIN DESCRIPTION

| PIN | | | NAME | FUNCTION |
|------------|----------|----------|------|---------------------|
| SC70-4 (R) | SOT-23-5 | SOT-89-3 | | |
| 1 | 1 | 1 | OUT | Output Pin. |
| 2 | 2 | 2 | VCC | Supply Voltage Pin. |
| 4 | 3 | 3 | GND | Ground Pin. |
| 3 | 4, 5 | – | NC | Not Connected. |

ELECTRICAL CHARACTERISTICS(T_J = -40°C to +125°C, typical values are at T_J = +25°C, unless otherwise noted.)

| PARAMETER | SYMBOL | CONDITIONS | | MIN | TYP | MAX | UNITS |
|--|---|--|--|------|------|------|--------|
| Detection Voltage Accuracy | -V _{DET} | Test Circuit 1 | T _J = +25°C | -1.5 | | 1.5 | % |
| | | | T _J = -40°C to +125°C | -2 | | 2 | |
| Hysteresis Accuracy | V _{HYS} | Test Circuit 1 | T _J = +25°C | 3.5 | 5 | 7 | % |
| | | | T _J = -40°C to +125°C | 3 | 5 | 8 | |
| Operating Voltage | V _{CC} | Test Circuit 1 | | 0.95 | | 10 | V |
| Detection Voltage Temperature Characteristics ⁽¹⁾ | $\frac{\Delta(-V_{DET})}{\Delta T_J \times (-V_{DET})}$ | T _J = -40°C to +125°C, Test Circuit 1 | | | ±30 | ±250 | ppm/°C |
| Current Consumption | I _{SS} | Test Circuit 2 | V _{CC} = 3.5V, -V _{DET} = 1.5V to 2.6V | | 1.0 | 2.1 | μA |
| | | | V _{CC} = 4.5V, -V _{DET} = 2.7V to 3.9V | | 1.1 | 2.2 | |
| | | | V _{CC} = 6.0V, -V _{DET} = 4.0V to 5.6V | | 1.2 | 2.4 | |
| | | | V _{CC} = 7.5V, -V _{DET} = 5.7V to 6.0V | | 1.3 | 2.5 | |
| Output Current | I _{OUT} | Test Circuit 3, V _{OUT} = 0.5V | V _{CC} = 1.2V, -V _{DET} = 1.5V to 6.0V | 0.80 | 3.15 | | mA |
| | | | V _{CC} = 2.4V, -V _{DET} = 2.7V to 6.0V | 4.00 | 7.50 | | |
| Leakage Current | I _{LEAK} | V _{CC} = 10V, V _{OUT} = 10V, Test Circuit 3 | | | | 100 | nA |
| Response Time | t _{PLH} | V _{CC} = (-V _{DET}) × 0.9 to (-V _{DET}) × 1.1, Test Circuit 1 | | | | 240 | μs |

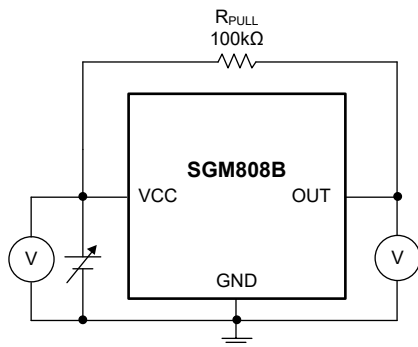
NOTE:

1. The temperature change ratio of the detection voltage can be calculated by:

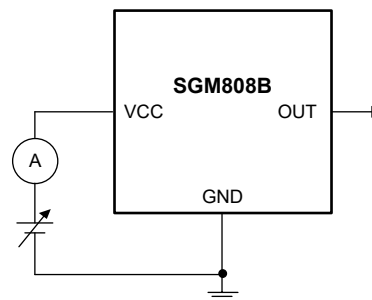
$$\frac{\Delta(-V_{DET})}{\Delta T_J} [\text{mV} / ^\circ\text{C}]^{(1)} = -V_{DET} (\text{TYP}) [\text{V}]^{(2)} \times \frac{\Delta(-V_{DET})}{\Delta T_J \times (-V_{DET})} [\text{ppm} / ^\circ\text{C}]^{(3)} / 1000$$

Where: $\frac{\Delta(-V_{DET})}{\Delta T_J}$ is the temperature change ratio of the detection voltage, -V_{DET} (TYP) is the specified detection voltage, and $\frac{\Delta(-V_{DET})}{\Delta T_J \times (-V_{DET})}$ is the detection voltage temperature coefficient.

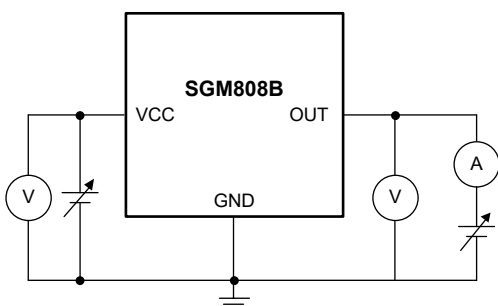
TEST CIRCUITS



Test Circuit 1

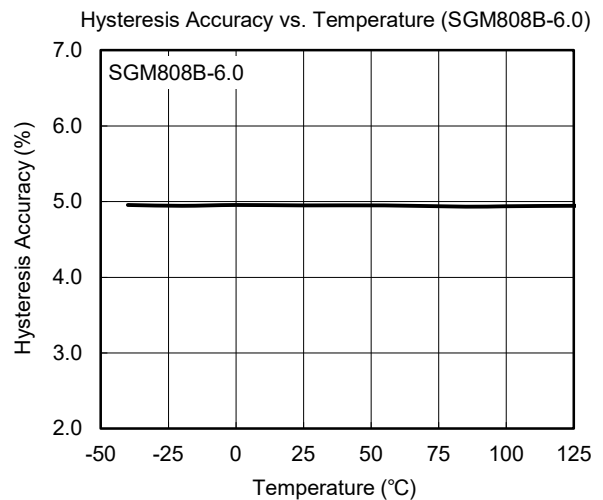
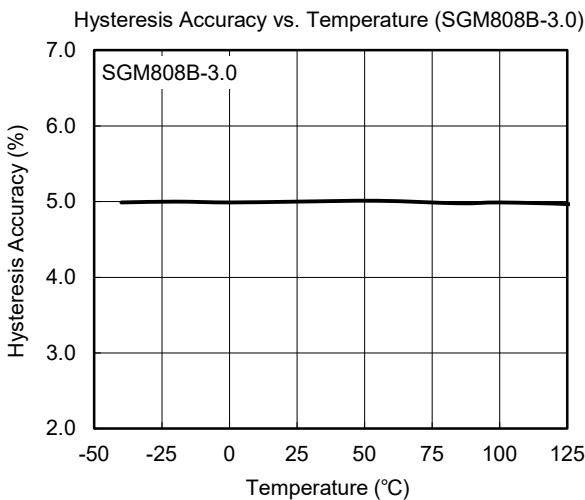
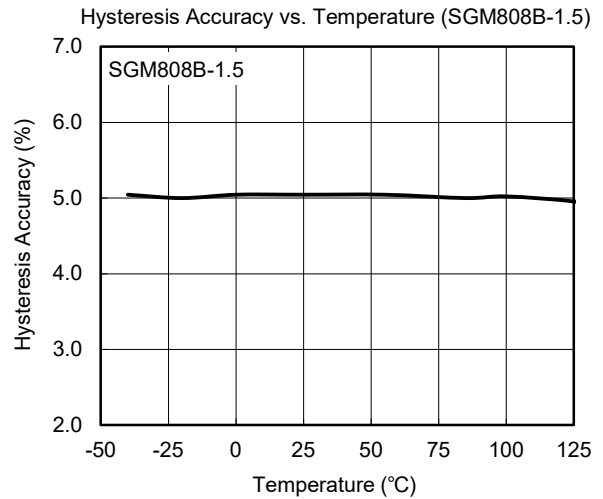
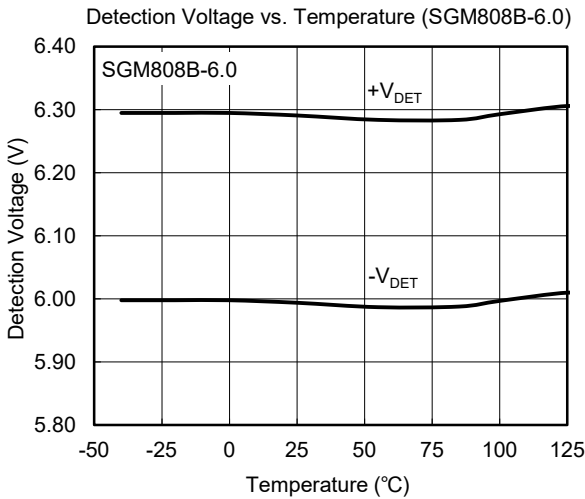
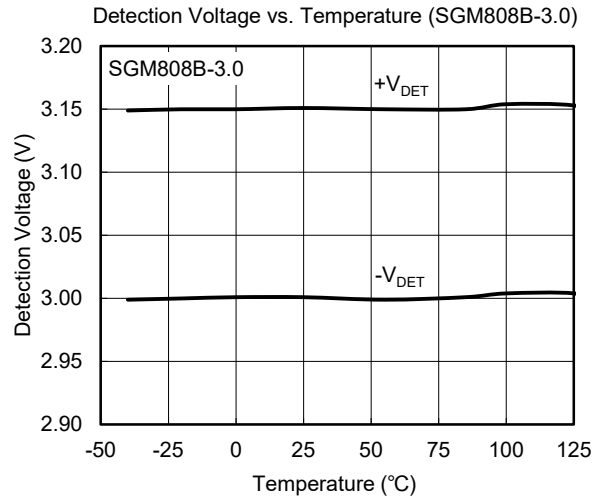
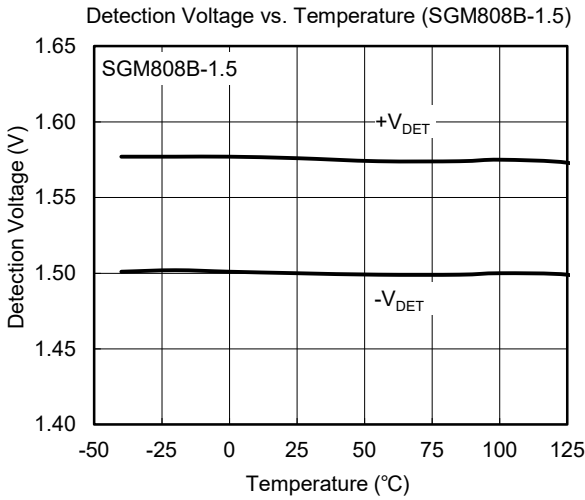


Test Circuit 2

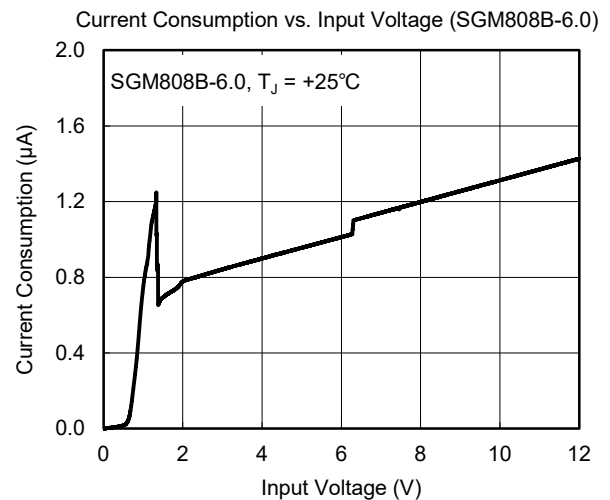
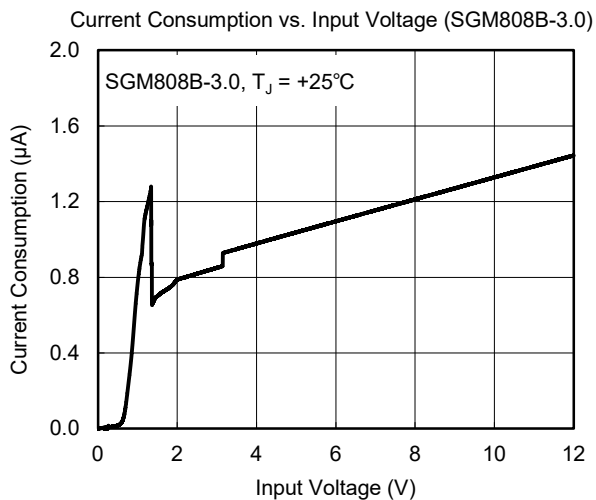
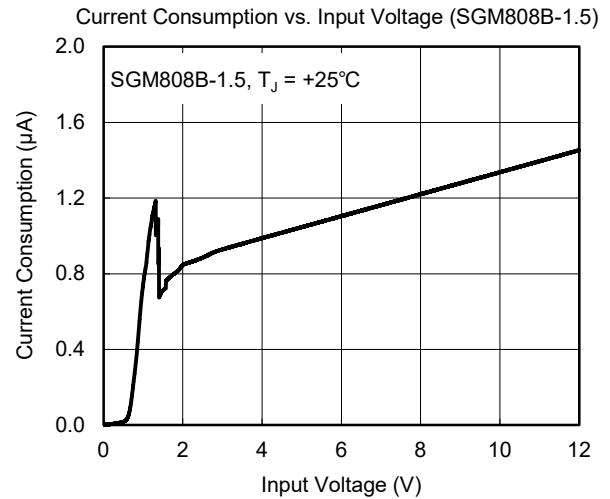
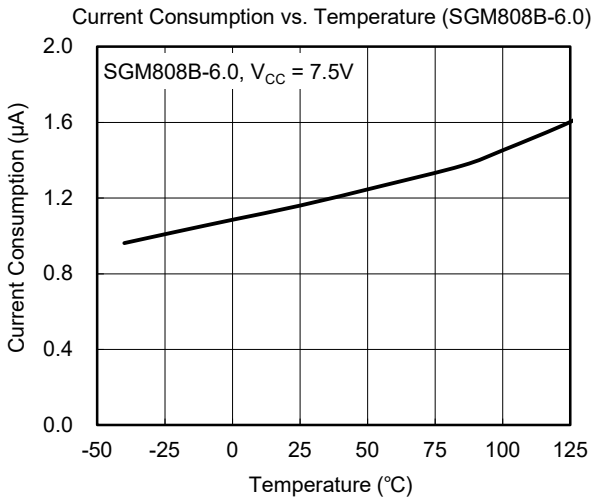
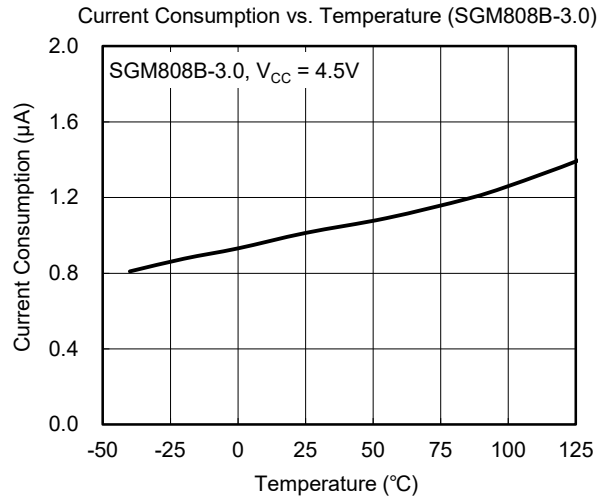
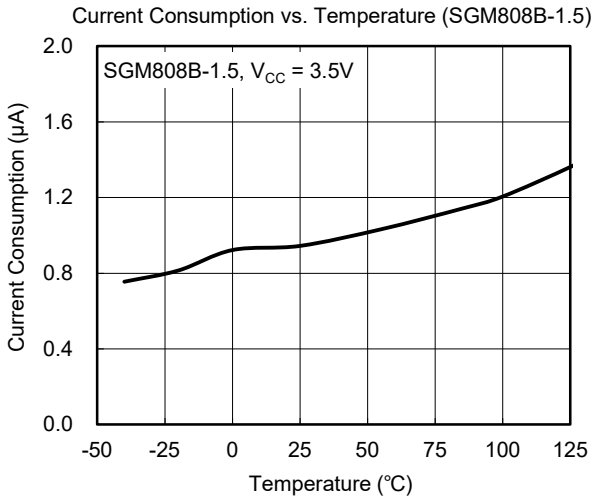


Test Circuit 3

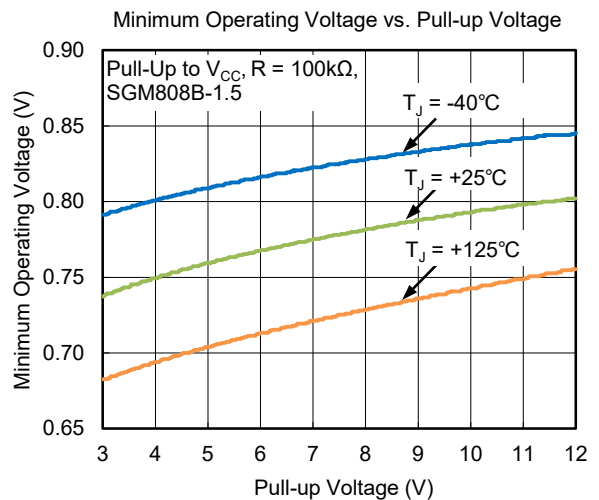
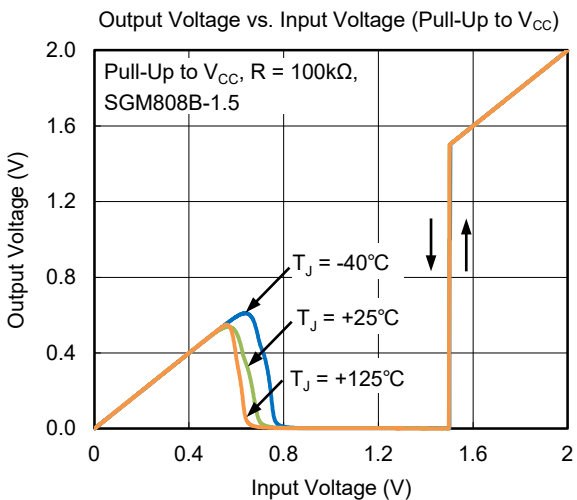
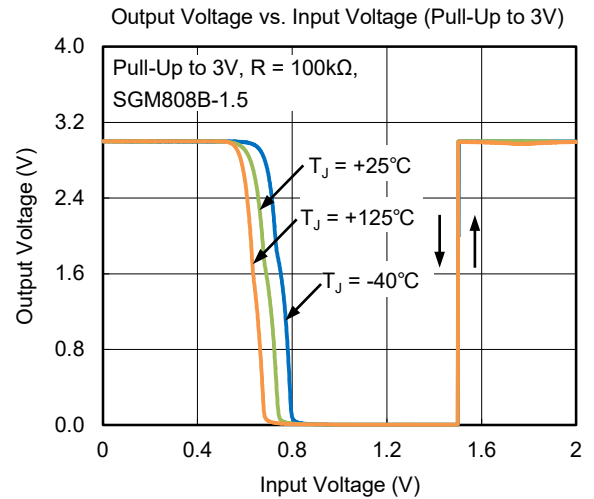
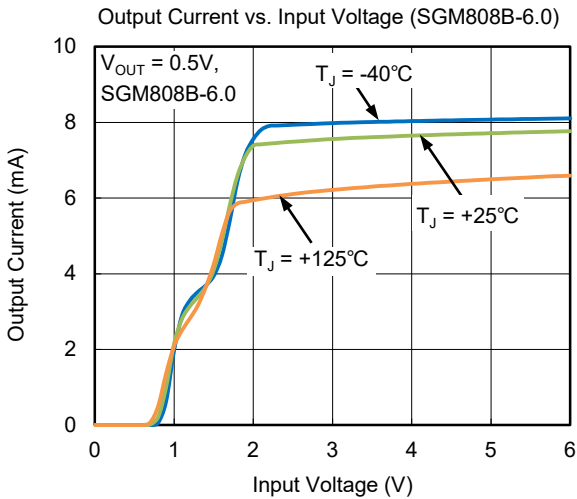
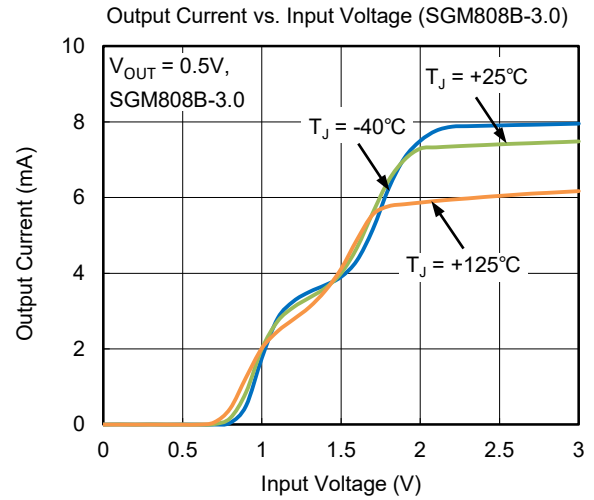
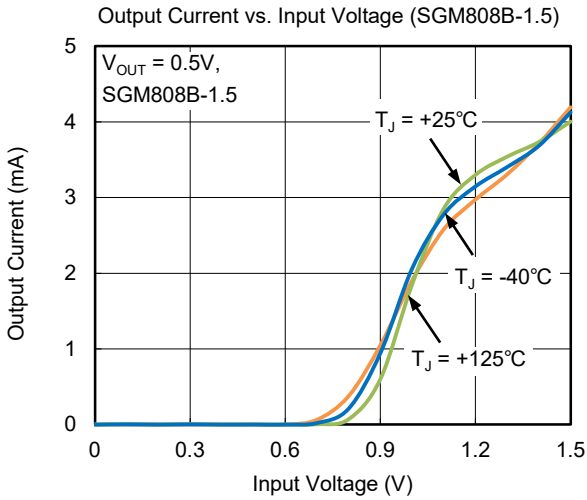
TYPICAL PERFORMANCE CHARACTERISTICS



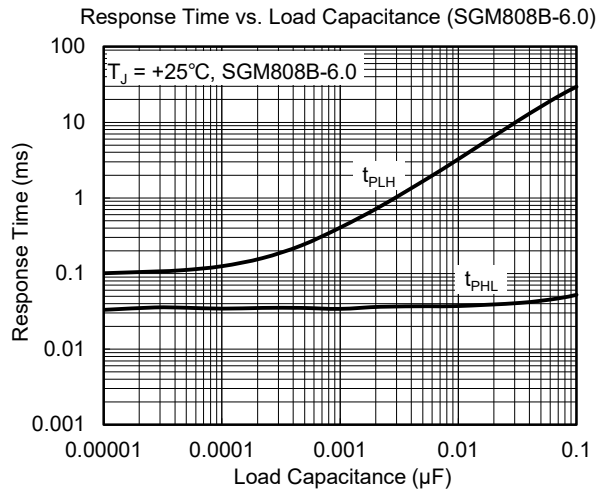
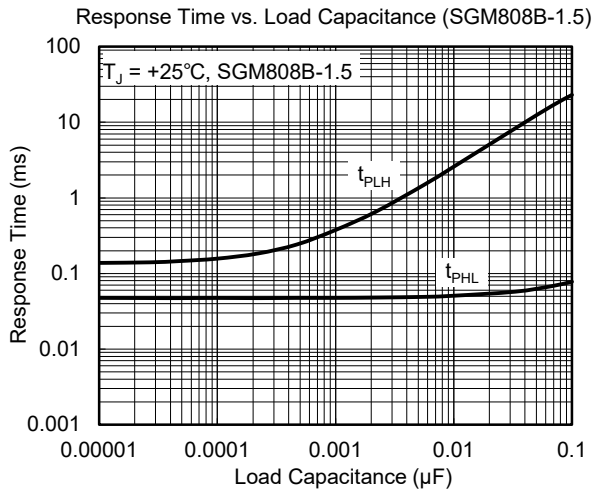
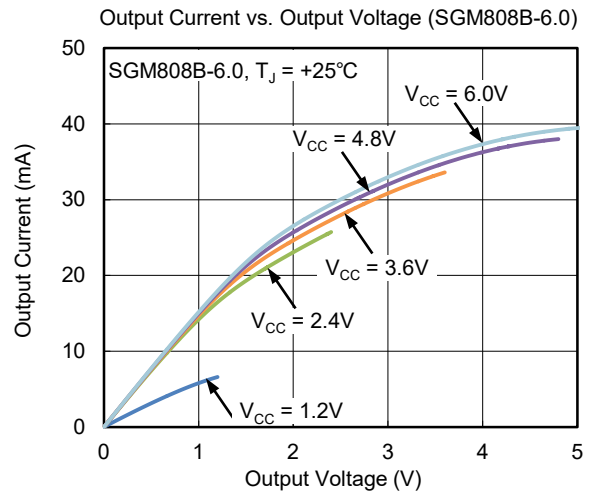
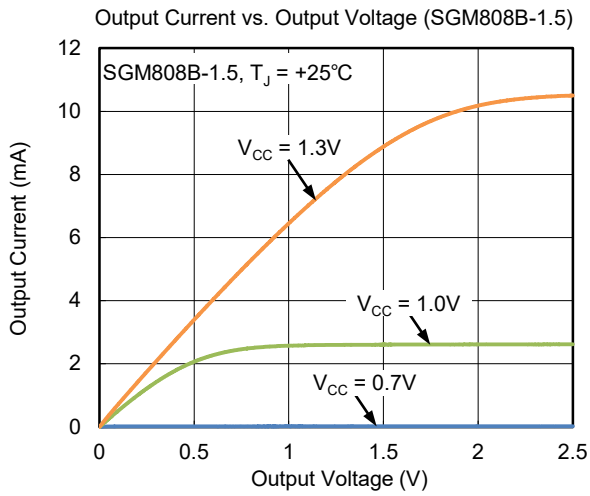
TYPICAL PERFORMANCE CHARACTERISTICS (continued)



TYPICAL PERFORMANCE CHARACTERISTICS (continued)



TYPICAL PERFORMANCE CHARACTERISTICS (continued)



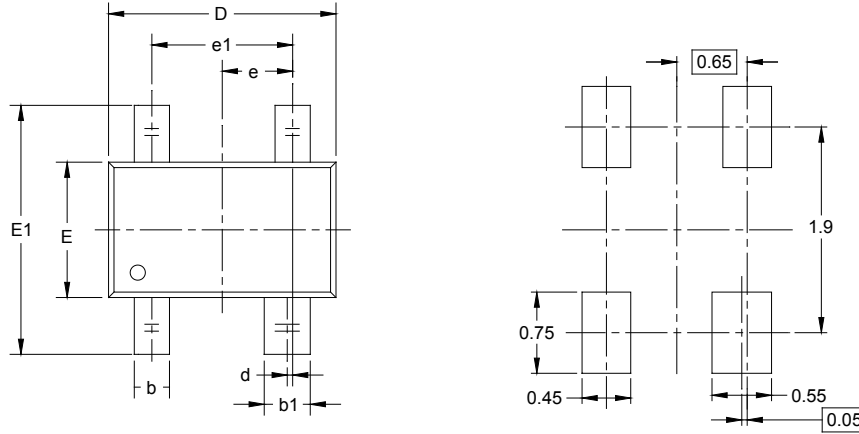
REVISION HISTORY

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

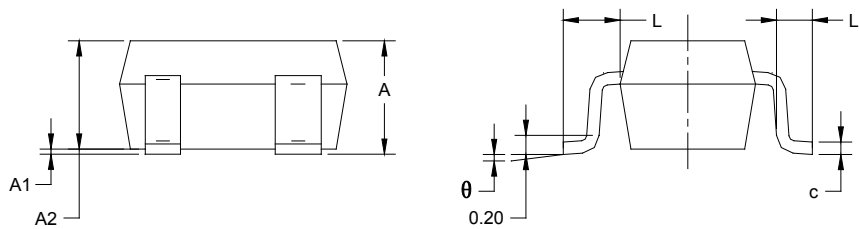
| Changes from Original (JUNE 2021) to REV.A | Page |
|--|-------------|
| Changed from product preview to production data..... | All |

PACKAGE OUTLINE DIMENSIONS

SC70-4 (R)



RECOMMENDED LAND PATTERN (Unit: mm)

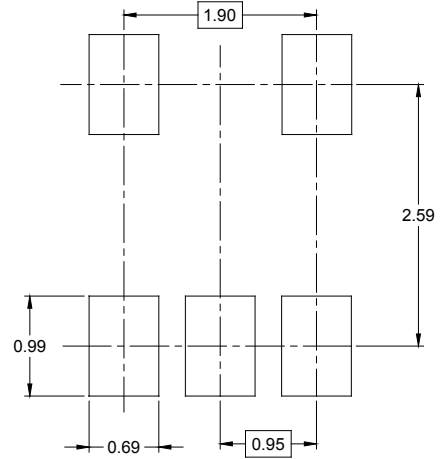
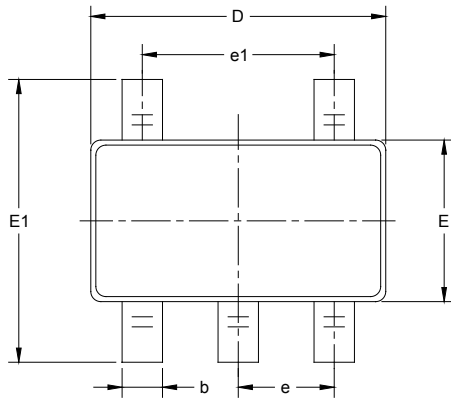


| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|------------------------------|-------|-------------------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.250 | 0.400 | 0.010 | 0.016 |
| b1 | 0.350 | 0.500 | 0.014 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| d | 0.050TYP | | 0.002TYP | |
| D | 2.000 | 2.200 | 0.079 | 0.087 |
| E | 1.150 | 1.350 | 0.045 | 0.053 |
| E1 | 2.150 | 2.450 | 0.085 | 0.096 |
| e | 0.65 TYP | | 0.026 TYP | |
| e1 | 1.200 | 1.400 | 0.047 | 0.055 |
| L | 0.525 REF | | 0.021 REF | |
| L1 | 0.260 | 0.460 | 0.010 | 0.018 |
| θ | 0° | 8° | 0° | 8° |

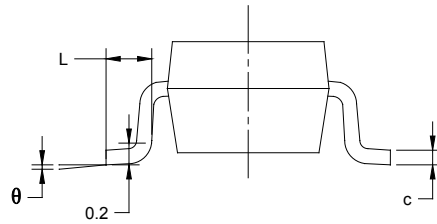
PACKAGE INFORMATION

PACKAGE OUTLINE DIMENSIONS

SOT-23-5



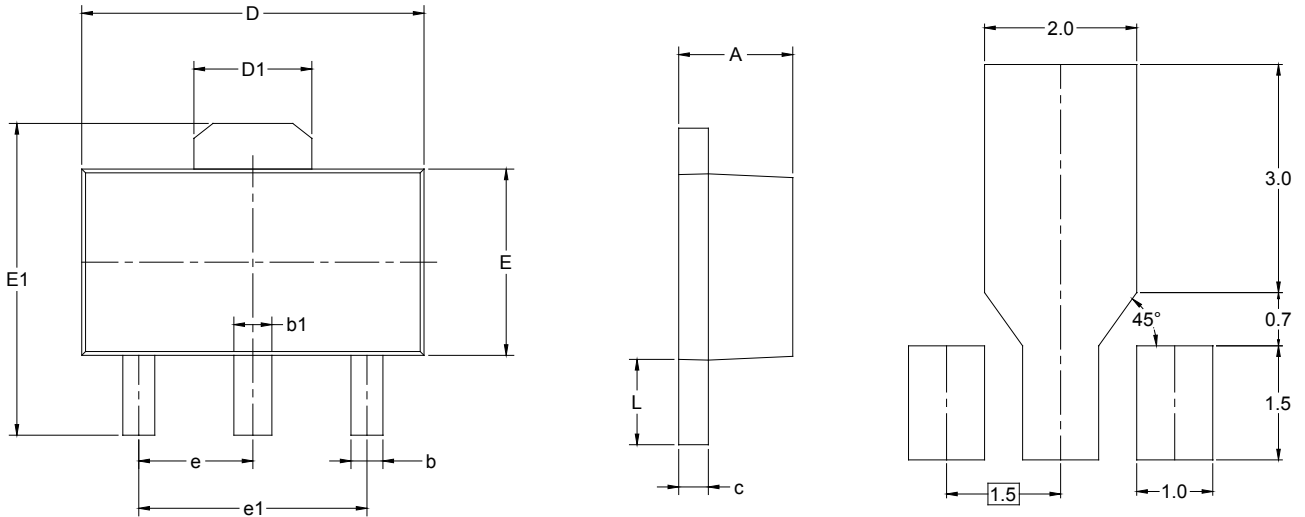
RECOMMENDED LAND PATTERN (Unit: mm)



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|------------------------------|-------|-------------------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.820 | 3.020 | 0.111 | 0.119 |
| E | 1.500 | 1.700 | 0.059 | 0.067 |
| E1 | 2.650 | 2.950 | 0.104 | 0.116 |
| e | 0.950 BSC | | 0.037 BSC | |
| e1 | 1.900 BSC | | 0.075 BSC | |
| L | 0.300 | 0.600 | 0.012 | 0.024 |
| θ | 0° | 8° | 0° | 8° |

PACKAGE OUTLINE DIMENSIONS

SOT-89-3



RECOMMENDED LAND PATTERN (Unit: mm)

| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|------------------------------|-------|-------------------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 1.400 | 1.600 | 0.055 | 0.063 |
| b | 0.320 | 0.520 | 0.013 | 0.020 |
| b1 | 0.400 | 0.580 | 0.016 | 0.023 |
| c | 0.350 | 0.440 | 0.014 | 0.017 |
| D | 4.400 | 4.600 | 0.173 | 0.181 |
| D1 | 1.550 REF | | 0.061 REF | |
| E | 2.300 | 2.600 | 0.091 | 0.102 |
| E1 | 3.940 | 4.250 | 0.155 | 0.167 |
| e | 1.500 TYP | | 0.060 TYP | |
| e1 | 3.000 TYP | | 0.118 TYP | |
| L | 0.900 | 1.200 | 0.035 | 0.047 |

PACKAGE INFORMATION

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF TAPE AND REEL

| Package Type | Reel Diameter | Reel Width W1 (mm) | A0 (mm) | B0 (mm) | K0 (mm) | P0 (mm) | P1 (mm) | P2 (mm) | W (mm) | Pin1 Quadrant |
|--------------|---------------|--------------------|---------|---------|---------|---------|---------|---------|--------|---------------|
| SC70-4 (R) | 7" | 9.5 | 3.20 | 2.80 | 1.30 | 4.0 | 4.0 | 2.0 | 8.0 | Q3 |
| SOT-23-5 | 7" | 9.5 | 3.20 | 3.20 | 1.40 | 4.0 | 4.0 | 2.0 | 8.0 | Q3 |
| SOT-89-3 | 7" | 13.2 | 4.85 | 4.45 | 1.85 | 4.0 | 8.0 | 2.0 | 12.0 | Q3 |

DD0001

PACKAGE INFORMATION

CARTON BOX DIMENSIONS



NOTE: The picture is only for reference. Please make the object as the standard.

KEY PARAMETER LIST OF CARTON BOX

| Reel Type | Length (mm) | Width (mm) | Height (mm) | Pizza/Carton |
|-------------|-------------|------------|-------------|--------------|
| 7" (Option) | 368 | 227 | 224 | 8 |
| 7" | 442 | 410 | 224 | 18 |

DD0002