

GENERAL DESCRIPTION

The SGM802 can monitor system voltages from 1.6V to 5V. When V_{CC} voltage drops below the reset threshold, the device will send a reset signal. When V_{CC} voltage rises to the reset threshold, the reset output remains high within a user-adjustable reset timeout period set by an external capacitor. The SGM802 also features an excellent transient immunity to ignore fast V_{CC} transients.

The SGM802 is available in Green SC70-4 (R) and SOT-143 packages. It operates over an ambient temperature range of -40°C to $+85^{\circ}\text{C}$.

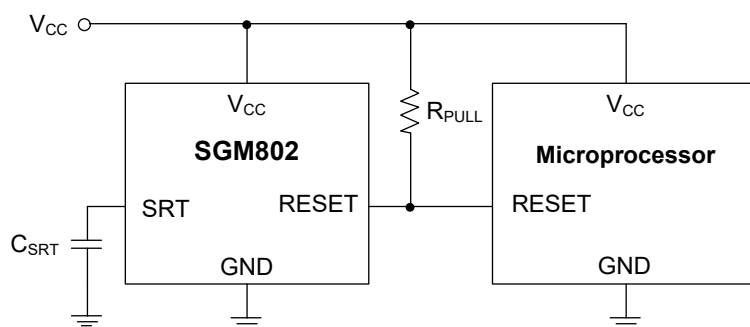
FEATURES

- **Detection Voltages Range: 1.6V to 5V**
- **Low Quiescent Current: 3 μ A (TYP)**
- **Adjustable Reset Timeout Period: 3ms to 5.75ms**
- **Guaranteed RESET Valid to $V_{CC} = 1\text{V}$**
- **Push-Pull RESET Output**
- **-40°C to $+85^{\circ}\text{C}$ Operating Temperature Range**
- **Available in Green SC70-4 (R) and SOT-143 Packages**

APPLICATIONS

- Computers
- Battery-Powered Applications
- Portable Equipment
- Controllers
- Intelligent Instruments
- Critical μ P Power Monitoring

TYPICAL APPLICATION



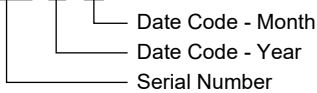
PACKAGE/ORDERING INFORMATION

MODEL	PACKAGE DESCRIPTION	RESET THRESHOLD (V)	ORDERING NUMBER	PACKAGE MARKING	PACKING OPTION
SGM802	SOT-143	1.63	SGM802-1.63YKA4G/TR	S78XX	Tape and Reel, 3000
		2.32	SGM802-2.32YKA4G/TR	S79XX	Tape and Reel, 3000
		2.63	SGM802-2.63YKA4G/TR	S7AXX	Tape and Reel, 3000
		2.93	SGM802-2.93YKA4G/TR	S7BXX	Tape and Reel, 3000
	SC70-4 (R)	1.63	SGM802-1.63YC4G/TR	S7DXX	Tape and Reel, 3000
		2.32	SGM802-2.32YC4G/TR	S7EXX	Tape and Reel, 3000
		2.63	SGM802-2.63YC4G/TR	S7FXX	Tape and Reel, 3000
		2.93	SGM802-2.93YC4G/TR	S80XX	Tape and Reel, 3000

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

All Voltages Referenced to GND

V_{CC}	-0.3V to 6V
SRT, RESET (Push-Pull).....	-0.3V to ($V_{CC} + 0.3V$)
Input Current (All Pins)	20mA
Output Current (RESET).....	20mA
Junction Temperature.....	+150°C
Storage Temperature Range	-65°C to +150°C
Lead Temperature (Soldering, 10s).....	+260°C
ESD Susceptibility	
HBM.....	3000V
MM.....	300V

RECOMMENDED OPERATING CONDITIONS

Operating Temperature Range	-40°C to +85°C
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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.

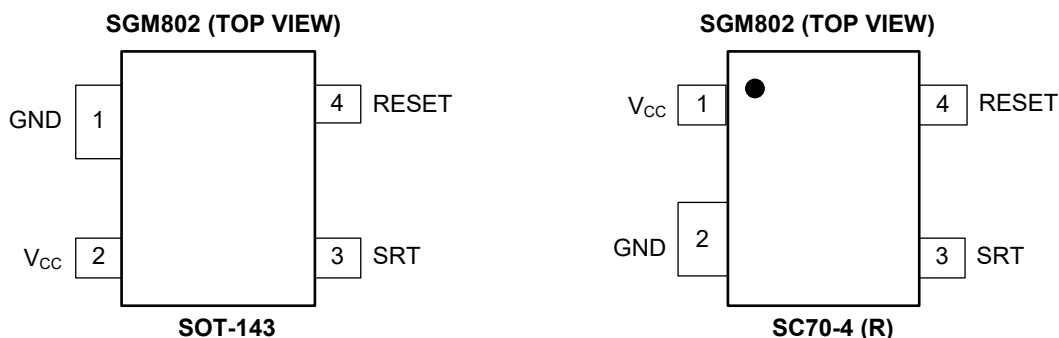
ESD SENSITIVITY CAUTION

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

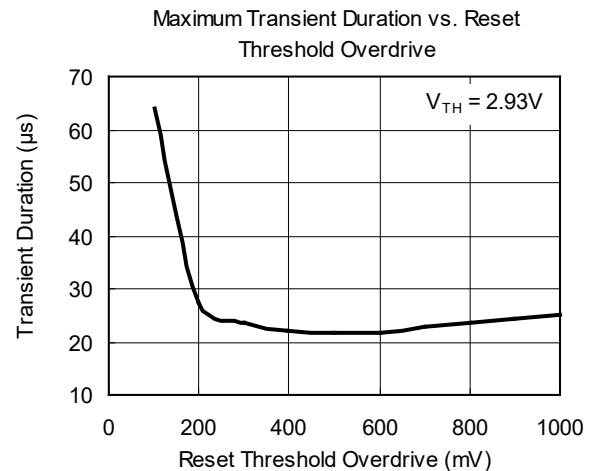
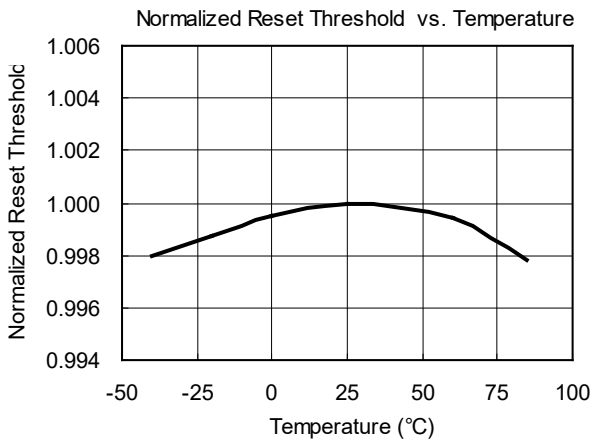
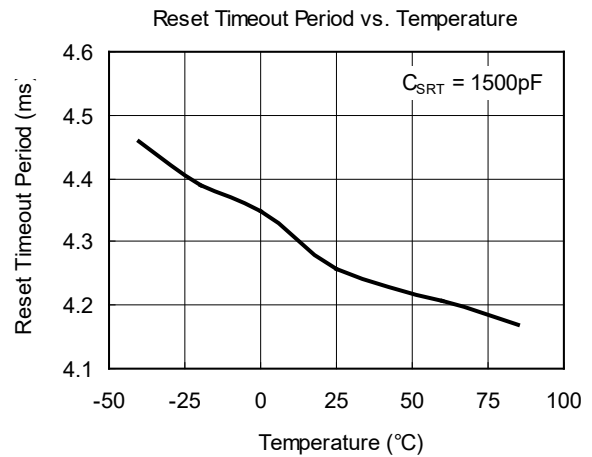
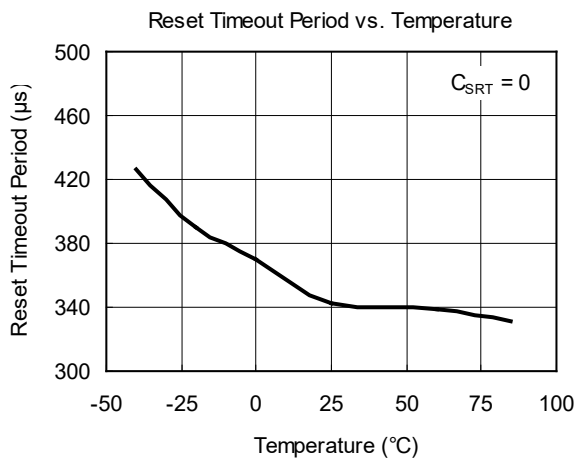
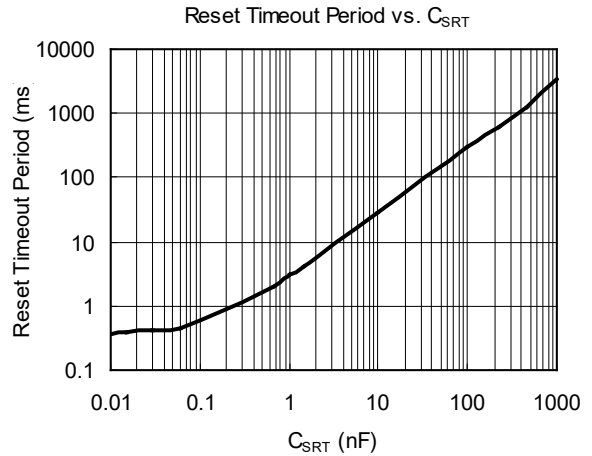
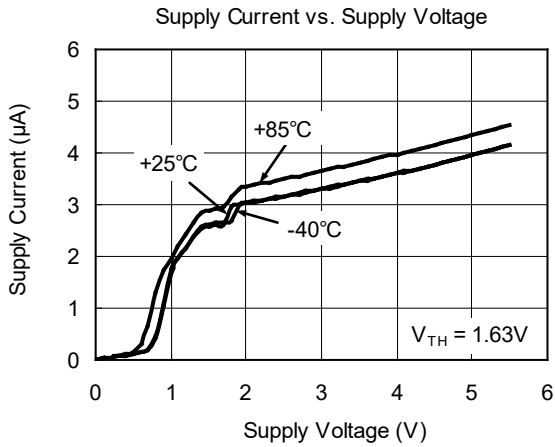
PIN		NAME	FUNCTION
SOT-143	SC70-4 (R)		
1	2	GND	Ground Pin.
2	1	V _{CC}	Supply Voltage Pin.
3	3	SRT	Set Reset Timeout Input Pin. Set a capacitor between SRT and GND to adjust the timeout period (t_{RP}). It is determined by: $t_{RP} (\mu s) = 2.6 \times 10^6 \times C_{SRT} (\mu F) + 340 \mu s$
4	4	RESET	Active-Low Reset Output. If V _{CC} is lower than the reset threshold, the RESET goes high. If V _{CC} voltage is higher than the reset threshold, the reset output remains high within t_{RP} .

ELECTRICAL CHARACTERISTICS(V_{CC} = 1V to 5.5V, T_A = -40°C to +85°C, typical values are at V_{CC} = 5V and T_A = +25°C, unless otherwise specified.)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Supply Voltage Range	V _{CC}		1.0		5.5	V
Supply Current	I _{CC}	V _{CC} ≤ 5.0V		3.9	7.0	μA
		V _{CC} ≤ 3.3V		3.4	5.5	
		V _{CC} ≤ 2.0V		3.0	4.8	
V _{CC} Reset Threshold Accuracy	V _{TH}	T _A = +25°C	V _{TH} - 2.5%		V _{TH} + 2.5%	V
		T _A = -40°C to +85°C	V _{TH} - 3.5%		V _{TH} + 3.5%	
Hysteresis	V _{HYST}			4 × V _{TH}		mV
V _{CC} to Reset Delay	t _{RD}	V _{CC} falling at 1mV/μs		80		μs
Reset Timeout Period	t _{RP}	C _{SRT} = 1500pF	3.00	4.25	5.75	ms
		C _{SRT} = 0		0.34		
V _{SRT} Ramp Current	I _{RAMP}	V _{SRT} = 0 to 0.65V, V _{CC} = 1.6V to 5V		210		nA
V _{SRT} Ramp Threshold	V _{TH-RAMP}	V _{CC} = 1.6V to 5V (V _{RAMP} rising)		0.6		V
RESET Output Voltage High	V _{OH}	V _{CC} ≥ 1.0V, I _{SOURCE} = 1μA	0.8 × V _{CC}			V
		V _{CC} ≥ 1.8V, I _{SOURCE} = 150μA	0.8 × V _{CC}			
		V _{CC} ≥ 2.7V, I _{SOURCE} = 500μA	0.8 × V _{CC}			
		V _{CC} ≥ 4.5V, I _{SOURCE} = 800μA	0.8 × V _{CC}			
RESET Output Voltage Low	V _{OL}	V _{CC} ≥ 1.8V, I _{SINK} = 500μA			0.3	V
		V _{CC} ≥ 2.7V, I _{SINK} = 1.2mA			0.3	
		V _{CC} ≥ 4.5V, I _{SINK} = 3.2mA			0.4	

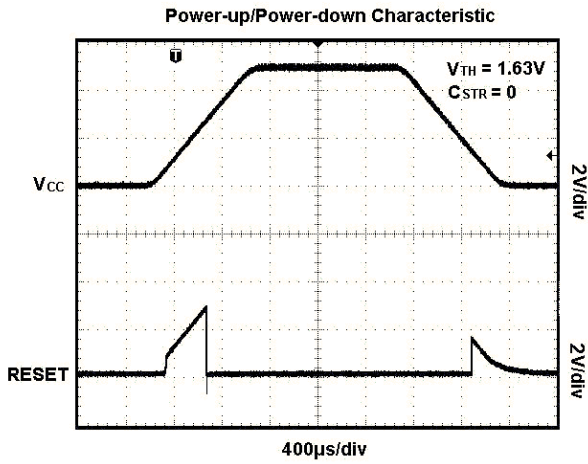
TYPICAL PERFORMANCE CHARACTERISTICS

$V_{CC} = 5\text{V}$, $C_{SRT} = 1500\text{pF}$, $T_A = +25^\circ\text{C}$, unless otherwise noted.



TYPICAL PERFORMANCE CHARACTERISTICS (continued)

$V_{CC} = 5V$, $C_{SRT} = 1500pF$, $T_A = +25^{\circ}C$, unless otherwise noted.



REVISION HISTORY

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

DECEMBER 2014 – REV.A.1 to REV.A.2

Added Green (RoHS & HSF) Information 2

JANUARY 2013 – REV.A to REV.A.1

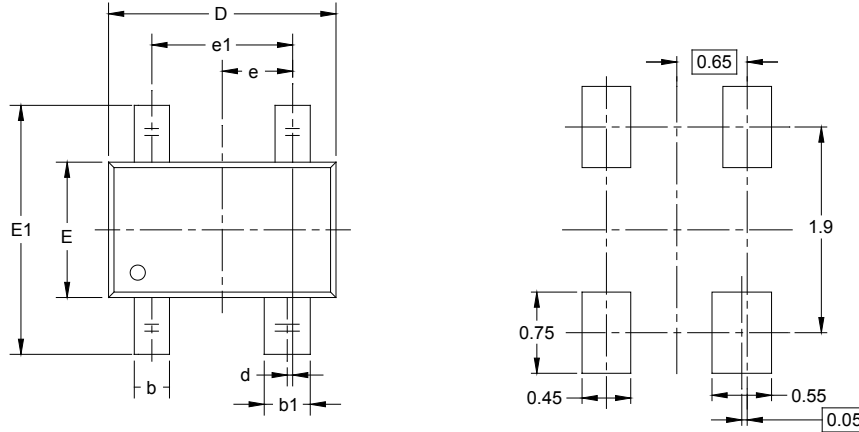
Added Tape and Reel Information section 10, 11

Changes from Original (MARCH 2012) to REV.A

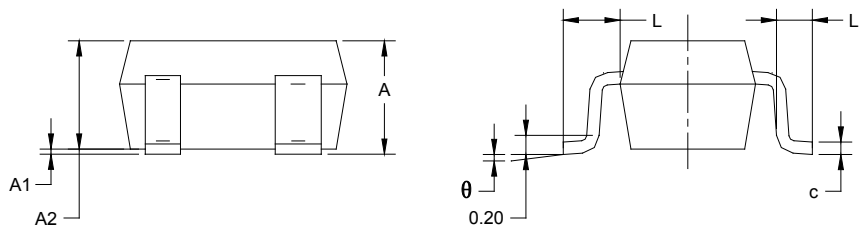
Changed from product preview to production data All

PACKAGE OUTLINE DIMENSIONS

SC70-4 (R)



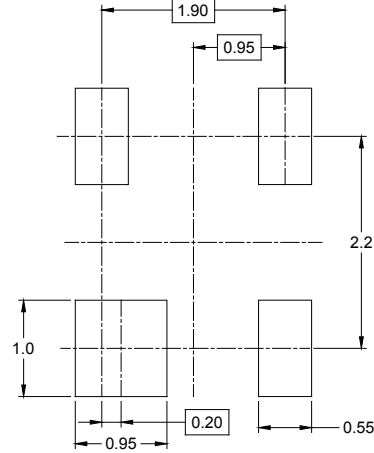
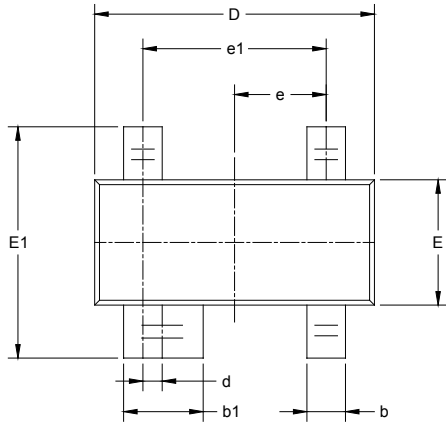
RECOMMENDED LAND PATTERN (Unit: mm)



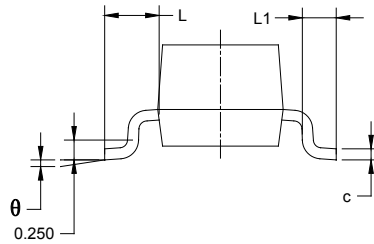
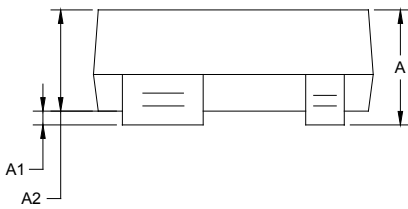
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.250	0.400	0.010	0.016
b1	0.350	0.500	0.014	0.020
c	0.080	0.150	0.003	0.006
d	0.050TYP		0.002TYP	
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
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 OUTLINE DIMENSIONS

SOT-143



RECOMMENDED LAND PATTERN (Unit: mm)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	MIN	MAX	MIN	MAX
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
b1	0.750	0.900	0.030	0.035
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
d	0.200 TYP		0.008 TYP	
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.95 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.55 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

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-143	7"	9.5	3.20	2.80	1.30	4.0	4.0	2.0	8.0	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