

SMD Series

Features

- Surface Mount Devices
- Lead free device
- Size 7555mm/2920 mils
- Surface Mount packaging for automated assembly
- Agency recognition:

Applications

- Almost anywhere there is a low voltage power supply, up to 60V and a load to be protected, including:
- Computer mother board, Modem.
 - Telecommunication equipments.

Sea & Land

Performance Specification

| Model | V _{max} (Vdc) | I _{max} (A) | I _{hold} @25 °C (A) | I _{trip} @25 °C (A) | P _d Max. (W) | Maximum Time To Trip | | Resistance | |
|---------|---------------------------|-------------------------|------------------------------------|------------------------------------|-------------------------------|----------------------|---------------|---------------------------|---------------------------|
| | | | | | | Current (A) | Time (Sec) | R _{i min} (Ω) | R _{1 max} (Ω) |
| SMD030L | 60 | 10 | 0.30 | 0.60 | 1.5 | 1.5 | 3.0 | 0.600 | 4.800 |
| SMD050L | 60 | 10 | 0.50 | 1.00 | 1.5 | 2.5 | 4.0 | 0.180 | 1.400 |
| SMD075L | 33 | 40 | 0.75 | 1.50 | 1.5 | 8.0 | 0.3 | 0.100 | 1.000 |
| SMD100L | 33 | 40 | 1.10 | 2.20 | 1.5 | 8.0 | 0.5 | 0.065 | 0.410 |
| SMD125L | 33 | 40 | 1.25 | 2.50 | 1.5 | 8.0 | 2.0 | 0.050 | 0.250 |
| SMD150L | 33 | 40 | 1.50 | 3.00 | 1.5 | 8.0 | 2.0 | 0.035 | 0.230 |
| SMD185L | 33 | 40 | 1.85 | 3.70 | 1.5 | 8.0 | 2.5 | 0.030 | 0.150 |
| SMD200L | 16 | 40 | 2.00 | 4.00 | 1.5 | 8.0 | 4.5 | 0.020 | 0.120 |
| SMD250L | 16 | 40 | 2.50 | 5.00 | 1.5 | 8.0 | 16.0 | 0.020 | 0.085 |
| SMD260L | 6 | 40 | 2.60 | 5.20 | 1.5 | 8.0 | 10.0 | 0.014 | 0.075 |
| SMD300L | 16 | 40 | 3.00 | 6.00 | 1.5 | 8.0 | 20.0 | 0.012 | 0.048 |

I_{hold} = Hold Current. Maximum current device will not trip in 25 °C still air.

I_{trip} = Trip Current. Minimum current at which the device will always trip in 25 °C still air.

V_{max} = Maximum operating voltage device can withstand without damage at rated current (I_{max}).

I_{max} = Maximum fault current device can withstand without damage at rated voltage (V_{max}).

P_d = Maximum power dissipation when device is in the tripped state in 25 °C still air environment at rated voltage.

R_{imin/max} = Minimum/Maximum device resistance prior to tripping at 25 °C.

R_{1 max} = Maximum device resistance is measured one hour post reflow.

CAUTION : Operation beyond the specified ratings may result in damage and possible arcing and flame.

Environmental Specifications

| Test | Conditions | Resistance change |
|--|------------------------------|-------------------|
| Passive aging | +85 °C, 1000 hrs. | ±5% typical |
| Humidity aging | +85 °C, 85% R.H. , 168 hours | ±5% typical |
| Thermal shock | +85 °C to -40 °C, 20 times | ±33% typical |
| Resistance to solvent | MIL-STD-202,Method 215 | No change |
| Vibration | MIL-STD-202,Method 201 | No change |
| Ambient operating conditions : - 40 °C to 85 °C | | |
| Maximum surface temperature of the device in the tripped state is 125 °C | | |

AGENCY APPROVALS :



U.L approved



AGENCY FILE NUMBERS : U.L. FILE NO. : E201504

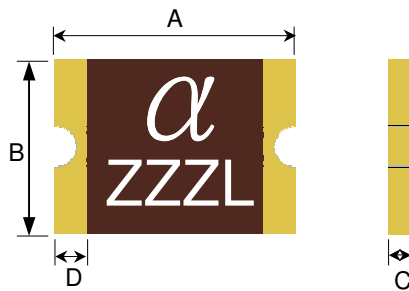
I_{hold} versus temperature

| Model | Maximum ambient operating temperature (T _{mao}) vs. hold current (I _{hold}) | | | | | | | | |
|---------|---|--------|------|-------|-------|-------|-------|-------|-------|
| | -40 °C | -20 °C | 0 °C | 25 °C | 40 °C | 50 °C | 60 °C | 70 °C | 85 °C |
| SMD030L | 0.45 | 0.40 | 0.35 | 0.30 | 0.25 | 0.23 | 0.20 | 0.17 | 0.14 |
| SMD050L | 0.76 | 0.67 | 0.59 | 0.50 | 0.42 | 0.38 | 0.33 | 0.29 | 0.23 |
| SMD075L | 1.13 | 1.01 | 0.88 | 0.75 | 0.62 | 0.56 | 0.50 | 0.44 | 0.34 |
| SMD100L | 1.66 | 1.47 | 1.29 | 1.10 | 0.91 | 0.83 | 0.73 | 0.64 | 0.50 |
| SMD125L | 1.89 | 1.68 | 1.46 | 1.25 | 1.04 | 0.94 | 0.83 | 0.73 | 0.56 |
| SMD150L | 2.27 | 2.01 | 1.76 | 1.50 | 1.25 | 1.13 | 1.00 | 0.87 | 0.74 |
| SMD185L | 2.80 | 2.47 | 2.17 | 1.85 | 1.54 | 1.39 | 1.22 | 1.07 | 0.85 |
| SMD200L | 3.02 | 2.68 | 2.34 | 2.00 | 1.66 | 1.50 | 1.32 | 1.16 | 0.90 |
| SMD250L | 3.78 | 3.35 | 2.93 | 2.50 | 2.08 | 1.88 | 1.65 | 1.45 | 1.13 |
| SMD260L | 3.64 | 3.25 | 2.91 | 2.60 | 2.26 | 2.08 | 1.95 | 1.74 | 1.13 |
| SMD300L | 4.53 | 4.02 | 3.51 | 3.00 | 2.52 | 2.26 | 1.99 | 1.75 | 1.34 |

Construction and Dimension (Unit:mm)

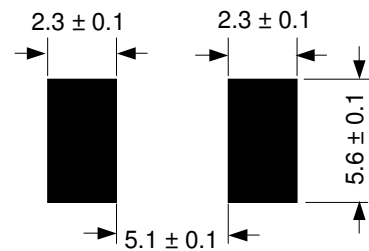
| Model | A | | B | | C | | D |
|---------|------|------|------|------|------|------|------|
| | Min. | Max. | Min. | Max. | Min. | Max. | Min. |
| SMD030L | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.15 | 0.30 |
| SMD050L | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.15 | 0.30 |
| SMD075L | 6.73 | 7.98 | 4.80 | 5.44 | 0.60 | 1.15 | 0.30 |
| SMD100L | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 1.00 | 0.30 |
| SMD125L | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 0.90 | 0.30 |
| SMD150L | 6.73 | 7.98 | 4.80 | 5.44 | 0.40 | 0.90 | 0.30 |
| SMD185L | 6.73 | 7.98 | 4.80 | 5.44 | 0.30 | 0.90 | 0.30 |
| SMD200L | 6.73 | 7.98 | 4.80 | 5.44 | 0.30 | 0.90 | 0.30 |
| SMD250L | 6.73 | 7.98 | 4.80 | 5.44 | 0.30 | 0.90 | 0.30 |
| SMD260L | 6.73 | 7.98 | 4.80 | 5.44 | 0.30 | 0.90 | 0.30 |
| SMD300L | 6.73 | 7.98 | 4.80 | 5.44 | 0.30 | 0.90 | 0.30 |

Dimensions & Marking



α = Trademark
ZZZ = Hold current

Recommended pad layout (mm)



Termination pad characteristics

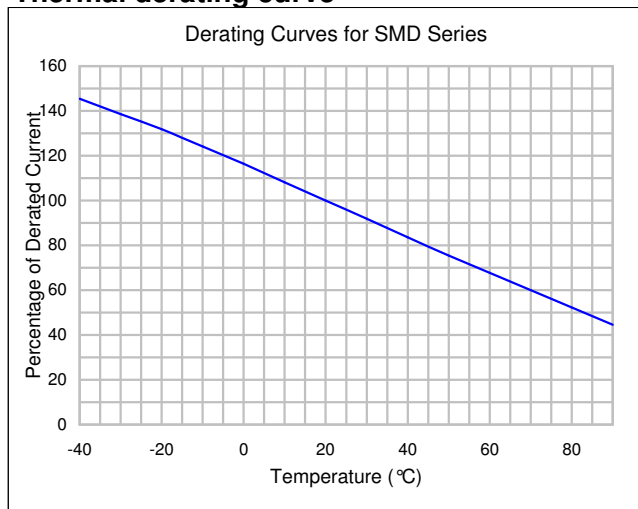
Terminal pad materials : Tin-Plated Nickle-Copper or Gold-Plated Nickle-Copper

Terminal pad solderability : Meets EIA specification RS186-9E and ANSI/J-STD-002 Category 3.

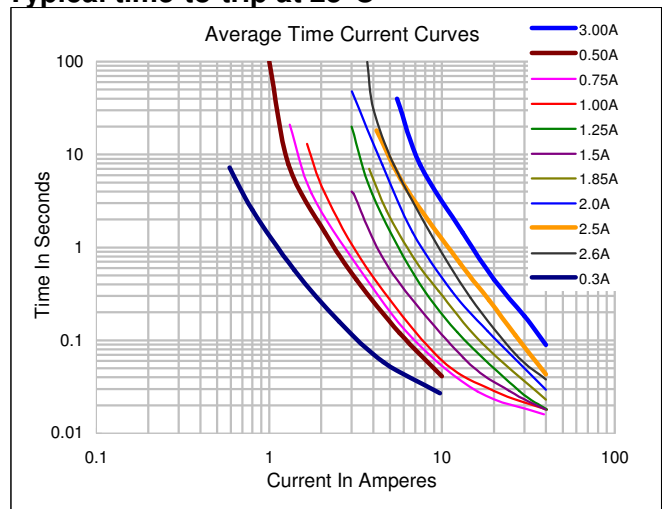
Rework

Use standard industry practices, the removal device must be replaced with a fresh one.

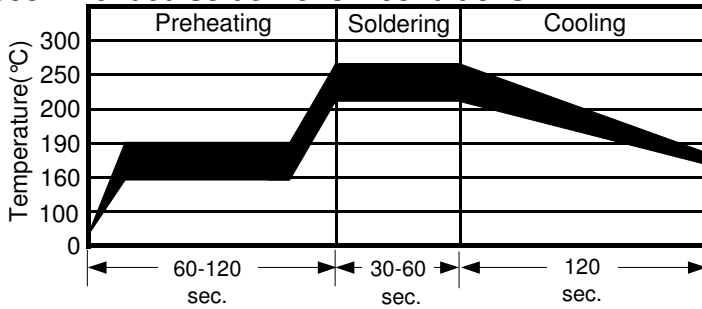
Thermal derating curve



Typical time-to-trip at 25°C



Recommended solder reflow conditions

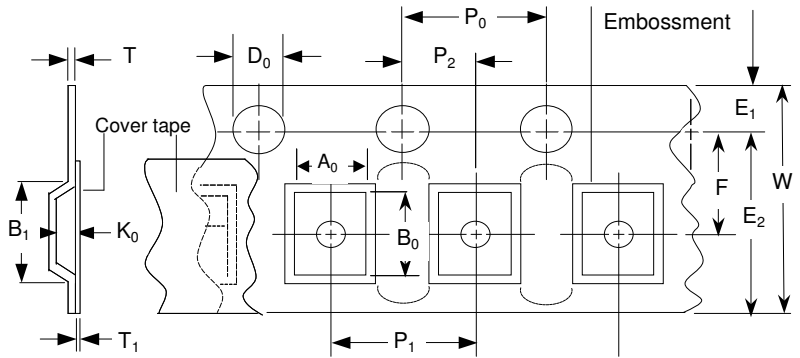


- Recommended reflow methods : IR, vapor phase oven, hot air oven.
 - Devices are not designed to be wave soldered to the bottom side of the board.
 - Recommended maximum paste thickness is 0.25 mm (0.010 inch).
 - Devices can be cleaned using standard method and solvents.
- Note : If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

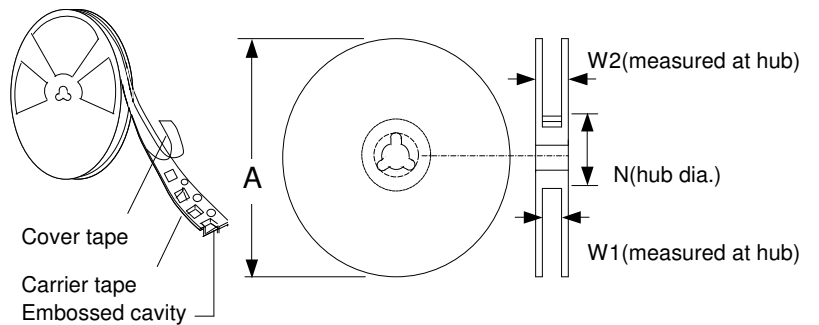
Tape and reel specifications (mm)

| SMD | |
|--------------------------|------------------|
| Governing Specifications | EIA 481-2 |
| W | 16.0 ± 0.3 |
| P ₀ | 4.0 ± 0.10 |
| P ₁ | 8.0 ± 0.10 |
| P ₂ | 2.0 ± 0.05 |
| A ₀ | 5.70 ± 0.10 |
| B ₀ | 8.00 ± 0.10 |
| B ₁ max. | 12.1 |
| D ₀ | 1.5 + 0.1, -0 |
| F | 7.5 ± 0.05 |
| E ₁ | 1.75 ± 0.10 |
| E ₂ min. | 14.25 |
| Tmax. | 0.6 |
| T ₁ max. | 0.1 |
| K ₀ | 0.80 ± 0.1 |
| Leader min. | 390 |
| Trailer min. | 160 |
| Reel Dimensions | |
| A max. | 178 |
| N min. | 60 |
| W ₁ | 16.4 + 2.0, -0.0 |
| W ₂ max. | 22.4 |

EIA Tape Component Dimensions



EIA Reel Dimensions



Storage and handling

- Storage conditions : 40°C max, 70% R.H.
- Devices may not meet specified performance if storage conditions are exceeded.

Order information

Packaging

| SMD | 050L | Tape & Reel Quantity |
|----------------------------|---------|----------------------|
| Product name | Hold | 2,000 pcs/reel |
| size 2920 mils | Current | |
| SMD : surface mount device | 0.50A | |

Tape & reel packaging per EIA481-1