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, SOT-89-3, SOT-553-5 and UTDFN-1.6×1.6-5L packages.

FEATURES

- **Operating Voltage Range: 0.95V to 10V**
- **High Accuracy Detection: ±1.5% at T_J = +25℃**
- **Low Power Consumption: 1μA (TYP) at V_{CC} = 3.5V**
- **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, SOT-89-3, SOT-553-5 and UTDFN-1.6×1.6-5L 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℃ to +125℃	SGM808B-1.5XC4G/TR	SAGXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-1.5XN5G/TR	SAHXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-1.5XK3G/TR	SAIXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-1.5XKB5G/TR	09X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-1.5XUIR5G/TR	2FA XXXX	Tape and Reel, 3000
SGM808B-1.6	1.6	SC70-4 (R)	-40℃ to +125℃	SGM808B-1.6XC4G/TR	SAJXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-1.6XN5G/TR	SAKXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-1.6XK3G/TR	ORAXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-1.6XKB5G/TR	0AX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-1.6XUIR5G/TR	2W6 XXXX	Tape and Reel, 3000
SGM808B-1.7	1.7	SC70-4 (R)	-40℃ to +125℃	SGM808B-1.7XC4G/TR	SALXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-1.7XN5G/TR	SAMXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-1.7XK3G/TR	SANXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-1.7XKB5G/TR	0BX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-1.7XUIR5G/TR	2W7 XXXX	Tape and Reel, 3000
SGM808B-1.8	1.8	SC70-4 (R)	-40℃ to +125℃	SGM808B-1.8XC4G/TR	SUVXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-1.8XN5G/TR	SAPXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-1.8XK3G/TR	SAQXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-1.8XKB5G/TR	08X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-1.8XUIR5G/TR	2FB XXXX	Tape and Reel, 3000
SGM808B-1.9	1.9	SC70-4 (R)	-40℃ to +125℃	SGM808B-1.9XC4G/TR	SARXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-1.9XN5G/TR	SASXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-1.9XK3G/TR	SATXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-1.9XKB5G/TR	0CX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-1.9XUIR5G/TR	2W8 XXXX	Tape and Reel, 3000
SGM808B-2.0	2.0	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.0XC4G/TR	SAUXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.0XN5G/TR	SAVXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.0XK3G/TR	SAWXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.0XKB5G/TR	.0DX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.0XUIR5G/TR	2W9 XXXX	Tape and Reel, 3000

PACKAGE/ORDERING INFORMATION (continued)

MODEL	DETECTION VOLTAGE (V)	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM808B-2.1	2.1	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.1XC4G/TR	SAXXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.1XN5G/TR	SAYXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.1XK3G/TR	SAZXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.1XKB5G/TR	0EX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.1XUIR5G/TR	2WA XXXX	Tape and Reel, 3000
SGM808B-2.2	2.2	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.2XC4G/TR	SBGXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.2XN5G/TR	SBHXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.2XK3G/TR	SBIXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.2XKB5G/TR	0FX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.2XUIR5G/TR	2WB XXXX	Tape and Reel, 3000
SGM808B-2.3	2.3	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.3XC4G/TR	SBJXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.3XN5G/TR	SBKXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.3XK3G/TR	SBLXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.3XKB5G/TR	0GX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.3XUIR5G/TR	2WC XXXX	Tape and Reel, 3000
SGM808B-2.4	2.4	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.4XC4G/TR	SBMXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.4XN5G/TR	SBNXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.4XK3G/TR	SUWXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.4XKB5G/TR	0HX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.4XUIR5G/TR	2WD XXXX	Tape and Reel, 3000
SGM808B-2.5	2.5	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.5XC4G/TR	SBPXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.5XN5G/TR	SBQXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.5XK3G/TR	SBRXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.5XKB5G/TR	0IX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.5XUIR5G/TR	2WE XXXX	Tape and Reel, 3000
SGM808B-2.6	2.6	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.6XC4G/TR	SBSXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.6XN5G/TR	SBTXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.6XK3G/TR	SBUXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.6XKB5G/TR	0JX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.6XUIR5G/TR	2WF XXXX	Tape and Reel, 3000

PACKAGE/ORDERING INFORMATION (continued)

MODEL	DETECTION VOLTAGE (V)	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM808B-2.7	2.7	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.7XC4G/TR	SBVXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.7XN5G/TR	SBWXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.7XK3G/TR	SBXXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.7XKB5G/TR	0KX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.7XUIR5G/TR	2WG XXXX	Tape and Reel, 3000
SGM808B-2.8	2.8	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.8XC4G/TR	SBYXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.8XN5G/TR	SBZXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.8XK3G/TR	SCGXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.8XKB5G/TR	0LX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.8XUIR5G/TR	2WH XXXX	Tape and Reel, 3000
SGM808B-2.9	2.9	SC70-4 (R)	-40℃ to +125℃	SGM808B-2.9XC4G/TR	SCHXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-2.9XN5G/TR	R5FXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-2.9XK3G/TR	SCIXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-2.9XKB5G/TR	0MX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-2.9XUIR5G/TR	2WI XXXX	Tape and Reel, 3000
SGM808B-3.0	3.0	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.0XC4G/TR	SCJXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.0XN5G/TR	SCKXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.0XK3G/TR	SCLXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.0XKB5G/TR	0NX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.0XUIR5G/TR	2WJ XXXX	Tape and Reel, 3000
SGM808B-3.1	3.1	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.1XC4G/TR	SCMXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.1XN5G/TR	SCNXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.1XK3G/TR	SUXXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.1XKB5G/TR	0PX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.1XUIR5G/TR	2WK XXXX	Tape and Reel, 3000
SGM808B-3.2	3.2	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.2XC4G/TR	SCPXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.2XN5G/TR	SCQXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.2XK3G/TR	SCRXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.2XKB5G/TR	0QX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.2XUIR5G/TR	2WL XXXX	Tape and Reel, 3000

PACKAGE/ORDERING INFORMATION (continued)

MODEL	DETECTION VOLTAGE (V)	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM808B-3.3	3.3	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.3XC4G/TR	SCSXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.3XN5G/TR	SCTXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.3XK3G/TR	SCUXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.3XKB5G/TR	0RX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.3XUIR5G/TR	2WN XXXX	Tape and Reel, 3000
SGM808B-3.4	3.4	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.4XC4G/TR	SCVXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.4XN5G/TR	SCWXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.4XK3G/TR	SCXXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.4XKB5G/TR	0SX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.4XUIR5G/TR	2WO XXXX	Tape and Reel, 3000
SGM808B-3.5	3.5	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.5XC4G/TR	SCYXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.5XN5G/TR	SCZXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.5XK3G/TR	SDGXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.5XKB5G/TR	0TX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.5XUIR5G/TR	2WP XXXX	Tape and Reel, 3000
SGM808B-3.6	3.6	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.6XC4G/TR	SDHXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.6XN5G/TR	SDIXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.6XK3G/TR	SDJXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.6XKB5G/TR	0UX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.6XUIR5G/TR	2WQ XXXX	Tape and Reel, 3000
SGM808B-3.7	3.7	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.7XC4G/TR	SDKXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.7XN5G/TR	SDLXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.7XK3G/TR	SDMXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.7XKB5G/TR	07X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.7XUIR5G/TR	2FC XXXX	Tape and Reel, 3000
SGM808B-3.8	3.8	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.8XC4G/TR	SDNXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.8XN5G/TR	SUYXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.8XK3G/TR	SDPXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.8XKB5G/TR	0VX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.8XUIR5G/TR	2WR XXXX	Tape and Reel, 3000

PACKAGE/ORDERING INFORMATION (continued)

MODEL	DETECTION VOLTAGE (V)	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM808B-3.9	3.9	SC70-4 (R)	-40℃ to +125℃	SGM808B-3.9XC4G/TR	SDQXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-3.9XN5G/TR	SDRXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-3.9XK3G/TR	SDSXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-3.9XKB5G/TR	0WX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-3.9XUIR5G/TR	2WS XXXX	Tape and Reel, 3000
SGM808B-4.0	4.0	SC70-4 (R)	-40℃ to +125℃	SGM808B-4.0XC4G/TR	SDTXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.0XN5G/TR	SDUXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.0XK3G/TR	SDVXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.0XKB5G/TR	0XX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.0XUIR5G/TR	2WT XXXX	Tape and Reel, 3000
SGM808B-4.1	4.1	SC70-4 (R)	-40℃ to +125℃	SGM808B-4.1XC4G/TR	SDWXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.1XN5G/TR	SDXXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.1XK3G/TR	SDYXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.1XKB5G/TR	0YX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.1XUIR5G/TR	2WU XXXX	Tape and Reel, 3000
SGM808B-4.2	4.2	SC70-4 (R)	-40℃ to +125℃	SGM808B-4.2XC4G/TR	SDZXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.2XN5G/TR	SEGXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.2XK3G/TR	SEHXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.2XKB5G/TR	0ZX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.2XUIR5G/TR	2WV XXXX	Tape and Reel, 3000
SGM808B-4.3	4.3	SC70-4 (R)	-40℃ to +125℃	SGM808B-4.3XC4G/TR	SEIXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.3XN5G/TR	SEJXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.3XK3G/TR	SEKXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.3XKB5G/TR	10X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.3XUIR5G/TR	2WX XXXX	Tape and Reel, 3000
SGM808B-4.4	4.4	SC70-4 (R)	-40℃ to +125℃	SGM808B-4.4XC4G/TR	SELXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.4XN5G/TR	SEMXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.4XK3G/TR	SENXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.4XKB5G/TR	11X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.4XUIR5G/TR	2WY XXXX	Tape and Reel, 3000

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℃ to +125℃	SGM808B-4.5XC4G/TR	SUZXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.5XN5G/TR	SEPXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.5XK3G/TR	SEQXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.5XKB5G/TR	12X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.5XUIR5G/TR	2WZ XXXX	Tape and Reel, 3000
SGM808B-4.6	4.6	SC70-4 (R)	-40℃ to +125℃	SGM808B-4.6XC4G/TR	SERXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.6XN5G/TR	SESXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.6XK3G/TR	SETXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.6XKB5G/TR	13X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.6XUIR5G/TR	2X0 XXXX	Tape and Reel, 3000
SGM808B-4.7	4.7	SC70-4 (R)	-40℃ to +125℃	SGM808B-4.7XC4G/TR	SEUXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.7XN5G/TR	SEVXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.7XK3G/TR	SEWXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.7XKB5G/TR	14X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.7XUIR5G/TR	2X1 XXXX	Tape and Reel, 3000
SGM808B-4.8	4.8	SC70-4 (R)	-40℃ to +125℃	SGM808B-4.8XC4G/TR	SEXXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.8XN5G/TR	SEYXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.8XK3G/TR	SEZXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.8XKB5G/TR	15X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.8XUIR5G/TR	2X2 XXXX	Tape and Reel, 3000
SGM808B-4.9	4.9	SC70-4 (R)	-40℃ to +125℃	SGM808B-4.9XC4G/TR	SFGXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-4.9XN5G/TR	SFHXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-4.9XK3G/TR	SFIXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-4.9XKB5G/TR	16X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-4.9XUIR5G/TR	2X3 XXXX	Tape and Reel, 3000
SGM808B-5.0	5.0	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.0XC4G/TR	SFJXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.0XN5G/TR	SFKXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.0XK3G/TR	SFLXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.0XKB5G/TR	06X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.0XUIR5G/TR	2FD XXXX	Tape and Reel, 3000

PACKAGE/ORDERING INFORMATION (continued)

MODEL	DETECTION VOLTAGE (V)	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM808B-5.1	5.1	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.1XC4G/TR	SFMXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.1XN5G/TR	SFNXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.1XK3G/TR	SVGXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.1XKB5G/TR	17X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.1XUIR5G/TR	2X4 XXXX	Tape and Reel, 3000
SGM808B-5.2	5.2	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.2XC4G/TR	SFPXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.2XN5G/TR	SFQXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.2XK3G/TR	SFRXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.2XKB5G/TR	18X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.2XUIR5G/TR	2X5 XXXX	Tape and Reel, 3000
SGM808B-5.3	5.3	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.3XC4G/TR	SFSXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.3XN5G/TR	SFTXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.3XK3G/TR	SFUXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.3XKB5G/TR	19X	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.3XUIR5G/TR	2X6 XXXX	Tape and Reel, 3000
SGM808B-5.4	5.4	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.4XC4G/TR	SFVXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.4XN5G/TR	SFWXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.4XK3G/TR	SFXXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.4XKB5G/TR	1AX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.4XUIR5G/TR	2X7 XXXX	Tape and Reel, 3000
SGM808B-5.5	5.5	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.5XC4G/TR	SFYXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.5XN5G/TR	SFZXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.5XK3G/TR	SGGXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.5XKB5G/TR	1BX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.5XUIR5G/TR	2X8 XXXX	Tape and Reel, 3000
SGM808B-5.6	5.6	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.6XC4G/TR	SGHXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.6XN5G/TR	SGIXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.6XK3G/TR	SGJXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.6XKB5G/TR	1CX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.6XUIR5G/TR	2X9 XXXX	Tape and Reel, 3000

PACKAGE/ORDERING INFORMATION (continued)

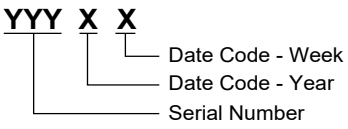
MODEL	DETECTION VOLTAGE (V)	PACKAGE DESCRIPTION	SPECIFIED TEMPERATURE RANGE	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM808B-5.7	5.7	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.7XC4G/TR	SGKXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.7XN5G/TR	SGLXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.7XK3G/TR	SGMXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.7XKB5G/TR	1DX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.7XUIR5G/TR	2XA XXXX	Tape and Reel, 3000
SGM808B-5.8	5.8	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.8XC4G/TR	SGNXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.8XN5G/TR	SVHXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.8XK3G/TR	SGPXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.8XKB5G/TR	1EX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.8XUIR5G/TR	2XB XXXX	Tape and Reel, 3000
SGM808B-5.9	5.9	SC70-4 (R)	-40℃ to +125℃	SGM808B-5.9XC4G/TR	SGQXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-5.9XN5G/TR	SGRXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-5.9XK3G/TR	SGSXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-5.9XKB5G/TR	1FX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-5.9XUIR5G/TR	2XC XXXX	Tape and Reel, 3000
SGM808B-6.0	6.0	SC70-4 (R)	-40℃ to +125℃	SGM808B-6.0XC4G/TR	SGTXX	Tape and Reel, 3000
		SOT-23-5	-40℃ to +125℃	SGM808B-6.0XN5G/TR	SGUXX	Tape and Reel, 3000
		SOT-89-3	-40℃ to +125℃	SGM808B-6.0XK3G/TR	SGVXX	Tape and Reel, 1000
		SOT-553-5	-40℃ to +125℃	SGM808B-6.0XKB5G/TR	1GX	Tape and Reel, 4000
		UTDFN-1.6×1.6-5L	-40℃ to +125℃	SGM808B-6.0XUIR5G/TR	2XD XXXX	Tape and Reel, 3000

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

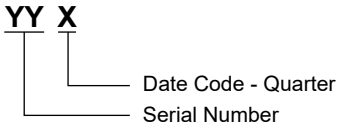
MARKING INFORMATION

NOTE: XX = Date Code.

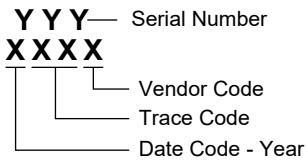
SC70-4 (R), SOT-23-5, SOT-89-3



SOT-553-5



UTDFN-1.6×1.6-5L



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} ..... 489.2℃/W
SC70-4 (R), θ_{JB} ..... 421.7℃/W
SC70-4 (R), θ_{JC} ..... 213.6℃/W
SOT-23-5, θ_{JA} ..... 185.6℃/W
SOT-23-5, θ_{JB} ..... 71.6℃/W
SOT-23-5, θ_{JC} ..... 113.3℃/W
SOT-89-3, θ_{JA} ..... 97.3℃/W
SOT-89-3, θ_{JB} ..... 52℃/W
SOT-89-3, $\theta_{JC(TOP)}$ ..... 124.2℃/W
SOT-89-3, $\theta_{JC(BOT)}$ ..... 51.1℃/W
SOT-553-5, θ_{JA} ..... 192.7℃/W
SOT-553-5, θ_{JB} ..... 82.8℃/W
SOT-553-5, θ_{JC} ..... 131.7℃/W
UTDFN-1.6×1.6-5L, θ_{JA} ..... 220.7℃/W
UTDFN-1.6×1.6-5L, θ_{JB} ..... 84.3℃/W
UTDFN-1.6×1.6-5L, θ_{JC} ..... 126℃/W
Junction Temperature ..... +150℃
Storage Temperature Range ..... -65℃ to +150℃
Lead Temperature (Soldering, 10s) ..... +260℃
ESD Susceptibility (1) (2)
HBM ..... ±4000V
CDM ..... ±1000V

NOTES:

1. For human body model (HBM), all pins comply with ANSI/ESDA/JEDEC JS-001 specifications.

2. For charged device model (CDM), all pins comply with ANSI/ESDA/JEDEC JS-002 specifications.

RECOMMENDED OPERATING CONDITIONS

Operating Junction Temperature Range ..... -40℃ to +125℃

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

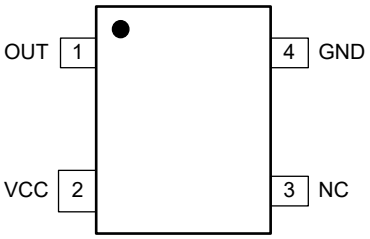
This integrated circuit can be damaged if ESD protections are not considered carefully. SGMICRO recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage. ESD damage can range from subtle performance 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.

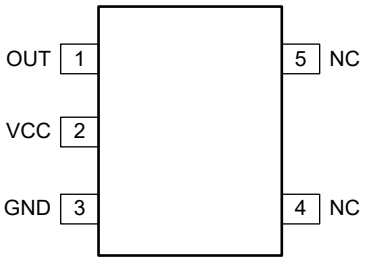
PIN CONFIGURATIONS

(TOP VIEW)



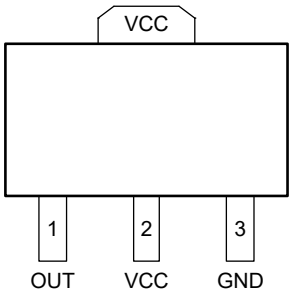
SC70-4 (R)

(TOP VIEW)



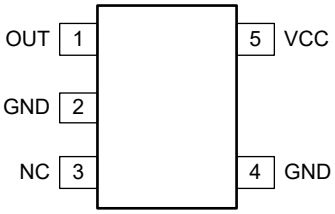
SOT-23-5

(TOP VIEW)



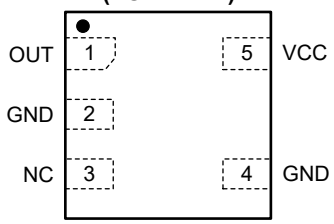
SOT-89-3

(TOP VIEW)



SOT-553-5

(TOP VIEW)



UTDFN-1.6×1.6-5L

PIN DESCRIPTION

PIN					NAME	FUNCTION
SC70-4 (R)	SOT-23-5	SOT-89-3	SOT-553-5	UTDFN-1.6×1.6-5L		
1	1	1	1	1	OUT	Output Pin.
2	2	2	5	5	VCC	Supply Voltage Pin.
4	3	3	2, 4	2, 4	GND	Ground Pin.
3	4, 5	–	3	3	NC	Not Connected.

ELECTRICAL CHARACTERISTICS

(T_J = -40℃ to +125℃, typical values are at T_J = +25℃, unless otherwise noted.)

PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNITS
Detection Voltage Accuracy	$-V_{DET}$	Test Circuit 1	T_J = +25℃	-1.5		1.5	%
			T_J = -40℃ to +125℃	-2		2	
Hysteresis Accuracy	V_{HYS}	Test Circuit 1	T_J = +25℃	3.5	5	7	%
			T_J = -40℃ to +125℃	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℃ to +125℃, Test Circuit 1			±30	±250	ppm/℃
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}	SGM808B-1.5, V_{CC} = $(-V_{DET})$ × 0.95 to $(-V_{DET})$ × 1.1, Test Circuit 1				240	μs
		SGM808B-1.6 ~ 6.0, V_{CC} = $(-V_{DET})$ × 0.9 to $(-V_{DET})$ × 1.1, Test Circuit 1				240	μs

NOTE:

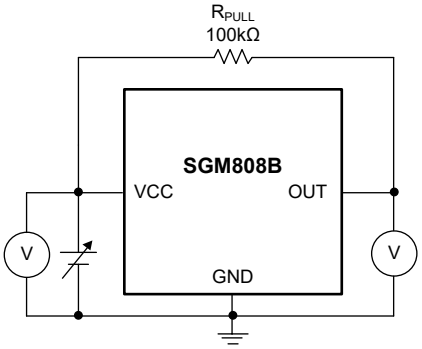
1. The temperature change ratio of the detection voltage can be calculated by:

$$\frac{\Delta(-V_{DET})}{\Delta T_J}[mV/°C] = -V_{DET}(TYP)[V] \times \frac{\Delta(-V_{DET})}{\Delta T_J \times (-V_{DET})}[ppm/°C] / 1000$$

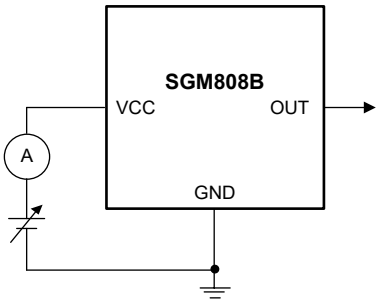
Where:

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

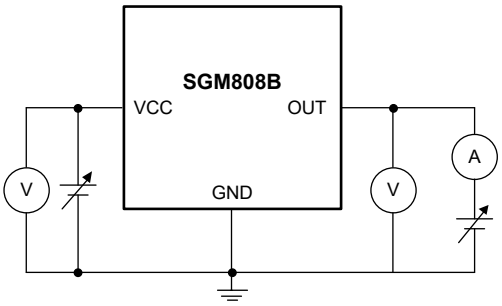
TEST CIRCUITS



Test Circuit 1



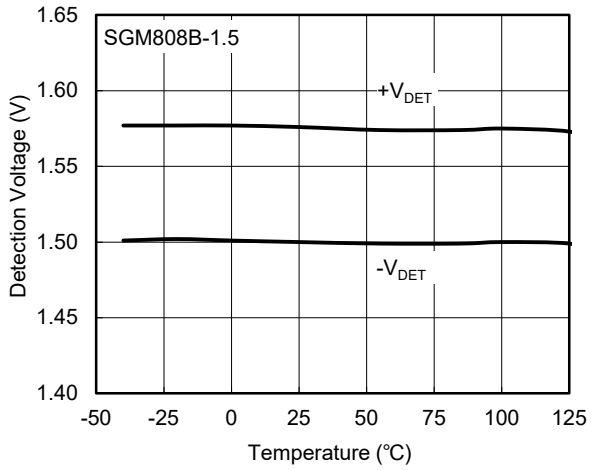
Test Circuit 2



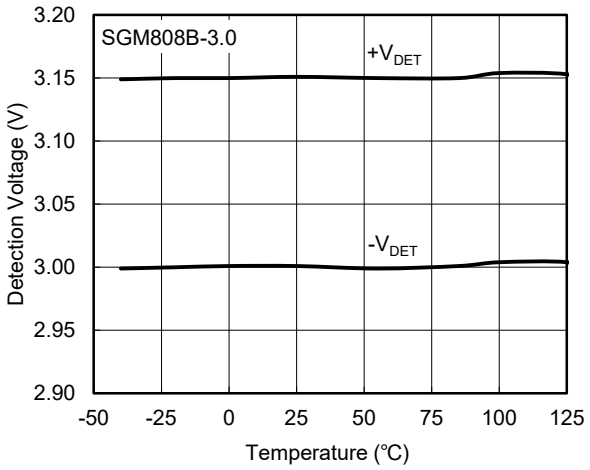
Test Circuit 3

TYPICAL PERFORMANCE CHARACTERISTICS

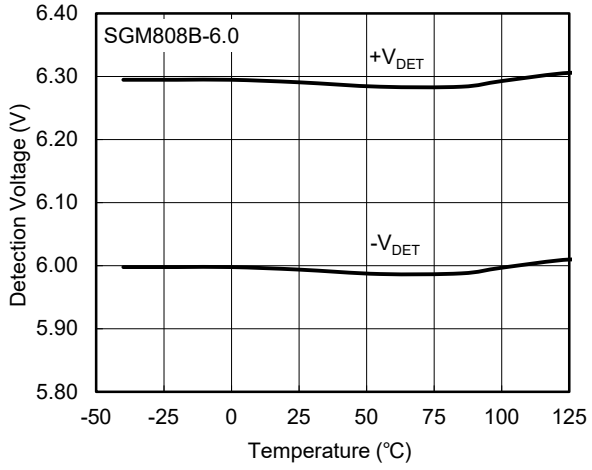
Detection Voltage vs. Temperature (SGM808B-1.5)



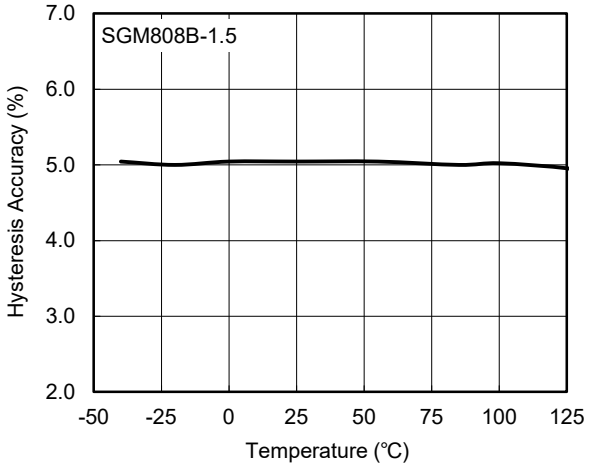
Detection Voltage vs. Temperature (SGM808B-3.0)



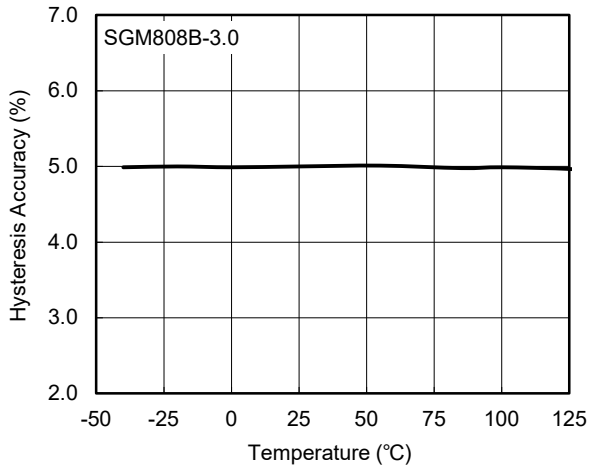
Detection Voltage vs. Temperature (SGM808B-6.0)



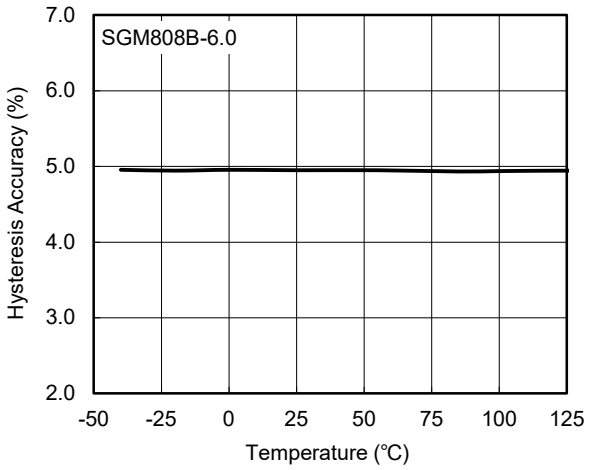
Hysteresis Accuracy vs. Temperature (SGM808B-1.5)



Hysteresis Accuracy vs. Temperature (SGM808B-3.0)

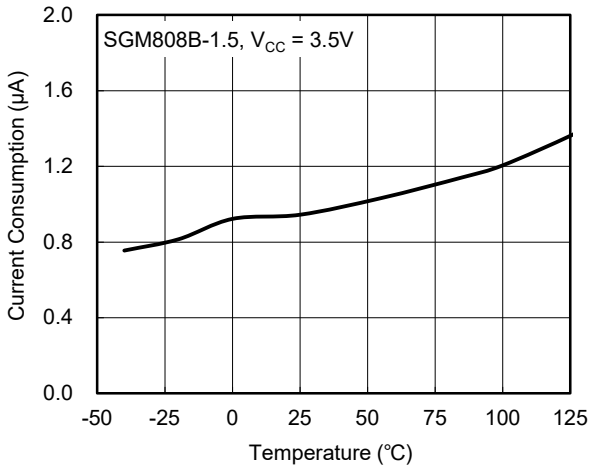


Hysteresis Accuracy vs. Temperature (SGM808B-6.0)

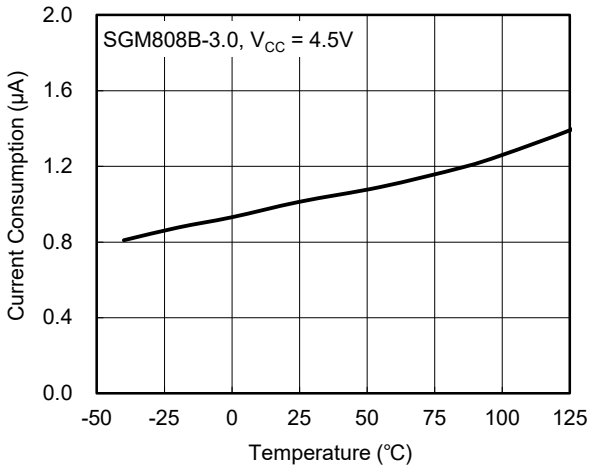


TYPICAL PERFORMANCE CHARACTERISTICS (continued)

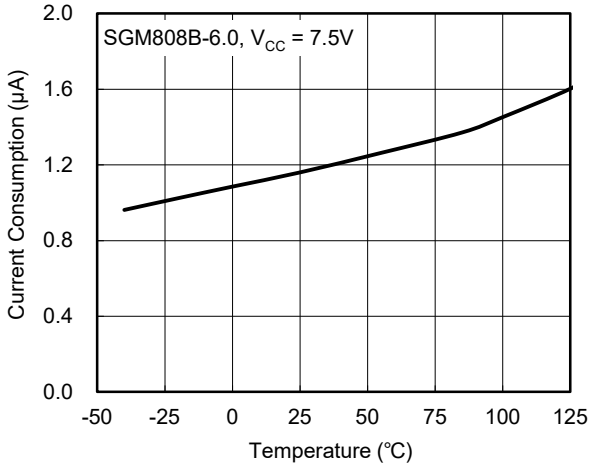
Current Consumption vs. Temperature (SGM808B-1.5)



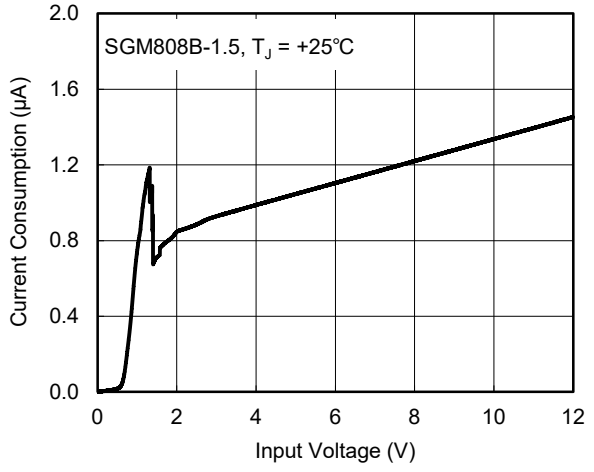
Current Consumption vs. Temperature (SGM808B-3.0)



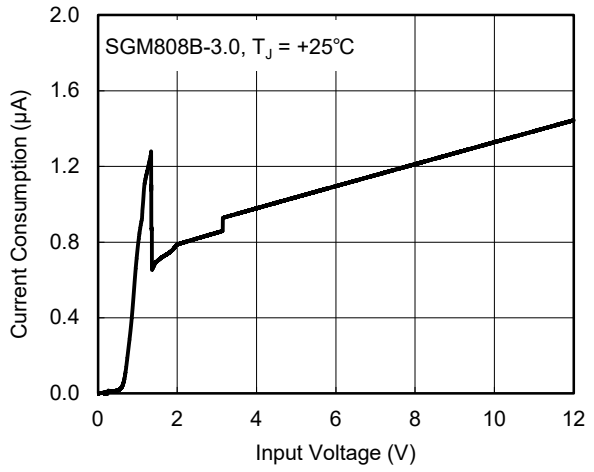
Current Consumption vs. Temperature (SGM808B-6.0)



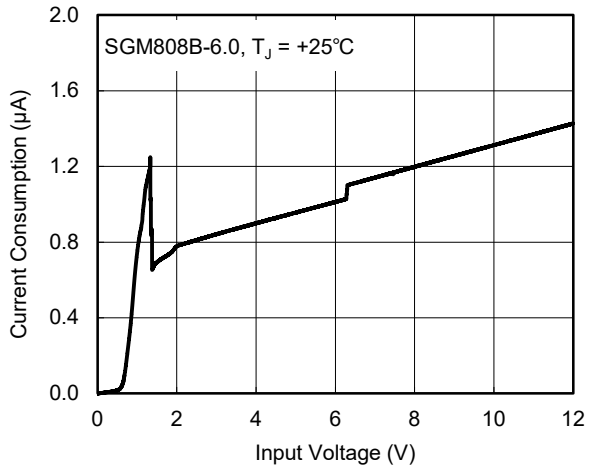
Current Consumption vs. Input Voltage (SGM808B-1.5)



Current Consumption vs. Input Voltage (SGM808B-3.0)

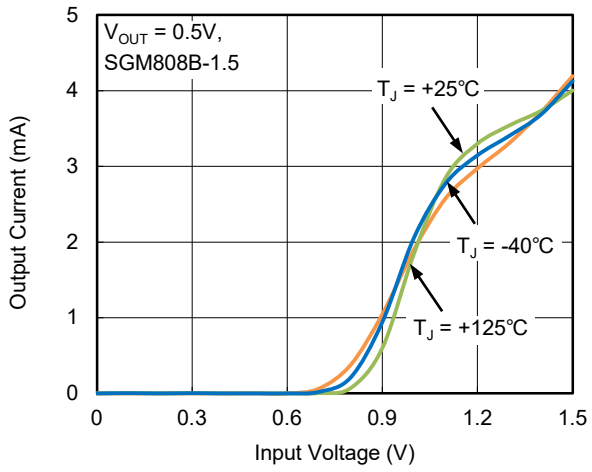


Current Consumption vs. Input Voltage (SGM808B-6.0)

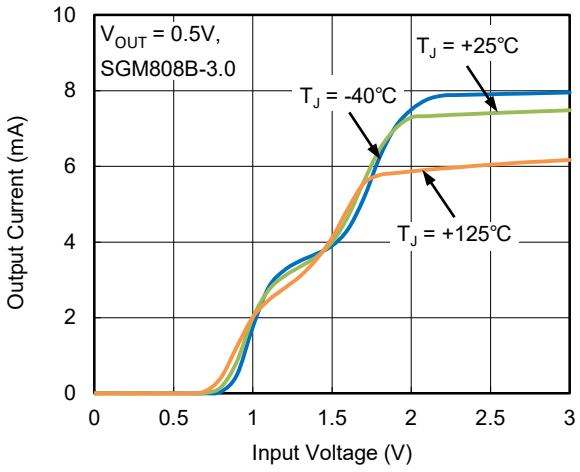


TYPICAL PERFORMANCE CHARACTERISTICS (continued)

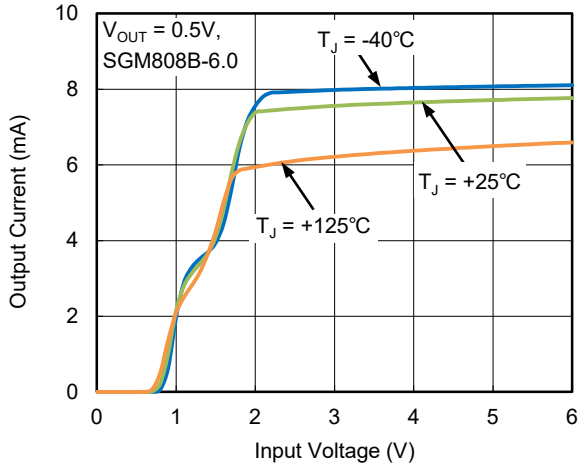
Output Current vs. Input Voltage (SGM808B-1.5)



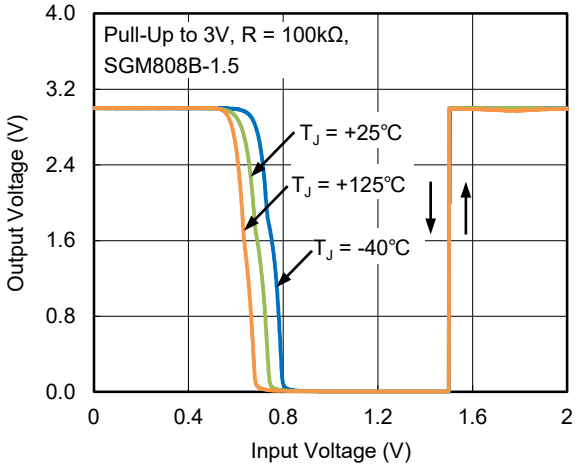
Output Current vs. Input Voltage (SGM808B-3.0)



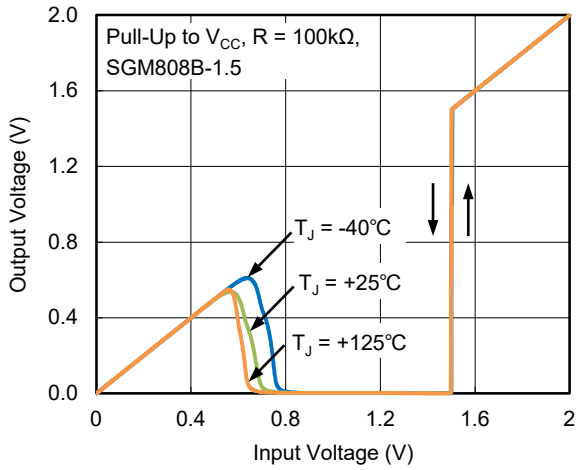
Output Current vs. Input Voltage (SGM808B-6.0)



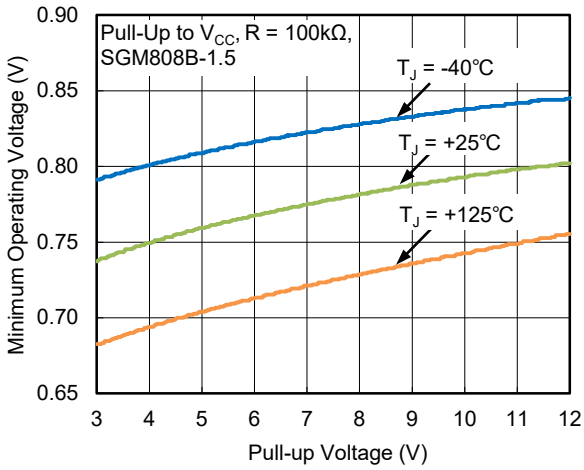
Output Voltage vs. Input Voltage (Pull-Up to 3V)



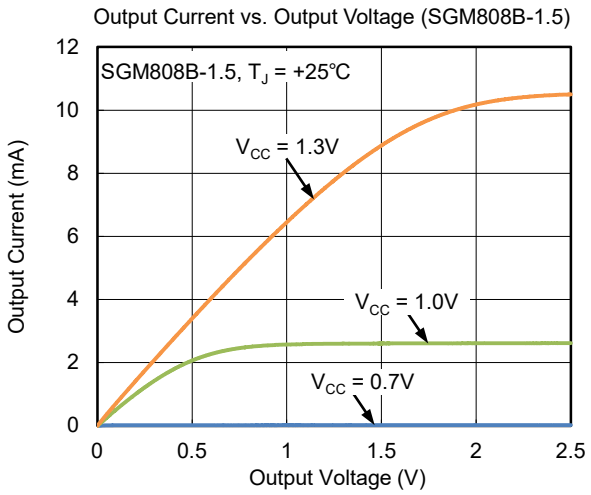
Output Voltage vs. Input Voltage (Pull-Up to V_{CC})

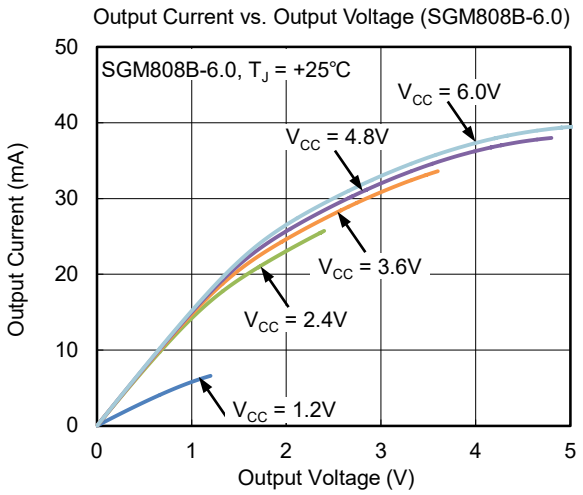


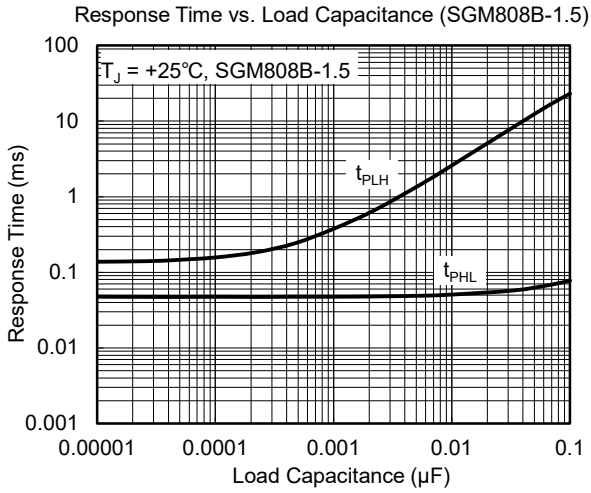
Minimum Operating Voltage vs. Pull-up Voltage

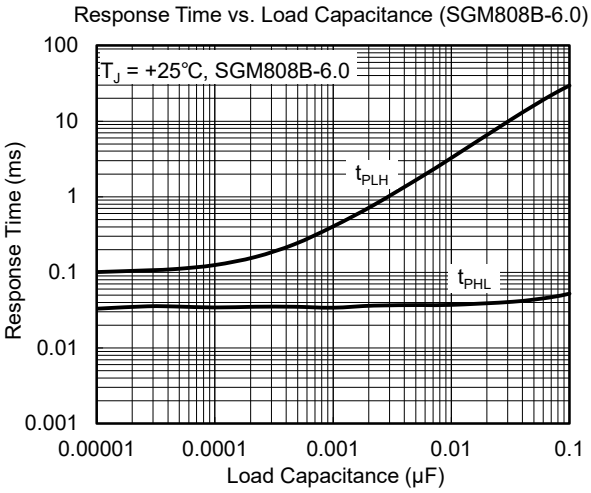


TYPICAL PERFORMANCE CHARACTERISTICS (continued)









FUNCTIONAL BLOCK DIAGRAM

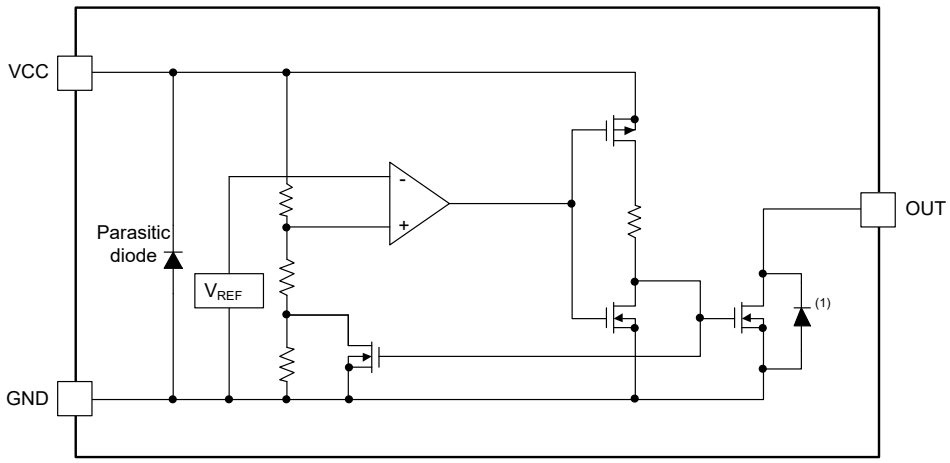
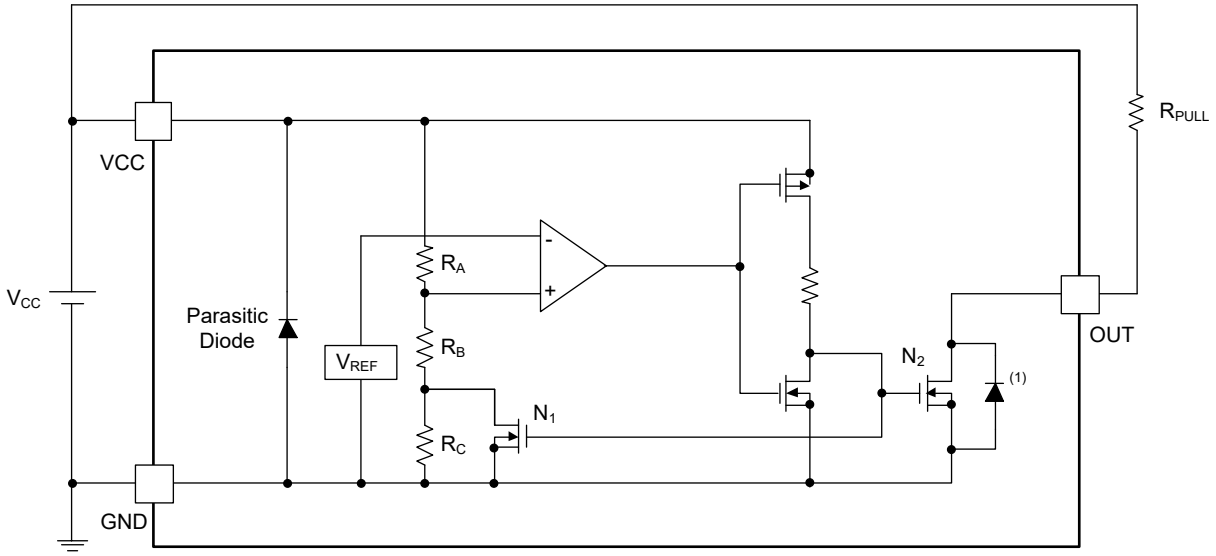


Figure 1. Block Diagram

DETAILED DESCRIPTION



NOTE: 1. Parasitic diode.

Figure 2. Circuit Example of SGM808B

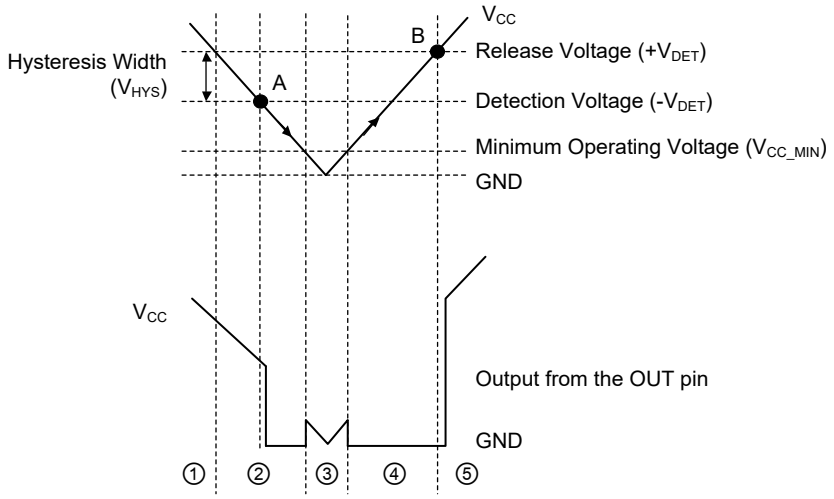


Figure 3. The Timing Chart of Figure 2

A typical circuit example is shown in Figure 2, and the timing chart of Figure 2 is shown in Figure 3.

Basic Operation: Open-Drain Output

① When V_{CC} is above the release level ($+V_{DET}$), N_2 (Figure 2) is off and the output is pulled high to the supply voltage (V_{CC}). With N_1 off, the comparator input voltage becomes:

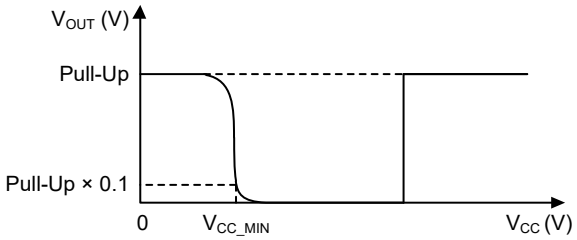
$$\frac{(R_B + R_C) \times V_{CC}}{R_A + R_B + R_C} \quad (1)$$

② When V_{CC} falls within the range from $+V_{DET}$ down to the detection voltage ($-V_{DET}$), the output remains at a logic-high level equal to V_{CC}. Once V_{CC} drops below $-V_{DET}$ (point A in Figure 3), transistor N_2 turns on and the output transitions from high to low. With N_1 in Figure 2 enabled, the comparator input voltage becomes:

$$\frac{R_B \times V_{CC}}{R_A + R_B} \quad (2)$$

DETAILED DESCRIPTION (continued)

③ When V_{CC} falls below V_{CC_MIN}, as illustrated in Figure 4, the output follows V_{CC}.



NOTE: V_{CC_MIN} is defined by the V_{CC} voltage at which V_{OUT} goes below 10% of pull-up voltage when the V_{CC} increases from 0V.

Figure 4. Definition of V_{CC_MIN}

④ When V_{CC} rises above V_{CC_MIN}, the output switches from logic high to logic low. The output remains low while V_{CC} is higher than $-V_{DET}$ and lower than $+V_{DET}$.

⑤ Once V_{CC} exceeds $+V_{DET}$ (point B in Figure 3), transistor N_2 is disabled and the output returns to a logic-high level equal to V_{CC}.

Other Characteristics

Temperature Characteristics of Release Voltage

The temperature change $\frac{\Delta(+V_{DET})}{\Delta T_J}$ of the release voltage is calculated by using the temperature change $\frac{\Delta(-V_{DET})}{\Delta T_J}$ of the detection voltage as follows:

$$\frac{\Delta(+V_{DET})}{\Delta T_J} = \frac{+V_{DET}}{-V_{DET}} \times \frac{\Delta(-V_{DET})}{\Delta T_J} \quad (3)$$

The temperature changes of the release voltage and the detection voltage have the same sign consequently.

Temperature Characteristics of Hysteresis Voltage

The temperature change of the hysteresis voltage is expressed as $\frac{\Delta(+V_{DET})}{\Delta T_J} - \frac{\Delta(-V_{DET})}{\Delta T_J}$ and is calculated as follows:

$$\frac{\Delta(+V_{DET})}{\Delta T_J} - \frac{\Delta(-V_{DET})}{\Delta T_J} = \frac{V_{HYS}}{-V_{DET}} \times \frac{\Delta(-V_{DET})}{\Delta T_J} \quad (4)$$

Standard Circuit

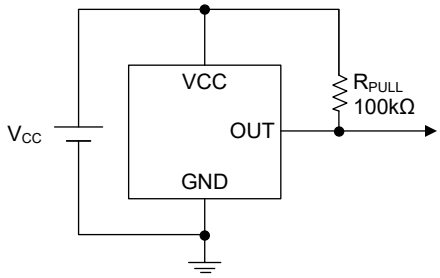


Figure 5. Typical Application Circuit

Caution: The schematic and component values provided are intended as guidelines only and are not sufficient to ensure correct functionality. Verify the design in the intended application and determine the parameter values based on the evaluation results.

Technical Terms

Detection Voltage ($-V_{DET}$), Release Voltage ($+V_{DET}$)

The detection threshold ($-V_{DET}$) is the voltage level at which the output transitions from logic high to logic low. Since $-V_{DET}$ may vary slightly, the spread between $-V_{DET\_MIN}$ and $-V_{DET\_MAX}$ is defined as the detection voltage range.

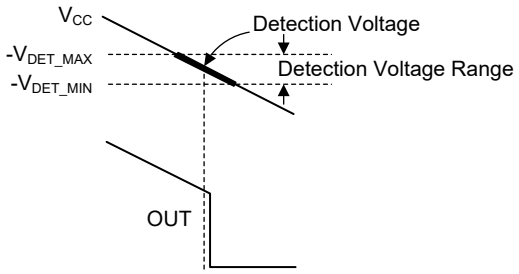


Figure 6. Detection Voltage

For example, the SGM808B-1.5 specifies a detection threshold range of 1.470V to 1.530V. This indicates that the actual ($-V_{DET}$) value may differ from device to device within this range (one unit may trip at 1.470V while another may trip at 1.530V).

DETAILED DESCRIPTION (continued)

The release threshold ($+V_{DET}$) is the voltage level at which the output transitions from logic low to logic high. Since $+V_{DET}$ exhibits part-to-part variation, the spread between $+V_{DET\_MIN}$ and $+V_{DET\_MAX}$ is defined as the release voltage range. This range is derived from $-V_{DET}$ specification of the product and is given by $-V_{DET} \times 1.03 \le +V_{DET} \le -V_{DET} \times 1.08$.

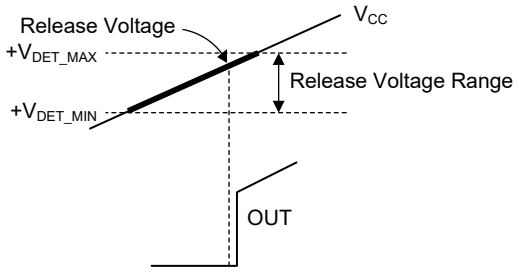


Figure 7. Release Voltage

For example, for the SGM808B-1.5, the release threshold spans from 1.514V to 1.652V, meaning that individual devices may have $+V_{DET}$ values anywhere within this interval (one unit may release at 1.514V while another may release at 1.652V).

Although the detection and release ranges overlap between 1.514V and 1.530V, the release threshold ($+V_{DET}$) remains greater than the detection threshold ($-V_{DET}$) for any given device.

Hysteresis Width (V_{HYS})

Hysteresis (V_{HYS}) is the difference between the detection and release thresholds:

$$V_{HYS} = +V_{DET} - (-V_{DET}) \quad (5)$$

In Figure 3, this corresponds to the voltage at point B minus point A. The hysteresis provides noise immunity and helps avoid unintended output toggling due to input disturbances.

Through-Type Current

Through-Type current is a short-duration current that appears during the detection and release transitions of the voltage detector. For devices with an N-channel open-drain output stage, this current is typically small.

Oscillation

If an input resistor is used as shown in Figure 8 (open-drain, active-low device for example), the through current generates a drop across the resistor.

When the voltage drop (V_{DROP}) reduces the effective input voltage below $-V_{DET}$, the output asserts low. After the through current decays, V_{DROP} vanishes and the output deasserts high. The transition then triggers through current again, repeating the sequence and potentially causing oscillation.

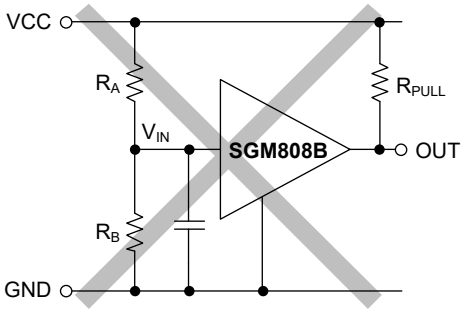


Figure 8. An Example for Bad Implementation of Input Voltage Divider

APPLICATION INFORMATION

Microprocessor Reset Circuits

If the supply voltage of a microprocessor drops below its specified operating range, unintended behavior may occur. After the supply recovers, the microprocessor typically requires re-initialization before resuming normal operation. A reset circuit provides this protection during brief supply interruptions. The reset networks in Figure 9 can be implemented using the SGM808B, which offers a low operating voltage, high detection accuracy, and built-in hysteresis.

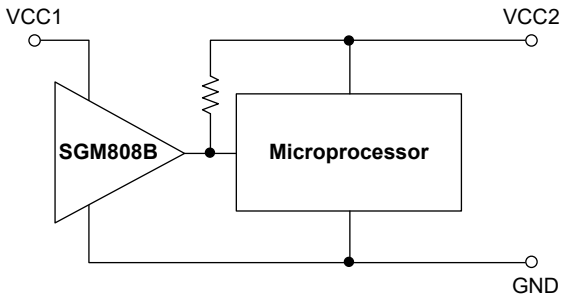
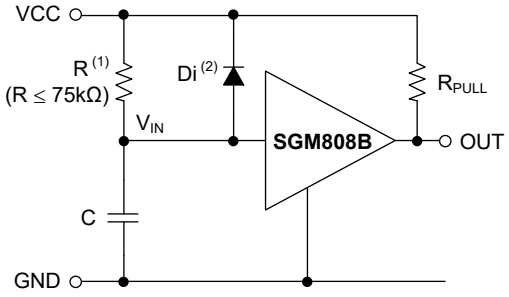


Figure 9. Reset Circuit Example

Caution: The schematic and component values shown are for reference only and do not ensure proper operation. Verify the design in the intended application and determine the final parameter values accordingly.

Power-On Reset Circuit

A power-on reset function can be implemented using the SGM808B with an N-channel open-drain output.



NOTES:

1. R should be 75kΩ or less to prevent oscillation.

2. Diode Di instantaneously discharges the charge stored in the capacitor (C) at the power falling. Di can be removed when the delay of the falling time is not important.

Figure 10. Power-On Reset Circuit

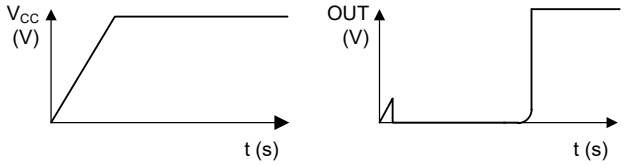


Figure 11. V_{OUT} Response during Normal Power-On

If the supply rises with a very steep slope, as illustrated on the left side of Figure 12, the output may briefly indicate a high level while the device is still operating in the undefined region (the supply voltage is below the minimum operating voltage, where the output state is not guaranteed).

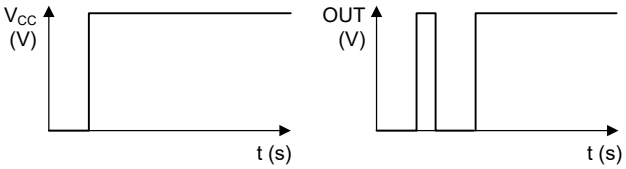


Figure 12. V_{OUT} Response during Fast Power-On

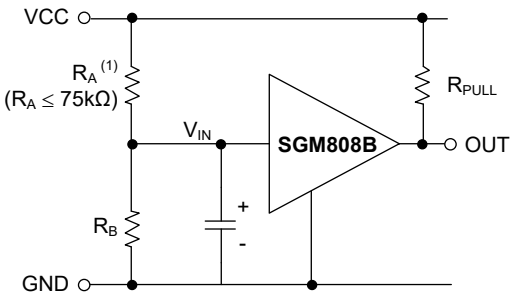
Change of Detection Voltage

As shown in Figure 13 and Figure 14, the detection threshold can be shifted by using a resistor divider or diode network. The hysteresis width is also affected in the divider configuration shown in Figure 13. The detection voltage is:

$$\frac{(R_A + R_B)}{R_B} \times (-V_{DET}) \quad (6)$$

The hysteresis width is:

$$\frac{(R_A + R_B)}{R_B} \times V_{HYS} \quad (7)$$



NOTE: 1. R_A should be 75kΩ or less to prevent oscillation.

Figure 13. Detection Voltage Changed by Resistor Divider

Caution: When R_A and R_B are large, the effective hysteresis width may become larger than predicted by the Equation 6 and Equation 7 due to the through current (a small transient current that can flow in N-channel open-drain devices).

APPLICATION INFORMATION (continued)

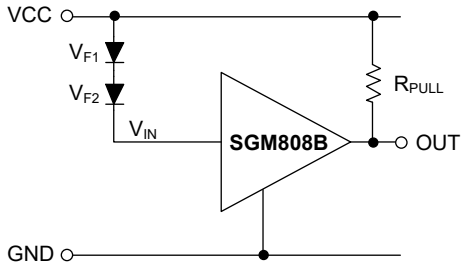


Figure 14. Detection Voltage Changed by Diodes

The detection voltage is:

$$V_{F1} + V_{F2} + (-V_{DET}) \quad (8)$$

Caution: The schematics and component values provided are examples only and do not guarantee correct operation. Verify the circuit under the intended application conditions and select the final parameter values based on test results.

REVISION HISTORY

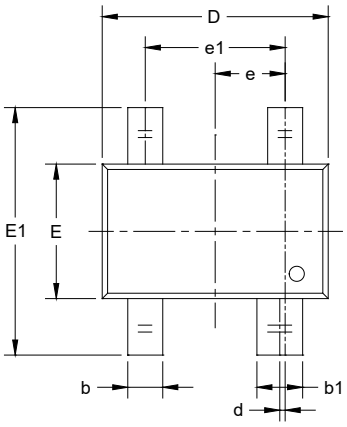
NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

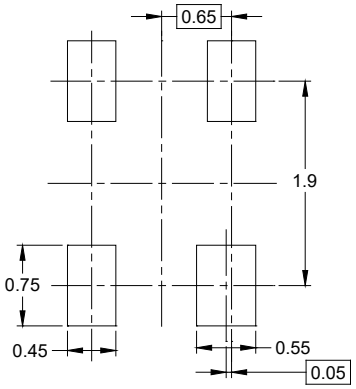
APRIL 2026 – REV.A to REV.A.1	**Page**
Added SOT-553-5 and UTDFN-1.6×1.6-5L package	All
Updated Detailed Description section	18 ~ 20
Updated Application Information section	21, 22

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

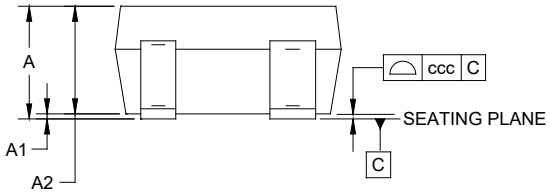
PACKAGE OUTLINE DIMENSIONS

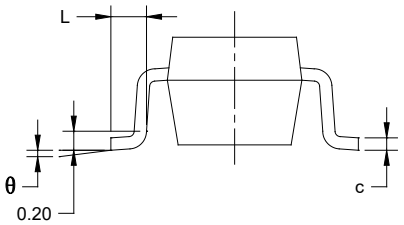
SC70-4 (R)





RECOMMENDED LAND PATTERN (Unit: mm)



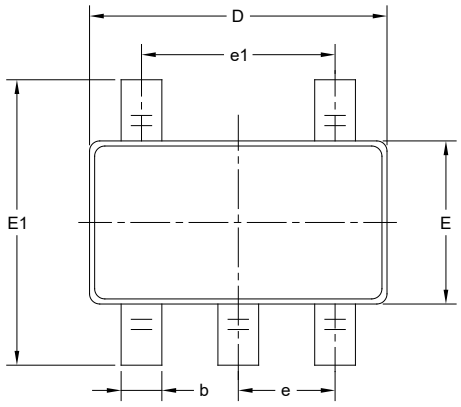


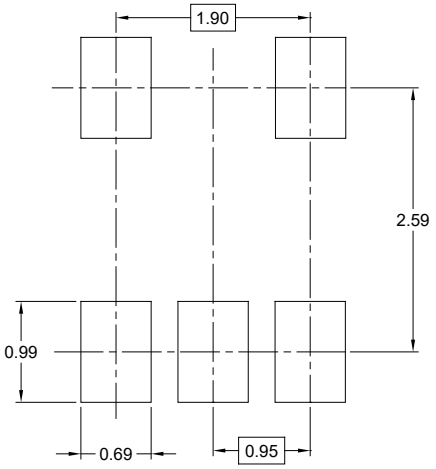
Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	-	-	1.100
A1	0.000	-	0.100
A2	0.900	-	1.000
b	0.250	-	0.400
b1	0.350	-	0.500
c	0.080	-	0.150
d	0.050 TYP		
D	2.000	-	2.200
E	1.150	-	1.350
E1	2.150	-	2.450
e	0.650 BSC		
e1	1.200	-	1.400
L	0.260	-	0.460
θ	0°	-	8°
ccc	0.100		

NOTES:
1. This drawing is subject to change without notice.
2. The dimensions do not include mold flashes, protrusions or gate burrs.

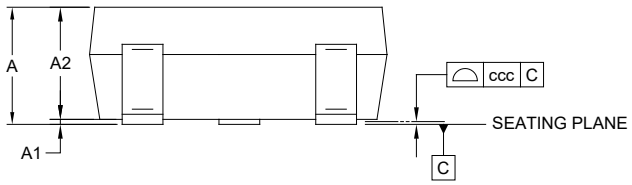
PACKAGE OUTLINE DIMENSIONS

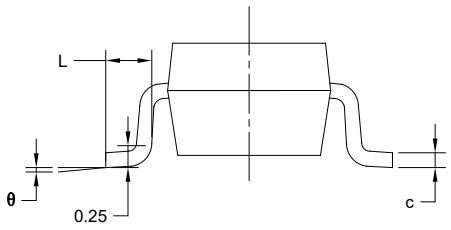
SOT-23-5





RECOMMENDED LAND PATTERN (Unit: mm)



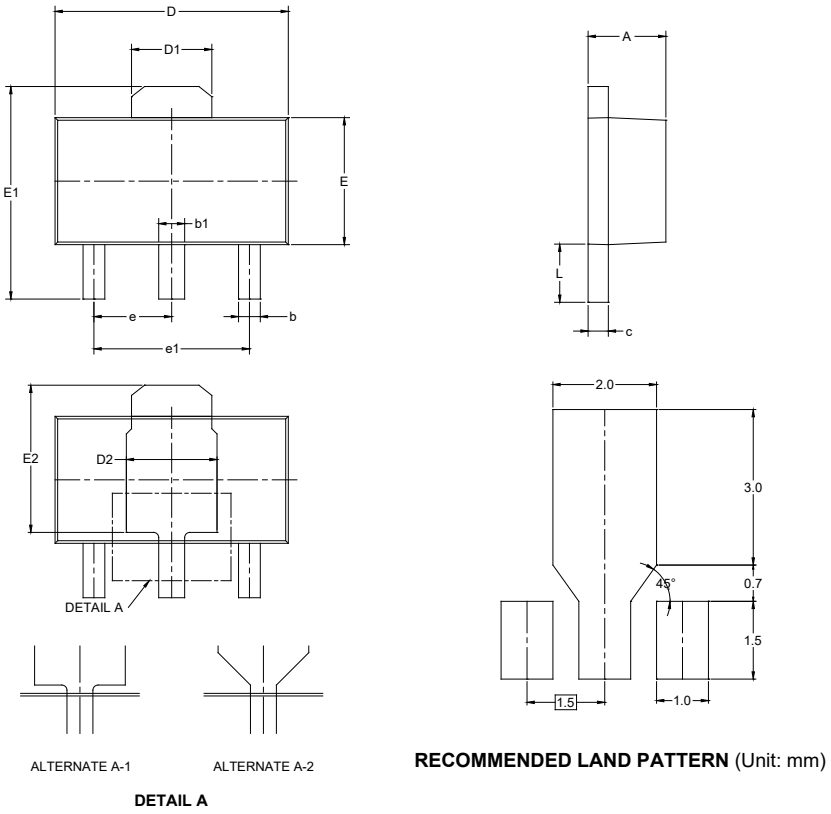


Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	-	-	1.450
A1	0.000	-	0.150
A2	0.900	-	1.300
b	0.300	-	0.500
c	0.080	-	0.220
D	2.750	-	3.050
E	1.450	-	1.750
E1	2.600	-	3.000
e	0.950 BSC		
e1	1.900 BSC		
L	0.300	-	0.600
θ	0°	-	8°
ccc	0.100		

NOTES:
1. This drawing is subject to change without notice.
2. The dimensions do not include mold flashes, protrusions or gate burrs.
3. Reference JEDEC MO-178.

PACKAGE OUTLINE DIMENSIONS

SOT-89-3



DETAIL A

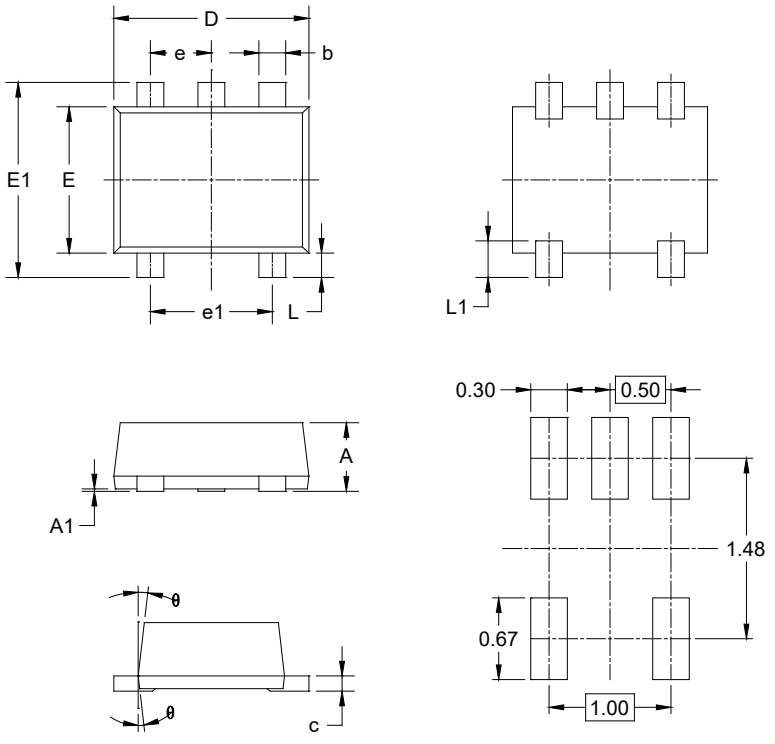
RECOMMENDED LAND PATTERN (Unit: mm)

Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	1.400	-	1.600
b	0.320	-	0.520
b1	0.400	-	0.580
c	0.350	-	0.440
D	4.400	-	4.600
D1	1.550 REF		
D2	1.750 REF		
E	2.300	-	2.600
E1	3.940	-	4.250
E2	2.840 REF		
e	1.500 BSC		
e1	3.000 BSC		
L	0.900	-	1.200

NOTES:
1. This drawing is subject to change without notice.
2. The dimensions do not include mold flashes, protrusions or gate burrs.
3. Reference JEDEC TO-243.

PACKAGE OUTLINE DIMENSIONS

SOT-553-5



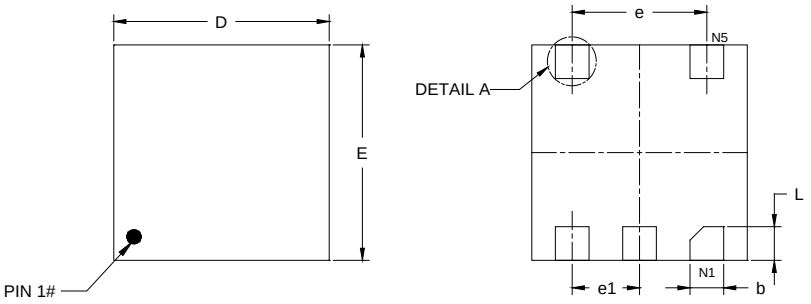
RECOMMENDED LAND PATTERN (Unit: mm)

Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	0.525	-	0.600
A1	0.000	-	0.050
b	0.150	-	0.310
c	0.080	-	0.200
D	1.500	-	1.700
E	1.100	-	1.300
E1	1.500	-	1.700
e	0.500 BSC		
e1	1.000 BSC		
L	0.100	-	0.300
L1	0.200	-	0.460
θ	7° REF		

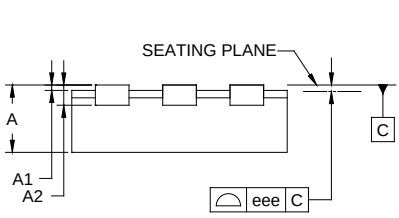
NOTES:
1. This drawing is subject to change without notice.
2. The dimensions do not include mold flashes, protrusions or gate burrs.
3. Reference JEDEC MO-293.

PACKAGE OUTLINE DIMENSIONS

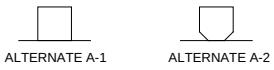
UTDFN-1.6×1.6-5L



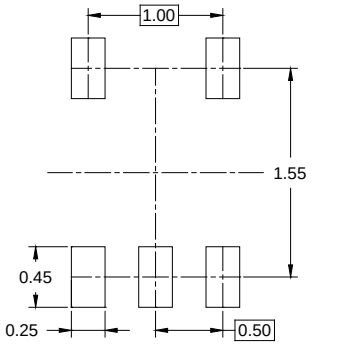
TOP VIEW **BOTTOM VIEW**



SIDE VIEW



DETAIL A
ALTERNATE TERMINAL CONSTRUCTION



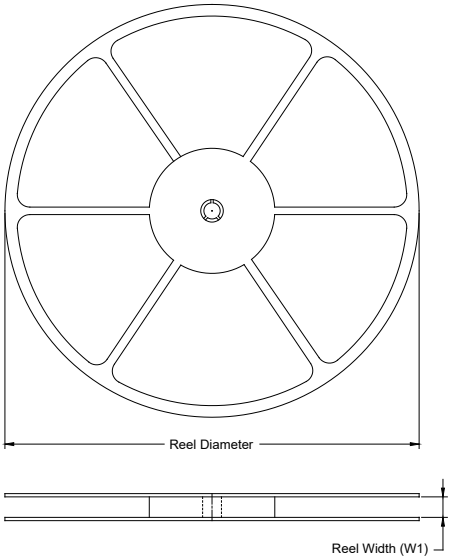
RECOMMENDED LAND PATTERN (Unit: mm)

Symbol	Dimensions In Millimeters		
	MIN	NOM	MAX
A	0.450	-	0.550
A1	0.000	-	0.050
A2	0.150 REF		
b	0.200	-	0.300
D	1.500	-	1.700
E	1.500	-	1.700
e	1.000 BSC		
e1	0.500 BSC		
L	0.150	-	0.350
eee	0.080		

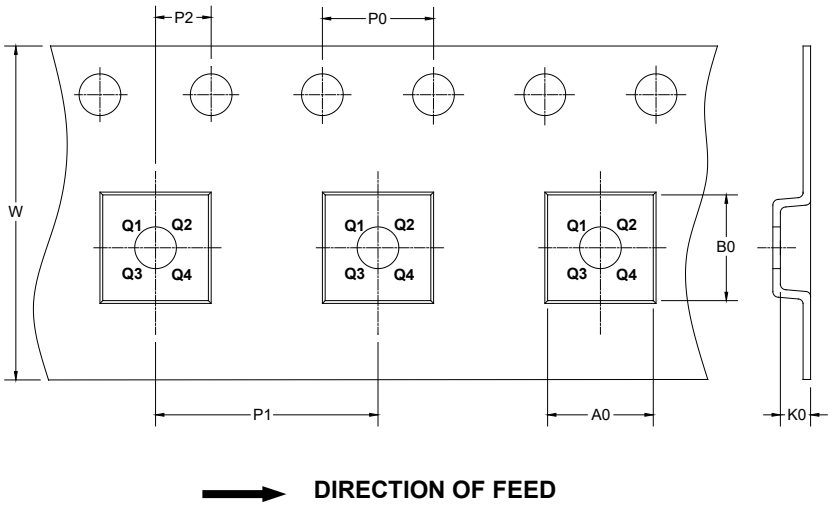
NOTE: This drawing is subject to change without notice.

TAPE AND REEL INFORMATION

REEL DIMENSIONS



TAPE DIMENSIONS



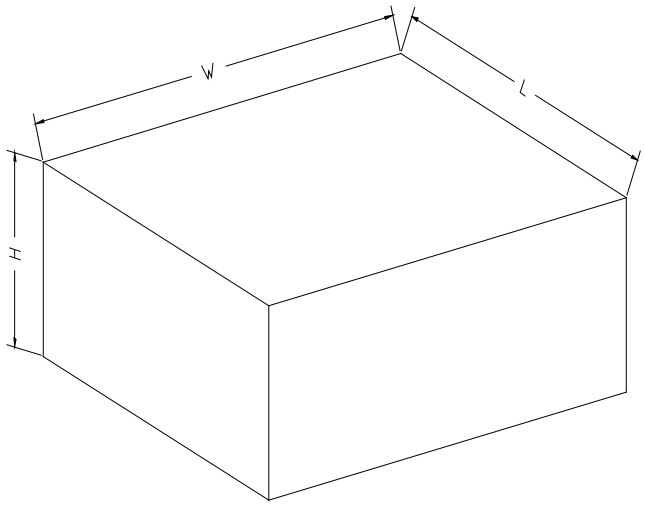
NOTE: The picture is only for reference. Please make the object as the standard.

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
SOT-553-5	7"	9.5	1.78	1.78	0.69	4.0	4.0	2.0	8.0	Q3
UTDFN-1.6×1.6-5L	7"	9.5	1.75	1.75	0.70	4.0	4.0	2.0	8.0	Q2

DD0001

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