

## ➤ Features

- 16Vdc max voltage
- RoHS compliant, lead-free and halogen-free
- Resettable feature
- Ideal for a broad range of general electronics using a low voltage power supply

## ➤ Applications

- Load protection on wide range of low voltage power supplies
- Computers, Computers peripherals
- General electronics

## ➤ Electrical Characteristics (25°C)

Part Number	$I_{hold}$	$I_{trip}$	$V_{max}$	$I_{max}$	$P_{d\ typ}$	Time to trip		$R_{i\ min}$	$R_{1\ max}$
	(A)	(A)	(V <sub>dc</sub> )	(A)	(W)	(A)	(Sec)	(Ω)	(Ω)
BH16-030	0.30	0.60	16	40	1.0	1.50	5.0	0.300	0.900
BH16-050	0.50	1.00	16	40	1.0	2.50	5.0	0.200	0.750
BH16-065	0.65	1.30	16	40	1.0	3.25	5.0	0.120	0.270
BH16-075	0.75	1.50	16	40	1.0	3.75	5.0	0.100	0.255
BH16-090	0.90	1.80	16	40	1.0	4.50	5.0	0.090	0.240
BH16-100	1.00	2.00	16	40	1.0	5.00	5.0	0.070	0.225
BH16-110	1.10	2.20	16	40	1.0	5.50	5.0	0.080	0.225
BH16-120	1.20	2.40	16	40	1.0	6.00	5.0	0.070	0.225
BH16-135	1.35	2.70	16	40	1.3	6.75	5.0	0.040	0.180
BH16-160	1.60	3.20	16	40	1.5	8.00	10.0	0.030	0.105
BH16-185	1.85	3.70	16	40	2.0	9.25	10.0	0.030	0.135
BH16-200	2.00	4.00	16	40	2.0	10.0	10.0	0.030	0.075
BH16-250	2.50	5.00	16	40	2.5	12.5	5.0	0.020	0.075
BH16-300	3.00	6.00	16	100	2.5	15.0	2.0	0.038	0.105
BH16-400	4.00	8.00	16	100	2.8	20.0	3.5	0.021	0.060
BH16-500	5.00	10.0	16	100	3.0	25.0	3.6	0.015	0.038
BH16-600	6.00	12.0	16	100	3.2	30.0	5.8	0.010	0.030
BH16-700	7.00	14.0	16	100	3.5	35.0	8.0	0.008	0.023
BH16-800	8.00	16.0	16	100	3.5	40.0	9.0	0.006	0.018
BH16-900	9.00	18.0	16	100	3.8	45.0	12.0	0.005	0.017
BH16-1000	10.0	20.0	16	100	4.0	50.0	12.5	0.004	0.014
BH16-1100	11.0	22.0	16	100	4.0	55.0	13.5	0.004	0.012

Part Number	$I_{hold}$	$I_{trip}$	$V_{max}$	$I_{max}$	$P_{d\ typ}$	Time to trip		$R_{i\ min}$	$R_{1\ max}$
	(A)	(A)	(V <sub>dc</sub> )	(A)	(W)	(A)	(Sec)	( $\Omega$ )	( $\Omega$ )
BH16-1200	12.0	24.0	16	100	4.2	60.0	16.0	0.004	0.011
BH16-1400	14.0	28.0	16	100	4.8	70.0	20.0	0.003	0.008
BH16-1500	15.0	30.0	16	100	5.0	75.0	20.0	0.003	0.008

## ➤ Vocabulary

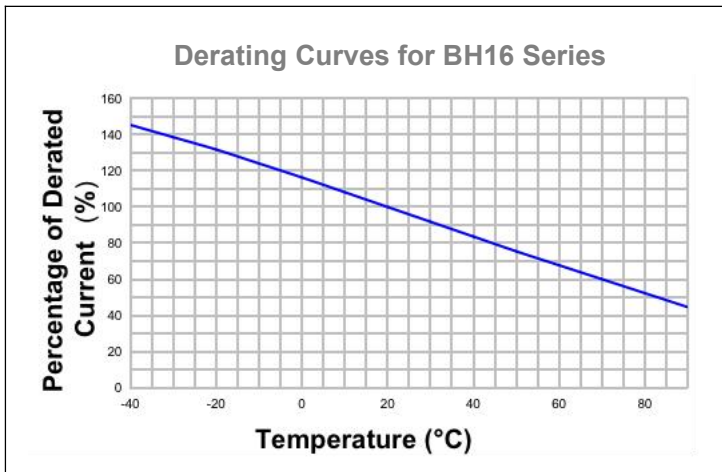
- $I_{hold}$  = Hold current: maximum current device will pass without tripping in 25°C still air.
- $I_{trip}$  = Trip current: minimum current at which the device will trip in 25°C still air.
- $V_{max}$  = Maximum voltage device can withstand without damage at rated current ( $I_{max}$ ).
- $I_{max}$  = Maximum fault current device can withstand without damage at rated voltage ( $V_{max}$ ).
- $P_{d\ typ.}$  = Typical power dissipated from device when in the tripped state at 25°C still air.
- $R_{min}$  = Minimum resistance of device in initial (un-soldered) state.
- $R_{1\ max}$  = 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.**

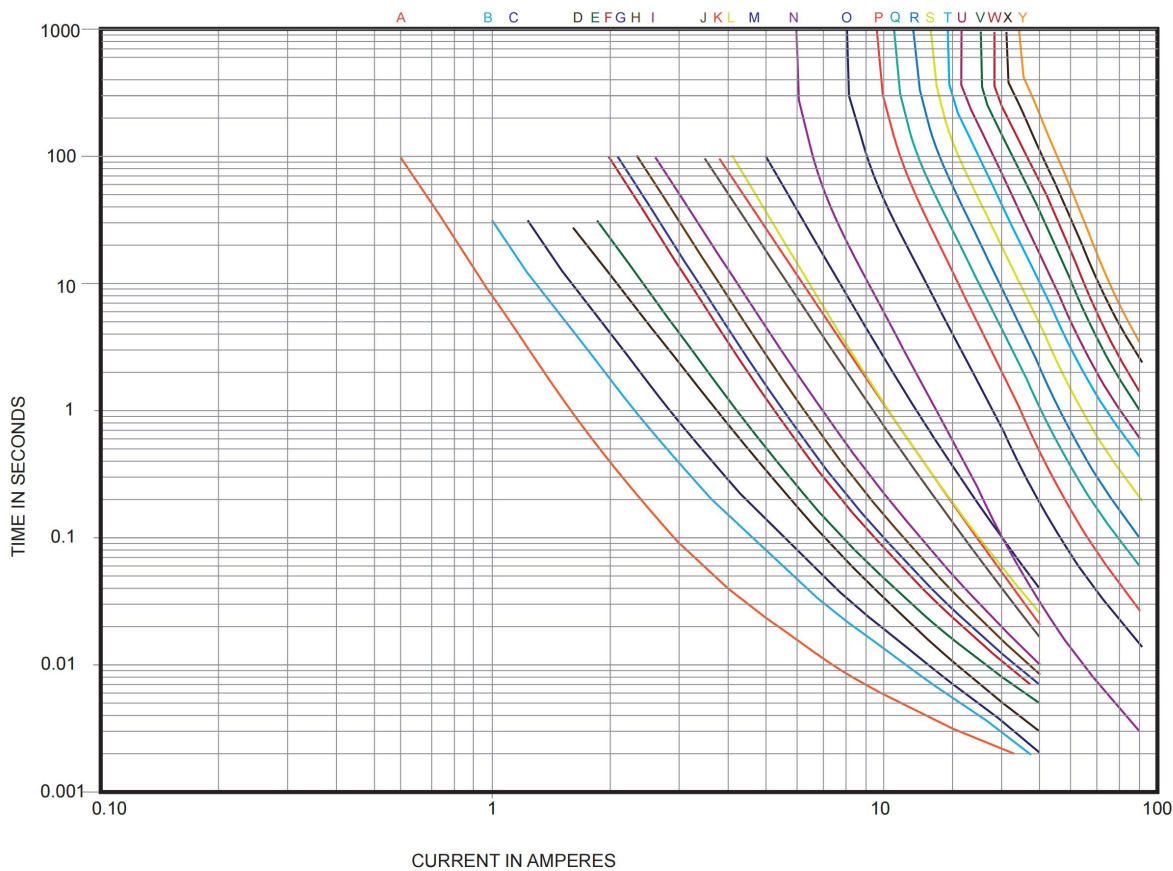
## ➤ Warning

- 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



- A=BH16-030
- B=BH16-050
- C=BH16-065
- D=BH16-075
- E=BH16-090
- F=BH16-100
- G=BH16-110
- H=BH16-120
- I=BH16-135
- J=BH16-160
- K=BH16-185
- L=BH16-200
- M=BH16-250
- N=BH16-300
- O=BH16-400
- P=BH16-500
- Q=BH16-600
- R=BH16-700
- S=BH16-800
- T=BH16-900
- U=BH16-1000
- V=BH16-1100
- W=BH16-1200
- X=BH16-1400
- Y=BH16-1500

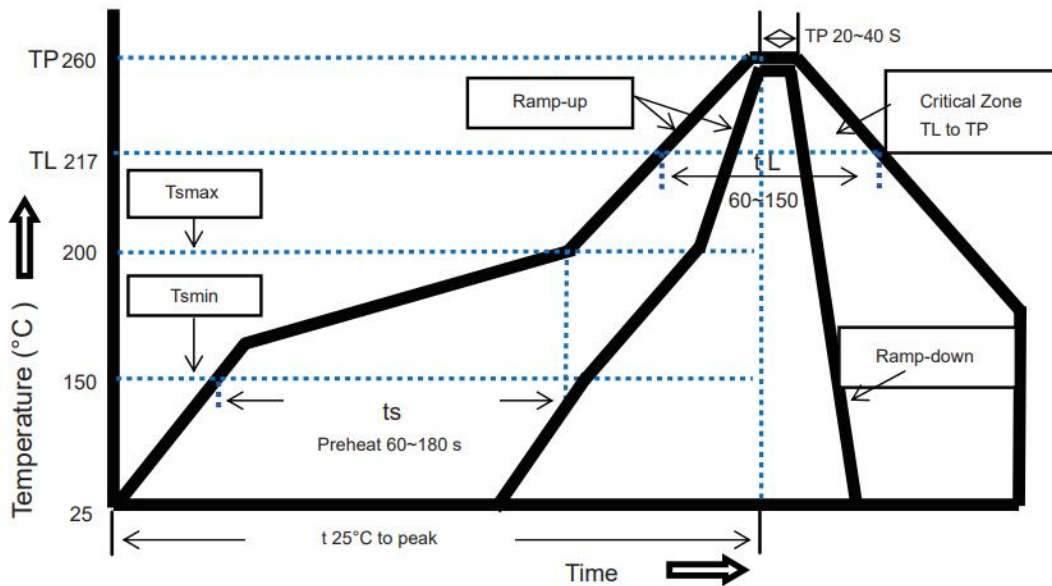
## ➤ Thermal Derating Chart

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
BH16-030	0.444	0.396	0.348	0.300	0.252	0.228	0.207	0.183	0.144
BH16-050	0.740	0.660	0.580	0.500	0.420	0.380	0.345	0.300	0.240
BH16-065	0.962	0.858	0.754	0.650	0.546	0.494	0.449	0.390	0.312
BH16-075	1.110	0.990	0.870	0.750	0.630	0.570	0.518	0.450	0.360
BH16-090	1.332	1.188	1.044	0.900	0.756	0.684	0.621	0.540	0.432
BH16-100	1.480	1.320	1.160	1.000	0.840	0.760	0.690	0.600	0.480
BH16-110	1.628	1.452	1.276	1.100	0.924	0.836	0.759	0.660	0.528
BH16-120	1.776	1.584	1.392	1.200	1.008	0.912	0.828	0.720	0.576
BH16-135	1.998	1.782	1.566	1.350	1.134	1.026	0.932	0.810	0.648
BH16-160	2.368	2.112	1.856	1.600	1.344	1.216	1.104	0.960	0.768
BH16-185	2.738	2.442	2.146	1.850	1.554	1.406	1.277	1.110	0.888
BH16-200	2.960	2.640	2.320	2.000	1.680	1.520	1.380	1.200	0.960
BH16-250	3.700	3.300	2.900	2.500	2.100	1.900	1.725	1.500	1.200
BH16-300	4.440	3.960	3.480	3.000	2.520	2.280	2.070	1.800	1.440
BH16-400	5.920	5.280	4.640	4.000	3.360	3.040	2.760	2.400	1.920
BH16-500	7.400	6.600	5.800	5.000	4.200	3.800	3.450	3.000	2.400
BH16-600	8.880	7.920	6.960	6.000	5.040	4.560	4.140	3.600	2.880
BH16-700	10.36	9.240	8.120	7.000	5.880	5.320	4.830	4.200	3.360
BH16-800	11.84	10.56	9.280	8.000	6.720	6.080	5.520	4.800	3.840
BH16-900	13.32	11.88	10.44	9.000	7.560	6.840	6.210	5.400	4.320
BH16-1000	14.80	13.20	11.60	10.00	8.400	7.600	6.900	6.000	4.800
BH16-1100	16.28	14.52	12.76	11.00	9.240	8.360	7.590	6.600	5.280
BH16-1200	17.76	15.84	13.92	12.00	10.08	9.120	8.280	7.200	5.760
BH16-1400	20.72	18.48	16.24	14.00	11.76	10.64	9.660	8.400	6.720
BH16-1500	22.20	19.80	17.40	15.00	12.60	11.40	10.35	9.000	7.500

## ➤ 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( $T_{smax}$ to $T_p$ )	3°C/second max
Preheat	
-Temperature Min( $T_{smin}$ )	150°C
-Temperature Max( $T_{smax}$ )	200°C
-Time( $T_{smin}$ to $T_{smax}$ )	60~180 seconds
Time maintained above:	
-Temperature( $T_L$ )	217°C
-Time( $t_L$ )	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)**

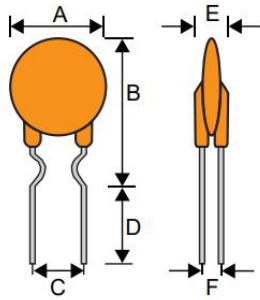


FIG 1

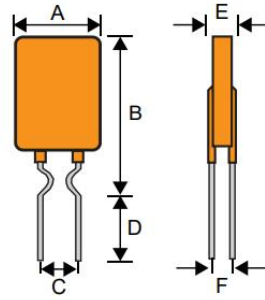


FIG 2

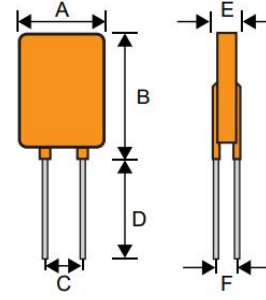


FIG 3

Part Number	Quantity	A	B	C	D	E	F	Lead	
		Max	Max	Typ	Min	Max	Typ	φ	FIG
BH16-030	500	7.4	13.0	5.1±0.5	7.6	3.0	0.8	0.5	1
BH16-050	500	7.4	13.0	5.1±0.5	7.6	3.0	0.8	0.5	1
BH16-065	500	7.4	13.0	5.1±0.5	7.6	3.0	0.8	0.5	1
BH16-075	500	7.4	13.0	5.1±0.5	7.6	3.0	0.8	0.5	1
BH16-090	500	7.4	14.4	5.1±0.5	7.6	3.0	0.8	0.5	2
BH16-100	500	7.4	13.0	5.1±0.5	7.6	3.0	0.8	0.5	1
BH16-110	500	7.4	14.4	5.1±0.5	7.6	3.0	0.8	0.5	2
BH16-120	500	7.4	14.4	5.1±0.5	7.6	3.0	0.8	0.5	2
BH16-135	500	8.9	15.9	5.1±0.5	7.6	3.0	0.9	0.6	2
BH16-160	500	8.9	19.0	5.1±0.5	7.6	3.0	0.9	0.6	2
BH16-185	500	10.7	19.0	5.1±0.5	7.6	3.0	0.9	0.6	2
BH16-200	500	11.2	17.0	5.1±0.5	7.6	3.0	0.9	0.6	1
BH16-250	500	8.9	19.0	5.1±0.5	7.6	3.0	0.9	0.6	2
BH16-300	500	7.1	11.5	5.1±0.5	7.6	3.0	1.2	0.8	3
BH16-400	500	8.9	13.5	5.1±0.5	7.6	3.0	1.2	0.8	3
BH16-500	500	10.5	15.1	5.1±0.5	7.6	3.0	1.2	0.8	3
BH16-600	500	11.0	17.8	5.1±0.5	7.6	3.0	1.2	0.8	3
BH16-700	500	11.2	20.2	5.1±0.5	7.6	3.0	1.2	0.8	3
BH16-800	500	14.0	22.5	5.1±0.5	7.6	3.0	1.2	0.8	3
BH16-900	500	14.0	22.5	5.1±0.5	7.6	3.0	1.2	0.8	3
BH16-1000	500	16.5	26.7	5.1±0.5	7.6	3.0	1.2	0.8	3
BH16-1100	500	18.0	28.0	5.1±0.5	7.6	3.0	1.2	0.8	3
BH16-1200	500	18.0	28.0	5.1±0.5	7.6	3.5	1.4	0.8	3
BH16-1400	500	25.0	30.5	10.2±0.5	7.6	3.5	1.4	0.8	3
BH16-1500	500	25.0	30.5	10.2±0.5	7.6	3.5	1.4	0.8	3

➤ **Contact information**

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