➢ Features

- Size 0.18*0.12 inch /4.5*3.2 mm
- RoHS compliant, lead-free and halogen-free
- Fast response to fault current
- Low resistance
- Low-profile
- Compatible with high temperature solders

➢ Applications

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

➢ Electrical Characteristics（25℃）

Part Number	I_{hold}	I_{trip}	V_{max}	I_{max}	P_d	Time to trip		R_i	R_{1max}
	(A)	(A)	(V)	(A)	(W)	(A)	(Sec)	(Ω)	(Ω)
BSMD1812L-600-12V	6.00	12.00	12	50	2.0	20.00	5.00	0.0008	0.010

I_{hold} = Hold current: maximum current device will pass without tripping in 25℃ still air.
I_{trip} = Trip current: minimum current at which the device will trip in 25℃ still air.
V_{max} = Maximum voltage device can withstand without damage at rated current (Imax)
I_{max} = Maximum fault current device can withstand without damage at rated voltage (Vmax)
$P_{d\ typ.}$ = Typical power dissipated from device when in the tripped state at 25℃ still air.
R_{min} = Minimum resistance of device in initial (un-soldered) state.
R_{1max} = Maximum resistance of device at 25℃ measured one hour after tripping or reflow soldering of 260℃ for 20 sec.
Caution： Operation beyond the specified ratings may result in damage and possible arcing and flame.

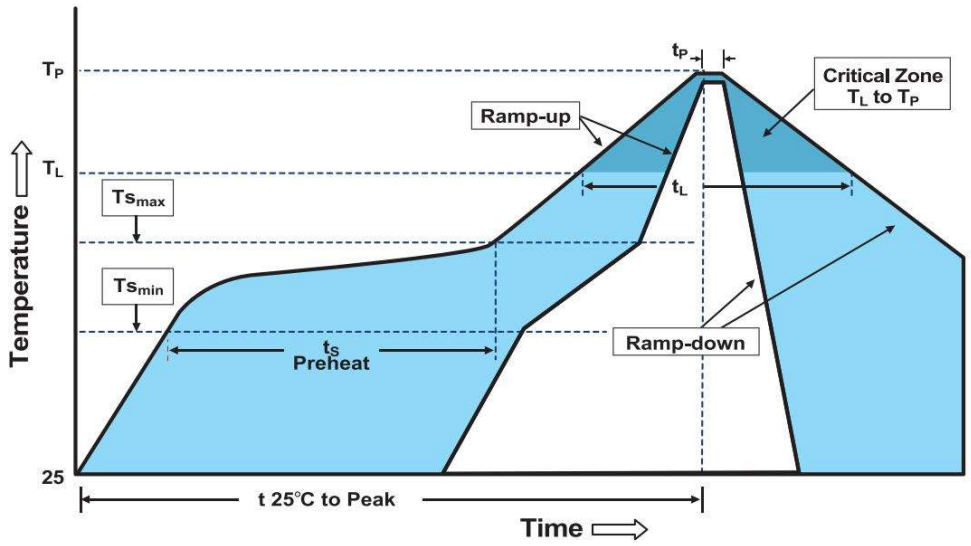
➢ WARNING

- Users shall independently assess the suitability of these devices for each of their applications.
- Operation of these devices beyond the stated maximum ratings could result in damage to the devices and lead to electrical arcing and/or fire.
- These devices are intended to protect against the effects of temporary over-current or over-temperature conditions and are not intended to perform as protective devices where such conditions are expected to be repetitive or prolonged in duration.
- Exposure to silicon-based oils, solvents, electrolytes, acids, and similar materials can adversely affect the performance of these PPTC devices.
- These devices undergo thermal expansion under fault conditions, and thus shall be provided with adequate space and be protected against mechanical stresses.
- Circuits with inductance may generate a voltage (L di/dt) above the rated voltage of the PPTC device.

➢ Thermal Derating Chart

Part Number	Ambient operating temperature hold current(I_{hold})							
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C
BSMD1812L-600-12V	9.0	8.0	7.0	6.0	5.2	4.6	4.2	3.7

➢ Soldering Parameters



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate(Ts_{max} to T_p)	3°C/second max
Preheat **-Temperature Min(Ts_{min})** **-Temperature Max(Ts_{max})** **-Time(Ts_{min} to Ts_{max})**	 150°C 200°C 60~180 seconds
Time maintained above: **-Temperature(T_L)** **-Time(t_L)**	 217°C 60~150 seconds
Peak Temperature(T_p)	260°C
Ramp-Down Rate	6°C/second max
Time 25°C to Peak Temperature	8 minutes max
Storage Condition	0°C~30°C,30%-60%RH

- Recommended reflow methods: IR, vapor phase oven, hot air oven, N2 environment for lead-free.
- Recommended maximum paste thickness is 0.25mm.
- Devices can be cleaned using standard industry methods and solvents.

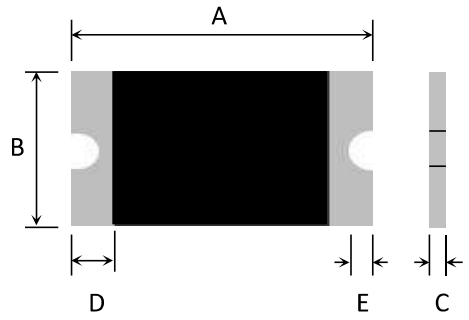
Note 1: All temperature refer to topside of the package, measured on the package body surface.

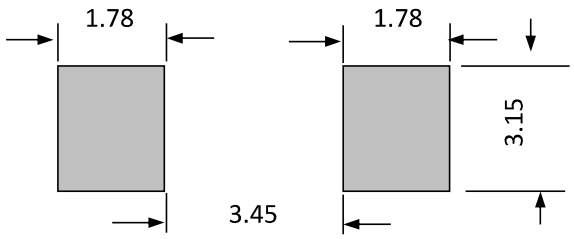
Note 2: If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

➢ 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		

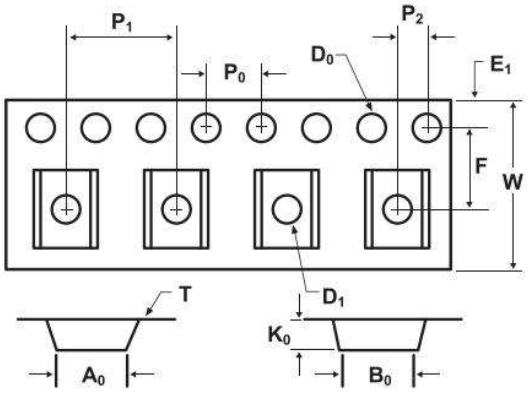
➢ Physical Dimensions & Recommended Pad Layout (mm)





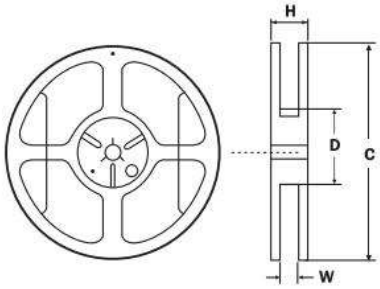
Part Number	Quantity	A		B		C		D	E
		Min	Max	Min	Max	Min	Max	Min	Min
BSMD1812L-600-12V	1500	--	4.80	--	3.50	--	1.30	0.25	0.10

➢ Tape And Reel Specifications (mm)



Governing Specifications	BSMD1812L-600-12V
W	12.0 ± 0.3
F	5.5 ± 0.05
E1	1.75 ± 0.1
D0	1.55 ± 0.05
D1	1.55_{min}
P0	4.0 ± 0.1
P1	8.0 ± 0.1
P2	2.0 ± 0.05
A0	3.58 ± 0.1
B0	4.93 ± 0.1
T	0.2 ± 0.1
K0	0.74 ± 0.1
Leader min	390
Trailer min	160

Reel Dimensions	
C	φ178 ± 1.0
D	φ60.2 ± 0.5
H	16.0 ± 0.5
W	13.2 ± 1.5



➢ Contact information

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