

## Surface-Mount Device

## SMD1812-300C-16V

RoHS 

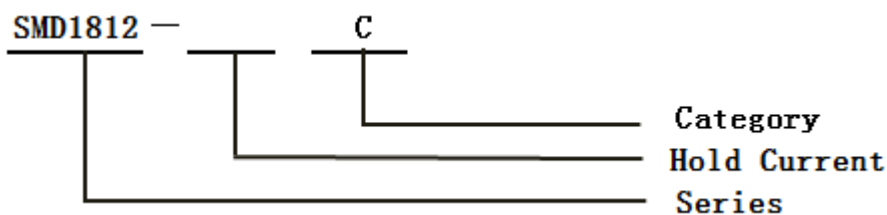
### Feature

- Resettable over current and over temperature protection
- Small size of 1812
- Small footprint
- Low resistance
- Fast time-to-trip
- RoHS complaint

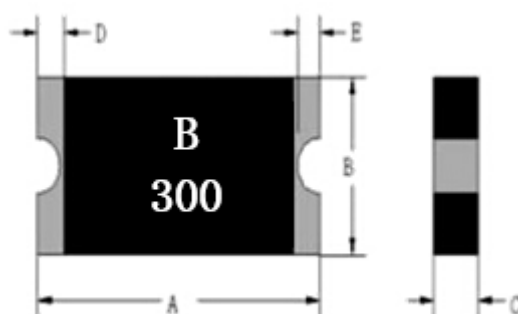
### Application

- Computer
- Battery
- Mobile phones
- Industrial controls
- Automotive
- Portable electronics
- Multimedia
- Game machines
- Telephony and broadband

### Part Numbering



### Product Dimensions in Millimeter



| Part Number      | A    |      | B    |      | C    |      | D    |     | E    |     |
|------------------|------|------|------|------|------|------|------|-----|------|-----|
|                  | Min  | Max  | Min  | Max  | Min  | Max  | Min  | Max | Min  | Max |
| SMD1812-300C-16V | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 1.50 | 0.30 | --  | 0.25 | --  |

### Electrical Characteristics

| Part Number      | I(A) |      | V <sub>max</sub> | I <sub>max</sub> | Pd <sub>typ</sub> | T <sub>trip</sub> |         | R <sub>min</sub> | R <sub>1max</sub> |
|------------------|------|------|------------------|------------------|-------------------|-------------------|---------|------------------|-------------------|
|                  | 25℃  |      | --               | --               | --                | 25℃               |         | 25℃              |                   |
|                  | Hold | Trip | (V)              | (A)              | (W)               | Current(A)        | Time(S) | (Ω)              | (Ω)               |
| SMD1812-300C-16V | 3.0  | 6.0  | 16.0             | 100              | 0.8               | 8.0               | 4.0     | 0.010            | 0.040             |

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$I_H$ =Hold current: maximum current at which the device will not trip at 25°C still air reflow soldering of 260°C for 20 sec.

$I_T$ =Trip current: minimum current at which the device will always trip at 25°C still air reflow soldering of 260°C for 20 sec.

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

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

$T_{trip}$ =Maximum time to trip(s) at assigned current reflow soldering of 260°C for 20 sec.

$P_{dtyp}$ =Typical power dissipation: typical amount of power dissipated by the device when in state air environment.

$R_{min}$ = Minimum resistance of device in initial (un-soldered) state.

$R_{1max}$ =Maximum resistance of device at 25°C measured one hour after reflow soldering of 260°C for 20 sec.

**Value specified is determined by using the PWB with 0.030" \*1.5oz copper traces.**

**Caution: Operation beyond the specified rating may result in damage and possible arcing and flame.**

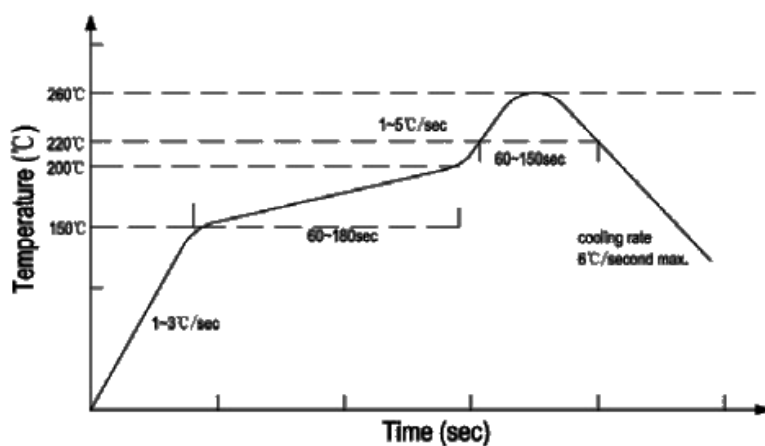
## Environmental Specifications

| Test                           | Test Conditions                                  | Accept /Reject Criteria |
|--------------------------------|--------------------------------------------------|-------------------------|
| Recommended storage conditions | 40°C max, 70% R.H. max                           | No change               |
| Passive aging:                 | 85°C, 1000 hours                                 | $\leq R_{1max}$         |
| Moisture Resistance            | 85% RH, 85°C, 1000hrs                            | $\leq R_{1max}$         |
| Thermal Shock                  | MIL-STD-202 Method 107G<br>+85°C /-40°C 20 times | $\leq R_{1max}$         |
| Vibration                      | MIL-STD-883C, Method 2007.1,<br>Condition A      | No change               |
| Solvent Resistance             | MIL-STD-202, Method 215                          | No change               |
| Moisture Level Sensitivity     | Level 2, J-STD-020C                              | No change               |

## Thermal Derating [ Hold Current (A) at Ambient Temperature (°C)]

| Part Number      | Maximum Ambient Operating Temperature (°C) |      |      |      |      |      |      |      |      |
|------------------|--------------------------------------------|------|------|------|------|------|------|------|------|
|                  | -40                                        | -20  | 0    | 25   | 40   | 50   | 60   | 70   | 85   |
| SMD1812-300C-16V | 4.15                                       | 3.76 | 3.46 | 3.00 | 2.55 | 2.28 | 2.01 | 1.61 | 1.33 |

## Solder Reflow Recommendation





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Recommended reflow methods:IR,hot air oven ,nitrogen oven  
Devices can be cleaned using standard industry methods and solvents.

### NOTE:

If reflow temperatures exceed the recommended profile,devices may not meet the performance requirements.

**Caution:** Operation beyond the rated voltage or current may result in rupture electrical arcing or flame

## Packaging Quantity and Marking

| Device           | Marking  | Standard Quantity (pcs) |
|------------------|----------|-------------------------|
| SMD1812-300C-16V | B<br>300 | 1500                    |

### NOTE:

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Operation beyond the maximum ratings or improper use may result in device damage and possible electrical arcing and flame. The devices are intended for protection against occasional over-current or over temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events are anticipated. Device performance can be impacted negatively if devices are handled in a manner inconsistent with recommended electronic, thermal, and mechanical procedures for electronic components.

### Contact information

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|             |       |       |         |
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| Rev. letter |       | Date  |         |
| Design      | Check | Audit | Approve |
|             |       |       |         |