

## ➤ Features

- Size 0.34\*0.25 inch
- RoHS compliant, lead-free and halogen-free
- Fast response to fault current
- Low profile
- High voltage
- Compatible with high temperature solders

## ➤ Applications

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

## ➤ Electrical Characteristics (25°C)

Part Number	$I_{hold}$	$I_{trip}$	$V_{max}$	$I_{max}$	$P_d$ typ	Time to trip		$R_{min}$	$R1_{max}$
	(A)	(A)	(V <sub>dc</sub> )	(A)	(W)	(A)	(Sec)	(Ω)	(Ω)
BSMD3425-200-60V	2.00	4.00	60	20	2.5	8.00	10.0	0.040	0.200
BSMD3425-260-60V	2.60	5.20	60	20	2.5	8.00	10.0	0.020	0.120
BSMD3425-300-36V	3.00	6.00	36	20	2.5	8.00	20.0	0.010	0.060

## ➤ Vocabulary

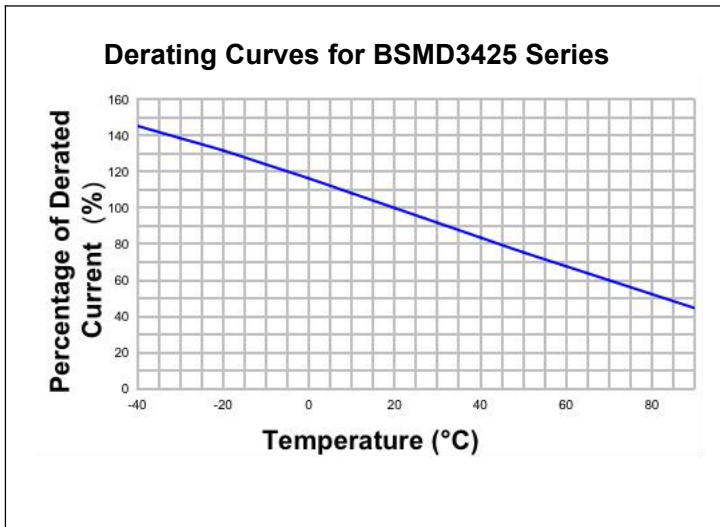
- I<sub>hold</sub>** = Hold current: maximum current device will pass without tripping in 25°C still air.
- I<sub>trip</sub>** = Trip current: minimum current at which the device will trip in 25°C still air.
- V<sub>max</sub>** = Maximum voltage device can withstand without damage at rated current (**I<sub>max</sub>**).
- I<sub>max</sub>** = Maximum fault current device can withstand without damage at rated voltage (**V<sub>max</sub>**).
- P<sub>d typ.</sub>** = Typical power dissipated from device when in the tripped state at 25°C still air.
- R<sub>min</sub>** = Minimum resistance of device in initial (un-soldered) state.
- R<sub>1max</sub>** = Maximum resistance of device at 25°C measured one hour after tripping or reflow soldering of 260°C for 20 sec.

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

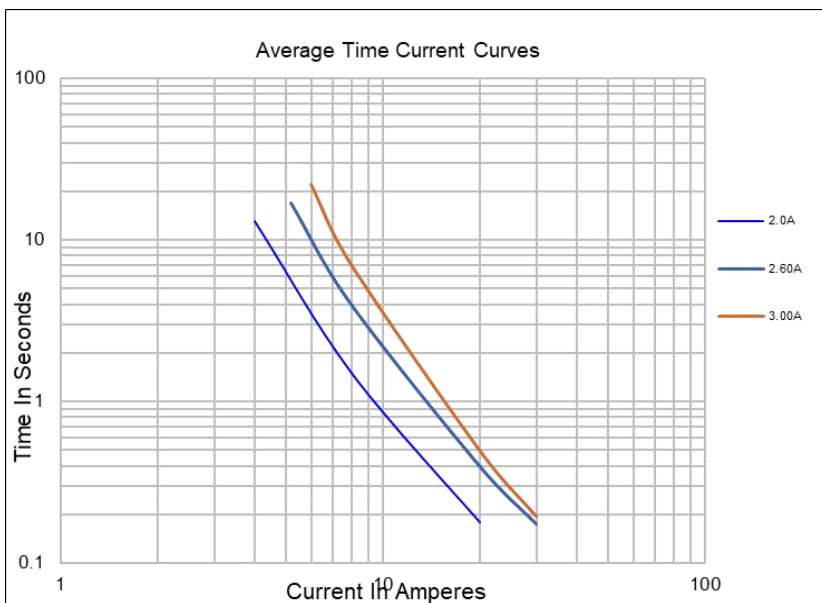
## ➤ Warning

- 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 prolonged 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 Curve



### ➤ Average Time-Current Curve



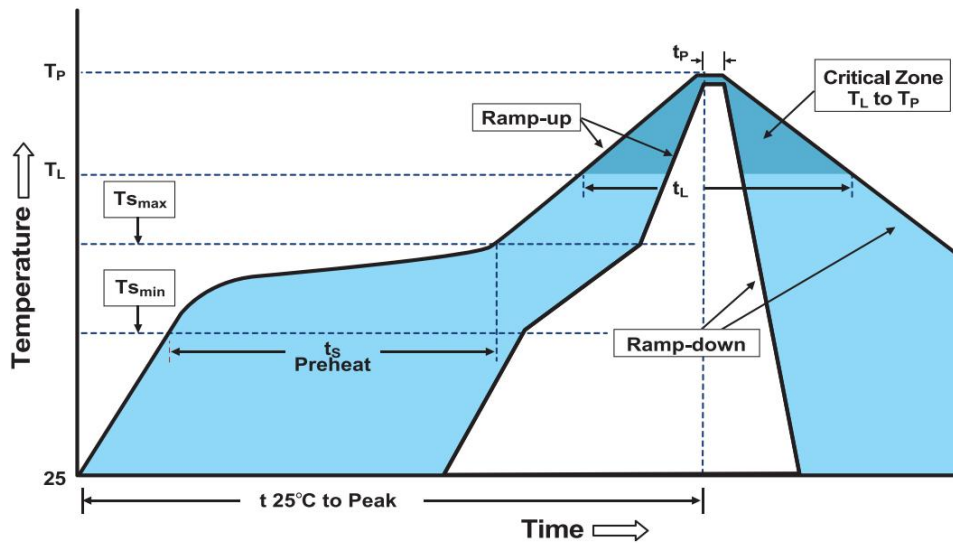
**➤ Thermal Derating Chart**

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	85°C
BSMD3425-200-60V	3.07	2.73	2.39	2.00	1.71	1.54	1.37	1.20	0.95
BSMD3425-260-60V	4.01	3.56	3.12	2.60	2.22	2.00	1.77	1.55	1.21
BSMD3425-300-36V	4.43	3.98	3.52	3.00	2.61	2.39	2.16	1.93	1.59

**➤ Environmental Specifications**

Test	Conditions	Resistance change
Passive aging	+85°C, 1000 hours	±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		

## ➤ Soldering Parameters



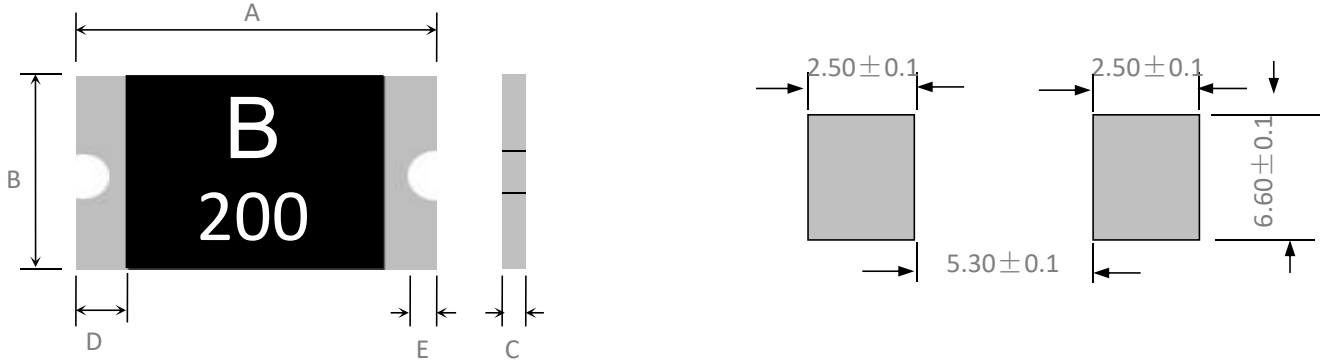
Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate( $T_{s_{max}}$ to $T_p$ )	3°C/second max
Preheat -Temperature Min( $T_{s_{min}}$ ) -Temperature Max( $T_{s_{max}}$ ) -Time( $T_{s_{min}}$ to $T_{s_{max}}$ )	150°C 200°C 60~180 seconds
Time maintained above: -Temperature( $T_L$ ) -Time( $t_L$ )	217°C 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, N<sub>2</sub> 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.

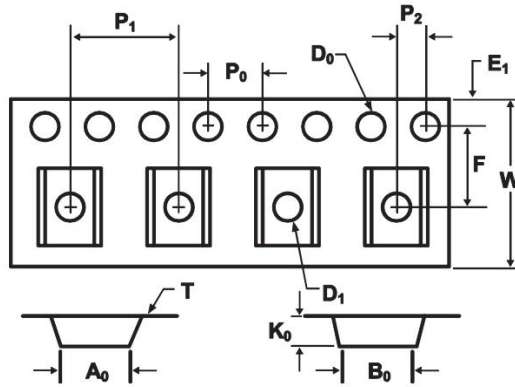
**Note 2:** If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

➤ **Physical Dimensions & Recommended Pad Layout (mm)**



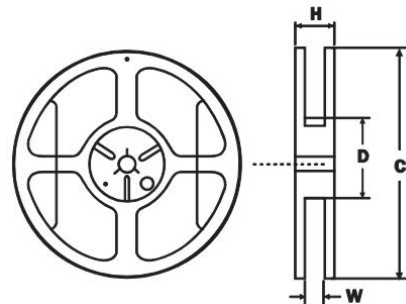
Part Number	Marking	Quantity	A		B		C		D	E
			Min	Max	Min	Max	Min	Max	Min	Min
BSMD3425-200-60V	B200	1500	8.30	9.00	6.00	6.70	1.00	2.00	0.30	0.25
BSMD3425-260-60V	B260	1500	8.30	9.00	6.00	6.70	1.00	2.00	0.30	0.25
BSMD3425-300-36V	B300	1500	8.30	9.00	6.00	6.70	1.00	2.00	0.30	0.25

➤ **Tape And Reel Specifications (mm)**



Governing Specifications	BSMD3425-200-60V BSMD3425-260-60V BSMD3425-300-36V
W	16.0 ± 0.3
F	7.5 ± 0.05
E1	1.75 ± 0.1
D0	1.50 ± 0.05
D1	1.55 <sub>min</sub>
P0	4.0 ± 0.1
P1	8.0 ± 0.1
P2	2.0 ± 0.05
A0	7.0 ± 0.1
B0	9.5 ± 0.1
T	0.6
K0	2.2
Leader <sub>min</sub>	390
Trailer <sub>min</sub>	160

Reel Dimensions	
C	φ180 ± 3.0
D	φ60.2 ± 0.5
H	22.4 ± 1.0
W	16.4 ± 0.2



➤ **Contact information**

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