

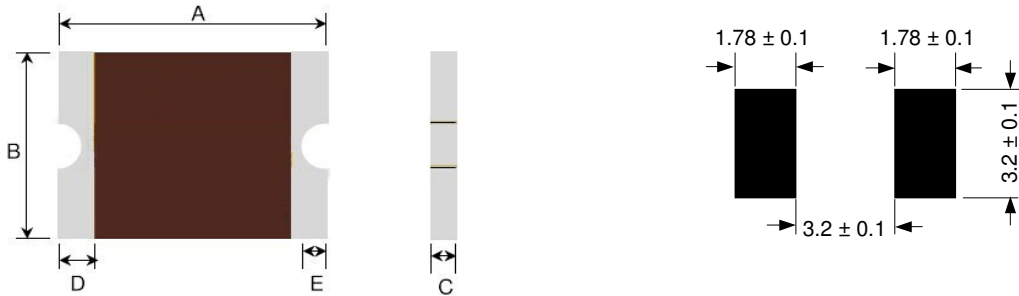
### Features

- Surface Mount Devices
- Lead free device
  - Size 4532mm/1812 mils
  - Surface Mount packaging for automated assembly
- Agency recognition:UL

### Applications

- Almost anywhere there is a low voltage power supply, up to DC33V and a load to be protected, including:
- Computer mother board,Modem,USB hub
  - PDAs & Charger,Analog & digital line card
  - Digital cameras,Dish drivers, CD-ROMs

### Dimensions (mm)



### Product dimensions (mm)

| Model        | A    |      | B    |      | C    |      | D    | E    |
|--------------|------|------|------|------|------|------|------|------|
|              | min  | max  | min  | max  | min  | max  | min  | min  |
| BSMD1812-010 | 4.37 | 4.73 | 3.07 | 3.41 | 0.50 | 1.00 | 0.30 | 0.25 |
| BSMD1812-014 | 4.37 | 4.73 | 3.07 | 3.41 | 0.50 | 1.00 | 0.30 | 0.25 |
| BSMD1812-020 | 4.37 | 4.73 | 3.07 | 3.41 | 0.50 | 1.30 | 0.30 | 0.25 |
| BSMD1812-030 | 4.37 | 4.73 | 3.07 | 3.41 | 0.50 | 1.00 | 0.30 | 0.25 |
| BSMD1812-050 | 4.37 | 4.73 | 3.07 | 3.41 | 0.40 | 1.80 | 0.30 | 0.25 |
| BSMD1812-075 | 4.37 | 4.73 | 3.07 | 3.41 | 0.40 | 0.90 | 0.30 | 0.25 |
| BSMD1812-110 | 4.37 | 4.73 | 3.07 | 3.41 | 0.40 | 1.30 | 0.30 | 0.25 |
| BSMD1812-125 | 4.37 | 4.73 | 3.07 | 3.41 | 0.60 | 1.30 | 0.30 | 0.25 |
| BSMD1812-150 | 4.37 | 4.73 | 3.07 | 3.41 | 0.40 | 1.20 | 0.30 | 0.25 |
| BSMD1812-160 | 4.37 | 4.73 | 3.07 | 3.41 | 0.40 | 1.20 | 0.30 | 0.25 |
| BSMD1812-200 | 4.37 | 4.73 | 3.07 | 3.41 | 0.50 | 1.30 | 0.30 | 0.25 |
| BSMD1812-260 | 4.37 | 4.73 | 3.07 | 3.41 | 0.50 | 1.50 | 0.30 | 0.25 |
| BSMD1812-300 | 4.37 | 4.73 | 3.07 | 3.41 | 0.50 | 1.50 | 0.30 | 0.25 |
| BSMD1812-350 | 4.37 | 4.73 | 3.07 | 3.41 | 0.50 | 1.50 | 0.30 | 0.25 |

### Environmental Specifications

| Test                  | Conditions             | Resistance change |
|-----------------------|------------------------|-------------------|
| Passive aging         | 85°C,1000hrs           | ±5% typical       |
| Humidity aging        | 85°C,85%CR.H.,168hrs   | ±5% typical       |
| Thermal shock         | 85°C,to-40°C,13times   | ±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 of the device in the tripped state is 125°C**

**Electrical characteristics(25°C)**

| Model             | Ihold | Itrip | Vmax  | Imax | Pd max | Maximum Current | Time To Trip | Resistance |          |
|-------------------|-------|-------|-------|------|--------|-----------------|--------------|------------|----------|
|                   | (A)   | (A)   | (Vdc) | (A)  | (w)    | (A)             | (S)          | Rmin (Ω)   | Rmax (Ω) |
| BSMD1812-010      | 0.10  | 0.30  | 30    | 100  | 0.8    | 0.5             | 1.5          | 0.750      | 15.000   |
| BSMD1812-014      | 0.14  | 0.34  | 60    | 100  | 0.8    | 1.5             | 0.15         | 0.650      | 6.000    |
| BSMD1812-020      | 0.20  | 0.40  | 30    | 100  | 0.8    | 8.0             | 0.02         | 0.350      | 5.000    |
| BSMD1812-020/60   | 0.20  | 0.40  | 60    | 100  | 0.8    | 8.0             | 0.02         | 0.350      | 5.000    |
| BSMD1812-030      | 0.30  | 0.60  | 30    | 100  | 0.8    | 8.0             | 0.1          | 0.250      | 3.000    |
| BSMD1812-050      | 0.50  | 1.00  | 15    | 100  | 0.8    | 8.0             | 0.15         | 0.150      | 1.000    |
| BSMD1812-050/24   | 0.50  | 1.00  | 24    | 100  | 0.8    | 8.0             | 0.15         | 0.150      | 1.000    |
| BSMD1812-050/30   | 0.50  | 1.00  | 30    | 100  | 0.8    | 8.0             | 0.15         | 0.150      | 1.000    |
| BSMD1812-075      | 0.75  | 1.50  | 13.2  | 100  | 0.8    | 8.0             | 0.2          | 0.090      | 0.450    |
| BSMD1812-075/16   | 0.75  | 1.50  | 16    | 100  | 0.8    | 8.0             | 0.2          | 0.090      | 0.450    |
| BSMD1812-075/24   | 0.75  | 1.50  | 24    | 100  | 0.8    | 8.0             | 0.2          | 0.090      | 0.450    |
| BSMD1812-075/33   | 0.75  | 1.50  | 33    | 100  | 0.8    | 8.0             | 0.3          | 0.090      | 0.450    |
| BSMD1812-110      | 1.10  | 2.20  | 8     | 100  | 0.8    | 8.0             | 0.3          | 0.050      | 0.250    |
| BSMD1812-110/16   | 1.10  | 2.20  | 16    | 100  | 0.8    | 8.0             | 0.3          | 0.050      | 0.250    |
| BSMD1812-110/24   | 1.10  | 2.20  | 24    | 100  | 0.8    | 8.0             | 0.3          | 0.050      | 0.250    |
| BSMD1812-110/33   | 1.10  | 2.20  | 33    | 100  | 0.8    | 8.0             | 0.3          | 0.050      | 0.250    |
| BSMD1812-125      | 1.25  | 2.50  | 16    | 100  | 0.8    | 8.0             | 0.4          | 0.050      | 0.140    |
| BSMD1812-150      | 1.50  | 3.00  | 8     | 100  | 0.8    | 8.0             | 0.5          | 0.040      | 0.160    |
| BSMD1812-150/16   | 1.50  | 3.00  | 16    | 100  | 0.8    | 8.0             | 0.5          | 0.040      | 0.160    |
| BSMD1812-150/24   | 1.50  | 3.00  | 24    | 100  | 0.8    | 8.0             | 0.5          | 0.040      | 0.160    |
| BSMD1812-160      | 1.60  | 2.80  | 8     | 100  | 0.8    | 8.0             | 1.0          | 0.030      | 0.130    |
| BSMD1812-200      | 2.00  | 4.00  | 8     | 100  | 0.8    | 8.0             | 2.0          | 0.020      | 0.100    |
| BSMD1812-200/12   | 2.00  | 4.00  | 12    | 100  | 0.8    | 8.0             | 2.0          | 0.020      | 0.100    |
| BSMD1812-260      | 2.60  | 5.00  | 8     | 100  | 0.8    | 8.0             | 2.5          | 0.015      | 0.050    |
| BSMD1812-260/13.2 | 2.60  | 5.00  | 13.2  | 100  | 0.8    | 8.0             | 2.5          | 0.015      | 0.050    |
| BSMD1812-260/16   | 2.60  | 5.00  | 16    | 100  | 0.8    | 8.0             | 2.5          | 0.015      | 0.050    |
| BSMD1812-300      | 3.00  | 5.00  | 8     | 100  | 0.8    | 8.0             | 4.0          | 0.012      | 0.040    |
| BSMD1812-350      | 3.50  | 6.00  | 6     | 100  | 0.8    | 8.0             | 4.0          | 0.008      | 0.030    |

Ihold Hold Current:Maximum current device will not trip in 25°C still air.  
 Itrip Trip current:Minimum current at which the device will always trip in 25°C still air  
 Vmax Maximum operating volatge device can withstand without damage at ratde current(imax).  
 Imax Maximum fault current device can withstand without damage at rated voltage(Vmax).  
 Pd Typical power dissipatde from device when in the tripped state in 25°C still air.  
 Rmin/max Minimum/Maximum device resistance prior to tripping at 25°C.  
 R1max Maximum resistance of device at 25°C measured one hour after trippde tripping.  
 \*CAUTION Operation beyond the specified rating may result in damage and possible arcing.

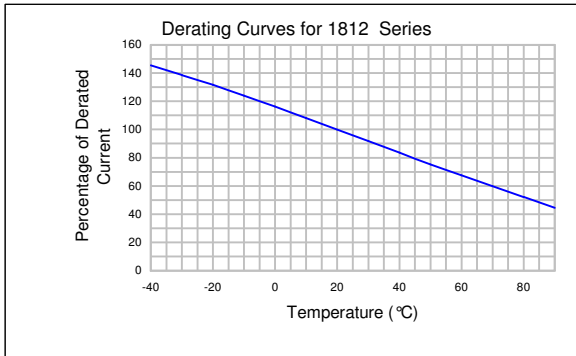
**Ihold versus tempetature**

| Model        | maximun ambient operating temperature(Tmao)vs.hold current(Ihold) |       |       |      |       |      |      |      |       |
|--------------|---|-------|-------|------|-------|------|------|------|-------|
|              | -40°C   | -20°C | 0°C   | 25°C | 40°C  | 50°C | 60°C | 70°C | 85°C  |
| BSMD1812-010 | 0.160   | 0.14  | 0.120 | 0.10 | 0.080 | 0.07 | 0.06 | 0.05 | 0.030 |
| BSMD1812-014 | 0.23  | 0.19  | 0.17  | 0.14 | 0.120 | 0.10 | 0.09 | 0.08 | 0.06  |
| BSMD1812-020 | 0.29  | 0.26  | 0.23  | 0.20 | 0.170 | 0.15 | 0.14 | 0.12 | 0.10  |
| BSMD1812-030 | 0.44  | 0.39  | 0.35  | 0.30 | 0.260 | 0.23 | 0.21 | 0.18 | 0.15  |
| BSMD1812-050 | 0.59  | 0.57  | 0.55  | 0.50 | 0.450 | 0.43 | 0.35 | 0.30 | 0.23  |
| BSMD1812-075 | 1.10  | 0.99  | 0.87  | 0.75 | 0.630 | 0.57 | 0.49 | 0.45 | 0.35  |
| BSMD1812-110 | 1.60  | 1.45  | 1.28  | 1.10 | 0.920 | 0.83 | 0.71 | 0.66 | 0.52  |
| BSMD1812-125 | 2.00  | 1.75  | 1.52  | 1.25 | 1.000 | 0.95 | 0.90 | 0.75 | 0.53  |
| BSMD1812-150 | 2.30  | 2.05  | 1.77  | 1.50 | 1.230 | 1.09 | 0.95 | 0.82 | 0.61  |
| BSMD1812-160 | 2.10  | 1.96  | 1.88  | 1.60 | 1.260 | 1.12 | 0.98 | 0.84 | 0.63  |
| BSMD1812-200 | 2.88  | 2.61  | 2.25  | 2.00 | 1.800 | 1.66 | 1.45 | 1.09 | 0.80  |
| BSMD1812-260 | 3.90  | 3.42  | 2.96  | 2.60 | 2.330 | 2.07 | 1.94 | 1.35 | 1.00  |
| BSMD1812-300 | 4.15  | 3.76  | 3.46  | 3.00 | 2.550 | 2.28 | 2.01 | 1.61 | 1.33  |
| BSMD1812-350 | 4.84  | 4.39  | 4.04  | 3.50 | 2.980 | 2.66 | 2.35 | 1.88 | 1.55  |

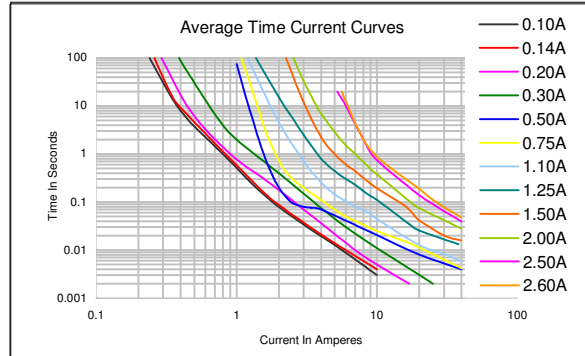
**Termination pad characteristics**

|                            |   |
|----------------------------|---|
| 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. |

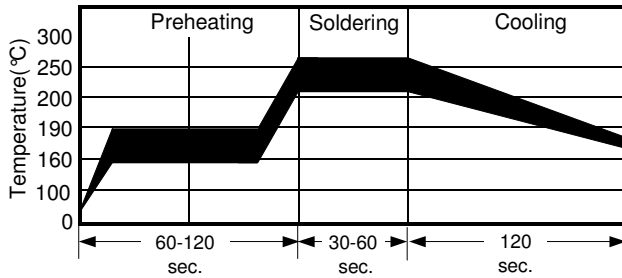
**Thermal Derating Curve**



**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.

**Package Information**

Reel:

|                             |              |
|-----------------------------|--------------|
| BSMD1812-010 ~ BSMD1812-030 | 1500pcs/reel |
| BSMD1812-050 ~ BSMD1812-350 | 2000pcs/reel |