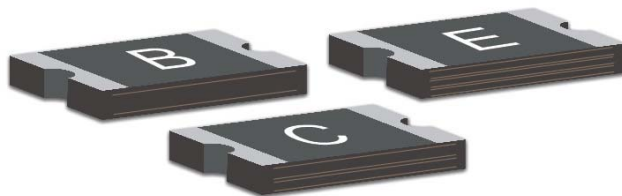
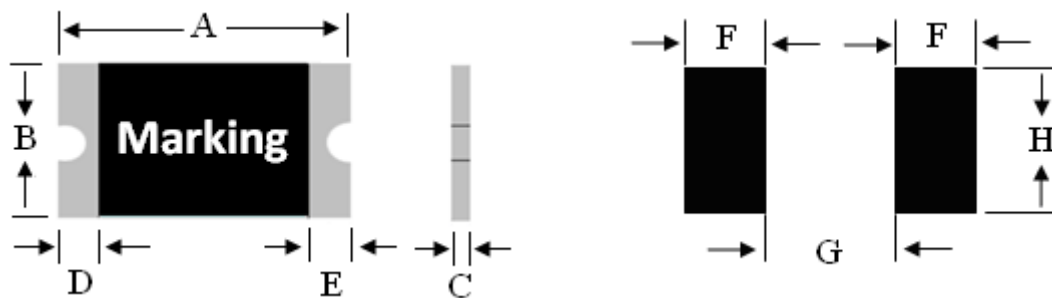


### Features:

- ✧ RoHS Compliant & Halogen Free
- ✧ Faster tripping, 0603 Dimension, Surface mountable, Solid state
- ✧ Operating Current: 0.35A~3.0A, @25°C
- ✧ Maximum Voltage: 6V
- ✧ Operating Temperature: -40°C~ 85°C
- ✧ Certification: ROHS



### Product Dimensions (mm)



| Part number  | A    |      | B    |      | C   |     | D    | E   |
|--------------|------|------|------|------|-----|-----|------|-----|
|              | Min  | Max  | Min  | Max  | Min | Max | Min  | Min |
| SMD0603P035L | 1.45 | 1.85 | 0.65 | 1.05 | 0.3 | 0.7 | 0.15 | 0.1 |
| SMD0603P050L | 1.45 | 1.85 | 0.65 | 1.05 | 0.3 | 0.7 | 0.15 | 0.1 |
| SMD0603P075L | 1.45 | 1.85 | 0.65 | 1.05 | 0.3 | 0.7 | 0.15 | 0.1 |
| SMD0603P100L | 1.45 | 1.85 | 0.65 | 1.05 | 0.4 | 1.0 | 0.15 | 0.1 |
| SMD0603P125L | 1.45 | 1.85 | 0.65 | 1.05 | 0.4 | 1.0 | 0.15 | 0.1 |
| SMD0603P150L | 1.45 | 1.85 | 0.65 | 1.05 | 0.5 | 1.2 | 0.15 | 0.1 |
| SMD0603P175L | 1.45 | 1.85 | 0.65 | 1.05 | 0.5 | 1.2 | 0.15 | 0.1 |
| SMD0603P200L | 1.45 | 1.85 | 0.65 | 1.05 | 0.7 | 1.4 | 0.15 | 0.1 |
| SMD0603P260L | 1.45 | 1.85 | 0.65 | 1.05 | 0.7 | 1.4 | 0.15 | 0.1 |
| SMD0603P300L | 1.45 | 1.85 | 0.65 | 1.05 | 0.7 | 1.4 | 0.15 | 0.1 |

## Recommended Solder Pad Layout Dimensions (mm)

| Device      | F            | G            | H            |
|-------------|--------------|--------------|--------------|
|             | Normal Value | Normal Value | Normal Value |
| 0603 Series | 1.0          | 0.8          | 1.0          |

## Electrical Characteristics

| Model        | V <sub>MAX</sub><br>(V) | I <sub>MAX</sub><br>(A) | I <sub>H</sub><br>(A) | I <sub>T</sub><br>(A) | P <sub>D</sub><br>(W) | Maximum<br>Time-to-Trip |       | Resistance        |                   |
|--------------|-------------------------|-------------------------|-----------------------|-----------------------|-----------------------|-------------------------|-------|-------------------|-------------------|
|              |                         |                         |                       |                       |                       | Current                 | Time  | R <sub>iMIN</sub> | R <sub>lMAX</sub> |
|              |                         |                         |                       |                       |                       | (A)                     | (Sec) | (Ω)               | (Ω)               |
| SMD0603P035L | 6.0                     | 50.0                    | 0.35                  | 0.7                   | 0.5                   | 8.0                     | 0.1   | 0.15              | 1.0               |
| SMD0603P050L | 6.0                     | 50.0                    | 0.5                   | 1.0                   | 0.5                   | 8.0                     | 0.6   | 0.07              | 0.4               |
| SMD0603P075L | 6.0                     | 50.0                    | 0.75                  | 1.5                   | 0.5                   | 8.0                     | 1.0   | 0.055             | 0.25              |
| SMD0603P100L | 6.0                     | 50.0                    | 1.0                   | 2.0                   | 0.5                   | 8.0                     | 2.0   | 0.045             | 0.12              |
| SMD0603P125L | 6.0                     | 50.0                    | 1.25                  | 2.5                   | 0.5                   | 8.0                     | 3.0   | 0.035             | 0.10              |
| SMD0603P150L | 6.0                     | 50.0                    | 1.5                   | 3.0                   | 0.5                   | 8.0                     | 4.0   | 0.025             | 0.08              |
| SMD0603P175L | 6.0                     | 50.0                    | 1.75                  | 3.5                   | 0.5                   | 8.0                     | 5.0   | 0.015             | 0.07              |
| SMD0603P200L | 6.0                     | 50.0                    | 2.0                   | 4.0                   | 0.5                   | 8.0                     | 5.0   | 0.012             | 0.06              |
| SMD0603P260L | 6.0                     | 50.0                    | 2.6                   | 5.2                   | 0.5                   | 8.0                     | 5.0   | 0.008             | 0.05              |
| SMD0603P300L | 6.0                     | 50.0                    | 3.0                   | 6.0                   | 0.5                   | 8.0                     | 5.0   | 0.008             | 0.04              |

## Thermal Derating Chart-I<sub>H</sub>(A)

| Model        | Maximum ambient operating temperature (°C) |      |      |      |      |      |      |      |      |
|--------------|--------------------------------------------|------|------|------|------|------|------|------|------|
|              | -40                                        | -20  | 0    | 25   | 40   | 50   | 60   | 70   | 85   |
| SMD0603P035L | 0.46                                       | 0.40 | 0.37 | 0.35 | 0.29 | 0.25 | 0.24 | 0.20 | 0.14 |
| SMD0603P050L | 0.66                                       | 0.57 | 0.53 | 0.50 | 0.41 | 0.36 | 0.34 | 0.29 | 0.20 |
| SMD0603P075L | 0.99                                       | 0.86 | 0.79 | 0.75 | 0.62 | 0.54 | 0.51 | 0.43 | 0.30 |
| SMD0603P100L | 1.31                                       | 1.14 | 1.06 | 1.00 | 0.83 | 0.71 | 0.69 | 0.57 | 0.40 |
| SMD0603P125L | 1.64                                       | 1.43 | 1.32 | 1.25 | 1.04 | 0.89 | 0.86 | 0.71 | 0.50 |
| SMD0603P150L | 1.97                                       | 1.71 | 1.59 | 1.50 | 1.24 | 1.07 | 1.03 | 0.86 | 0.60 |
| SMD0603P175L | 2.30                                       | 2.00 | 1.85 | 1.75 | 1.45 | 1.25 | 1.20 | 1.00 | 0.70 |
| SMD0603P200L | 2.63                                       | 2.29 | 2.11 | 2.00 | 1.66 | 1.43 | 1.37 | 1.14 | 0.80 |
| SMD0603P260L | 3.42                                       | 2.97 | 2.75 | 2.60 | 2.15 | 1.86 | 1.78 | 1.49 | 1.04 |
| SMD0603P300L | 3.94                                       | 3.43 | 3.17 | 3.00 | 2.49 | 2.14 | 2.06 | 1.71 | 1.20 |

## Test Procedures and Requirements

| Test Item          | Test Conditions                                          | Accept/Reject Criteria               |
|--------------------|----------------------------------------------------------|--------------------------------------|
| Initial Resistance | In still air at $25 \pm 2^\circ\text{C}$                 | $R_{\min} \leq R \leq R_{\max}$      |
| Time to Trip       | Specified current, $V_{\max}$ , $25 \pm 2^\circ\text{C}$ | $T \leq \text{Maximum Time to Trip}$ |
| Holding Current    | 30min, at $I_H$ , @ $25 \pm 2^\circ\text{C}$             | No trip                              |
| Trip Endurance     | $V_{\max}$ , 1 hour                                      | No arcing or burning                 |

## Physical Characteristics

|                      |                                                                  |
|----------------------|------------------------------------------------------------------|
| Terminal Materials   | Tin-Plated Nickle-copper                                         |
| Soldering Zone       | Meets EIA specification RS 186-9E and ANSI/J-STD-002 Category 3. |
| Moisture Sensitivity | Level 2a, per IPC/JEDEC J-STD 020C                               |

## Environmental Specifications

| Test Item          | Test Conditions                                                              | Resistance Change  |
|--------------------|------------------------------------------------------------------------------|--------------------|
| Passive Aging      | $85^\circ\text{C}$ , 1000 hours                                              | $\pm 10\%$ typical |
| Humidity Aging     | $85^\circ\text{C}/85\%\text{RH}$ , 100 hours                                 | $\pm 5\%$ typical  |
| Thermal Shock      | MIL-STD-202, Method 107G<br>$+85^\circ\text{C}/-40^\circ\text{C}$ , 20 times | -30% typical       |
| Solvent Resistance | MIL-STD-202, Method 215                                                      | No change          |
| Vibration          | ML-STD-883C, Test Condition A                                                | No change          |

## Electrical Specifications

$I_H$ =Hold current: Maximum current at which the device will not interrupt in  $25^\circ\text{C}$  still air.

$I_T$ =Trip current: Minimum current at which the device from low resistance to high resistance in  $25^\circ\text{C}$  still air.

$V_{\max}$ =Maximum continuous voltage device can withstand without damage at rated current.

$I_{\max}$ =Maximum fault current device can withstand without damage at rated voltage.

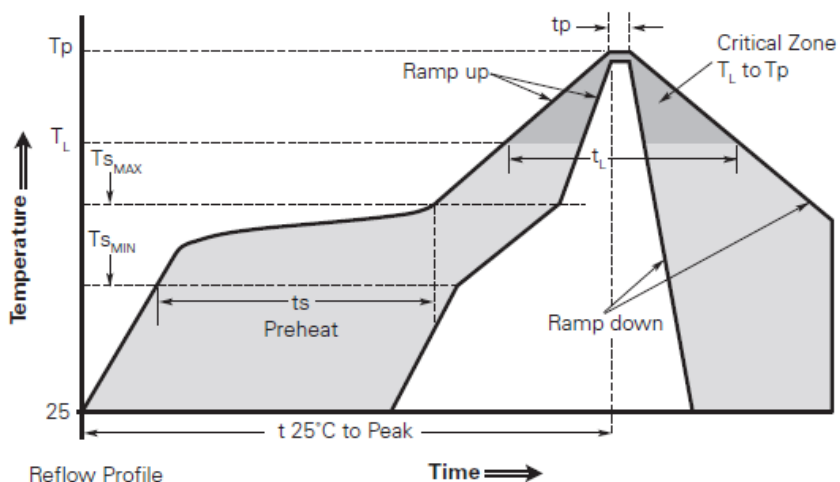
Maximum Time-to-trip: Maximum time to trip at assigned current.

$P_D$ =Typical power dissipation: Typical amount of power dissipated from the device when in  $25^\circ\text{C}$  still air environment.

$R_{\min}$ =Minimum resistance of device at  $25^\circ\text{C}$  prior to tripping.

$R_{\max}$  = Maximum device resistance is measured one hour post reflow.

## Solder Reflow Profiles



| Profile Feature                                                          | Pb-Free Assembly |
|--------------------------------------------------------------------------|------------------|
| <b>Average ramp up rate(<math>T_{S\_MAX}</math> to <math>T_P</math>)</b> | 3 °C/second max. |
| <b>Preheat</b>                                                           |                  |
| • Temperature min. ( $T_{S\_MIN}$ )                                      | 150 °C           |
| • Temperature max. ( $T_{S\_MAX}$ )                                      | 200 °C           |
| • Time ( $T_{S\_MIN}$ to $T_{S\_MAX}$ )                                  | 60-120 seconds   |
| <b>Time maintained above:</b>                                            |                  |
| • Temperature ( $T_L$ )                                                  | 217 °C           |
| • Time ( $T_L$ )                                                         | 60-150 seconds   |
| <b>Peak/Classification temperature (<math>T_P</math>)</b>                | 260 °C           |
| <b>Time within 5 °C of actual peak temperature</b>                       |                  |
| Time ( $T_P$ )                                                           | 30 seconds max.  |
| <b>Ramp down rate</b>                                                    | 3 °C/second max. |
| <b>Time 25 °C to peak temperature</b>                                    | 8 minutes max.   |

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free.
- Devices are not designed to be wave soldered to the bottom side of the board.
- Recommended maximum paste thickness is 0.25mm (0.010inch).
- Devices can be cleaned using standard industry methods and solvents.

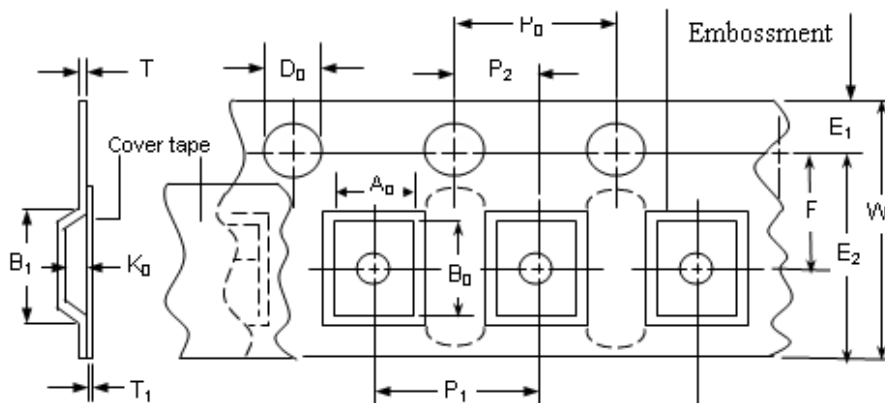
Note 1: All temperature refer to topside of the package, measured on the package body surface.

Note 2: If reflow temperature exceed the recommended profile, devices may not meet the performance requirements.

## Tape Specifications and Reel Dimensions

| Covering Specifications EIA 481-1 |                     |
|-----------------------------------|---------------------|
| W                                 | $8.0 \pm 0.1$       |
| $P_0$                             | $4.0 \pm 0.1$       |
| $P_1$                             | $4.0 \pm 0.10$      |
| $P_2$                             | $2.0 \pm 0.05$      |
| $A_0$                             | $0.95 \pm 0.10$     |
| $B_0$                             | $1.85 \pm 0.05$     |
| $D_0$                             | $1.55 \pm 0.05$     |
| F                                 | $3.5 \pm 0.05$      |
| $E_1$                             | $1.75 \pm 0.10$     |
| T                                 | $0.20 \pm 0.02$     |
| Leader min.                       | 390                 |
| Trailer min.                      | 160                 |
| Reel Dimensions                   |                     |
| A                                 | $178 \pm 1$         |
| N                                 | $59 \pm 1$          |
| $W_1$                             | $8.5 + 1.0 / - 0.2$ |
| $W_2$                             | $12.0 \pm 1$        |

### EIA Tape Component Dimensions



### EIA Reel Dimensions

