

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 $+85^{\circ}\text{C}$.

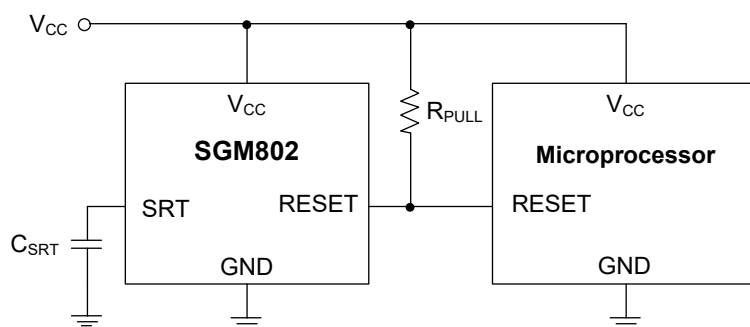
FEATURES

- **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



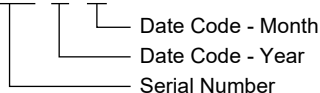
PACKAGE/ORDERING INFORMATION

| 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 |
|-----------------------------------|----------------|

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.

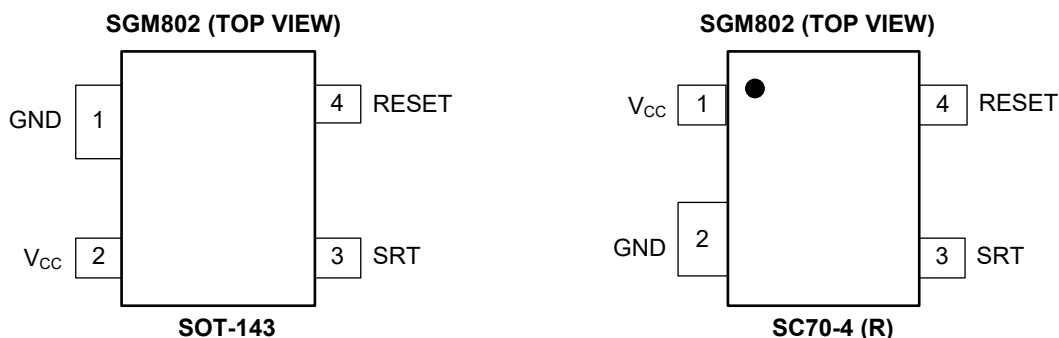
ESD SENSITIVITY CAUTION

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

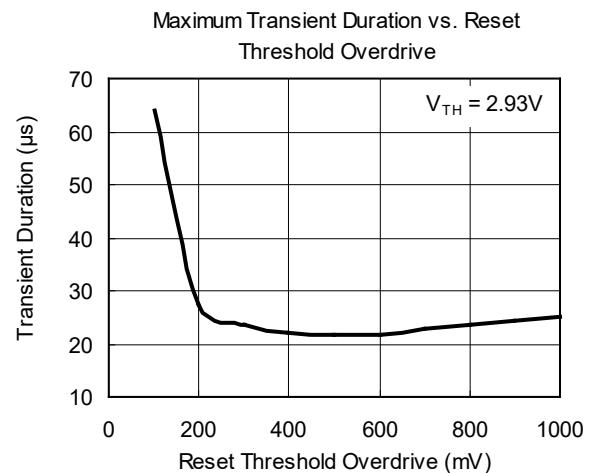
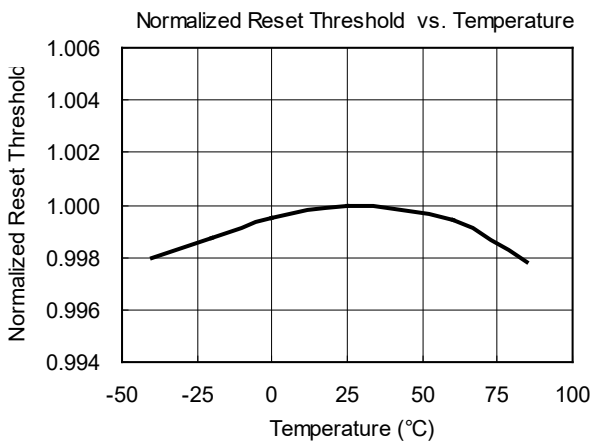
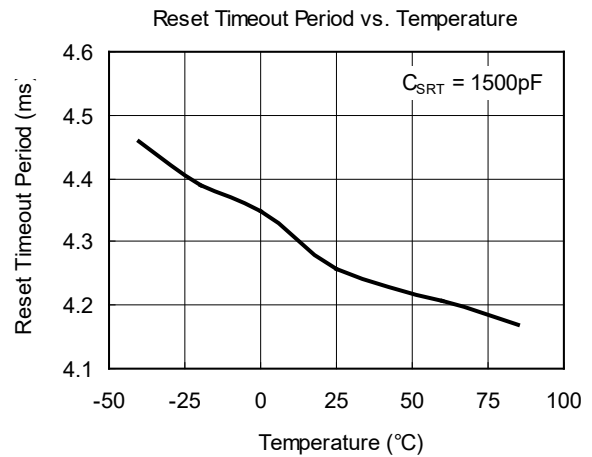
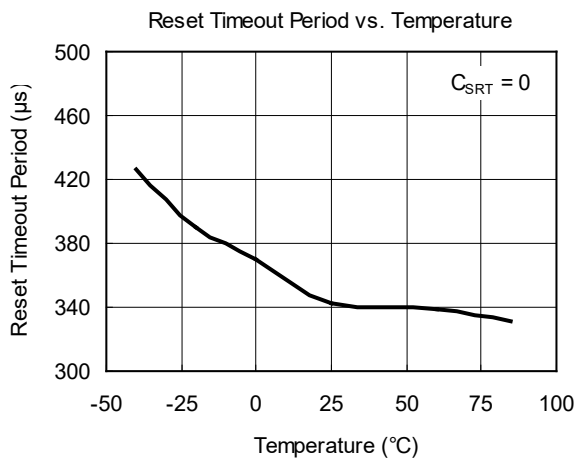
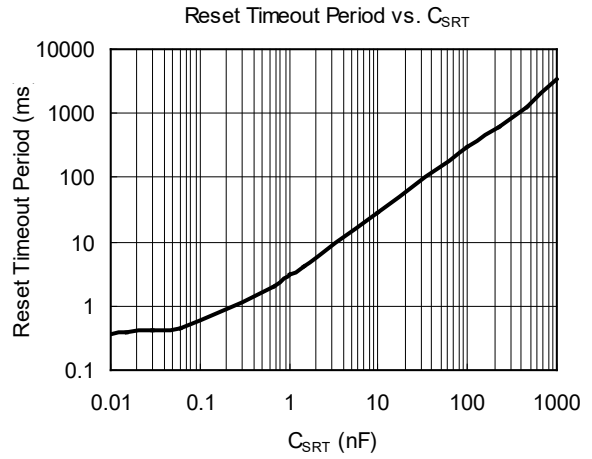
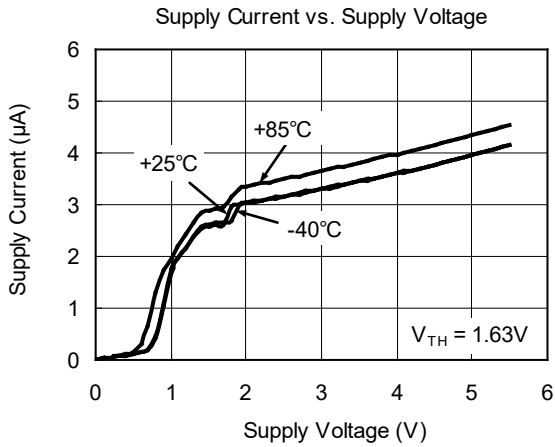
| PIN | | NAME | FUNCTION |
|---------|------------|-----------------|--|
| SOT-143 | SC70-4 (R) | | |
| 1 | 2 | GND | Ground Pin. |
| 2 | 1 | V _{CC} | Supply Voltage Pin. |
| 3 | 3 | SRT | Set Reset Timeout Input Pin. Set a capacitor between SRT and GND to adjust the timeout period (t_{RP}). It is 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 | |

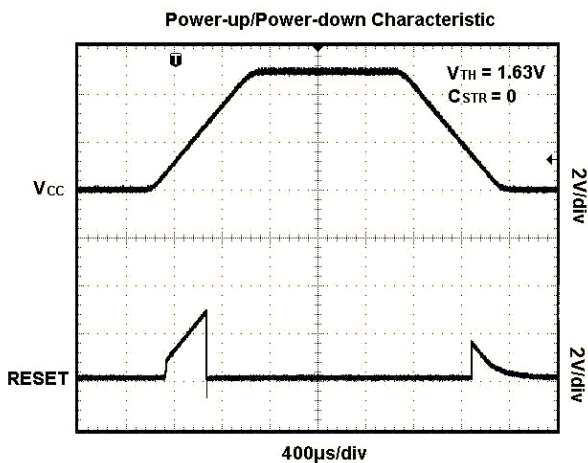
TYPICAL PERFORMANCE CHARACTERISTICS

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

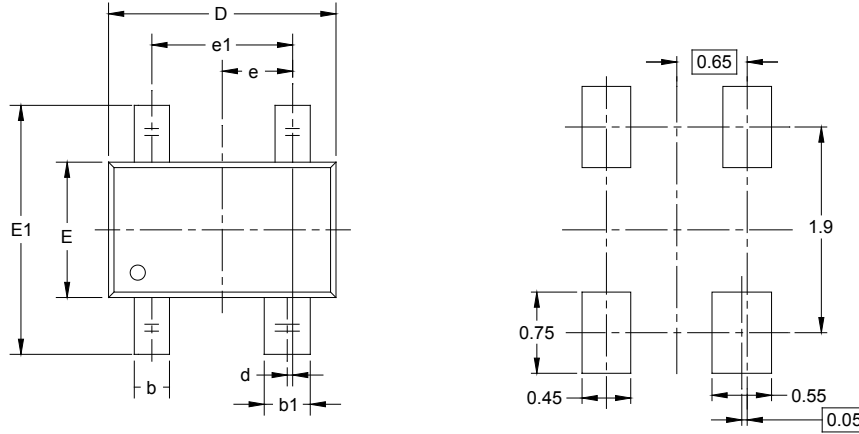
Added Tape and Reel Information section 10, 11

Changes from Original (MARCH 2012) to REV.A

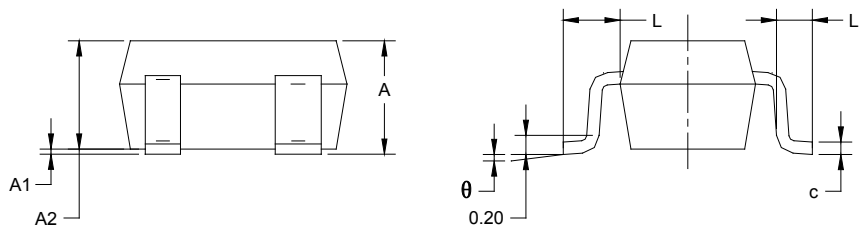
Changed from product preview to production data All

PACKAGE OUTLINE DIMENSIONS

SC70-4 (R)



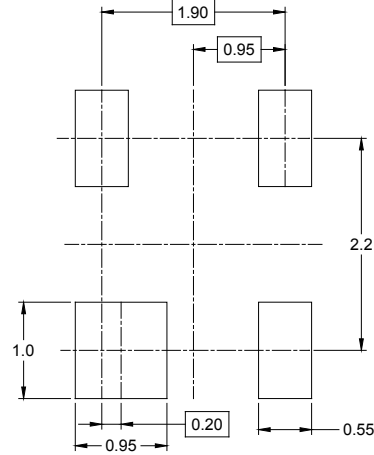
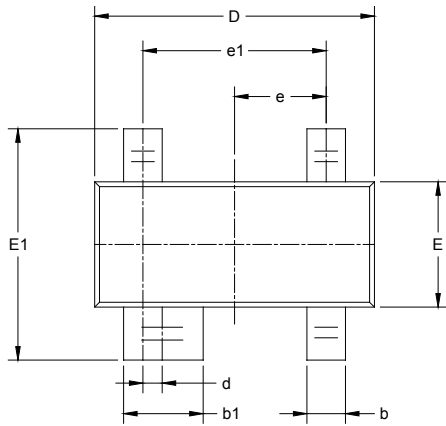
RECOMMENDED LAND PATTERN (Unit: mm)



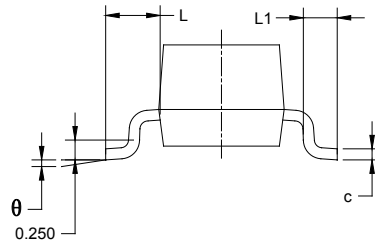
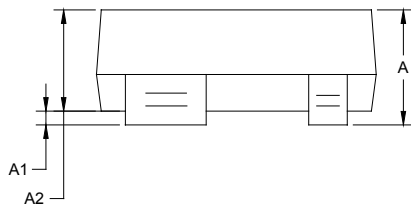
| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|------------------------------|-------|-------------------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.900 | 1.100 | 0.035 | 0.043 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.000 | 0.035 | 0.039 |
| b | 0.250 | 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



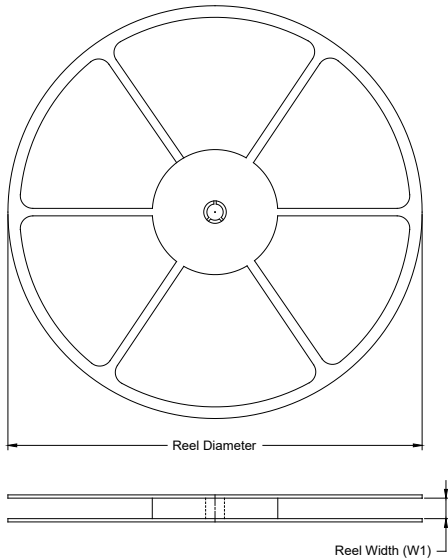
RECOMMENDED LAND PATTERN (Unit: mm)



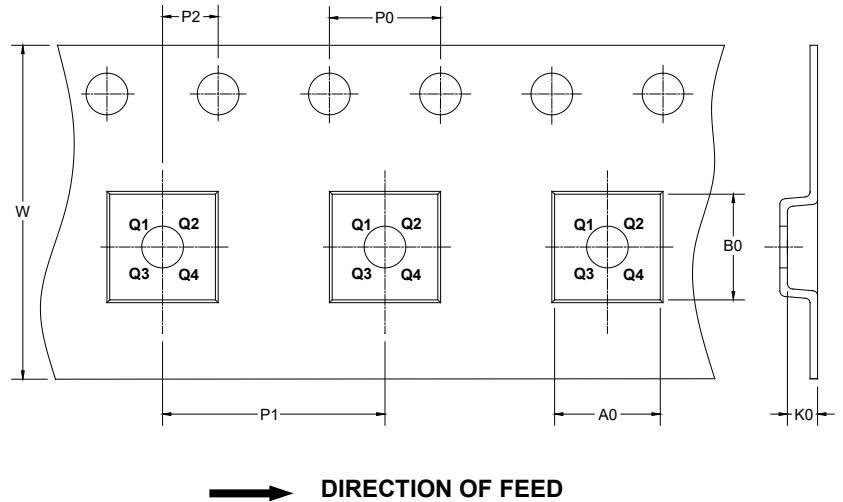
| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|------------------------------|-------|-------------------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 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 |

000001

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

单击下面可查看定价，库存，交付和生命周期等信息

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