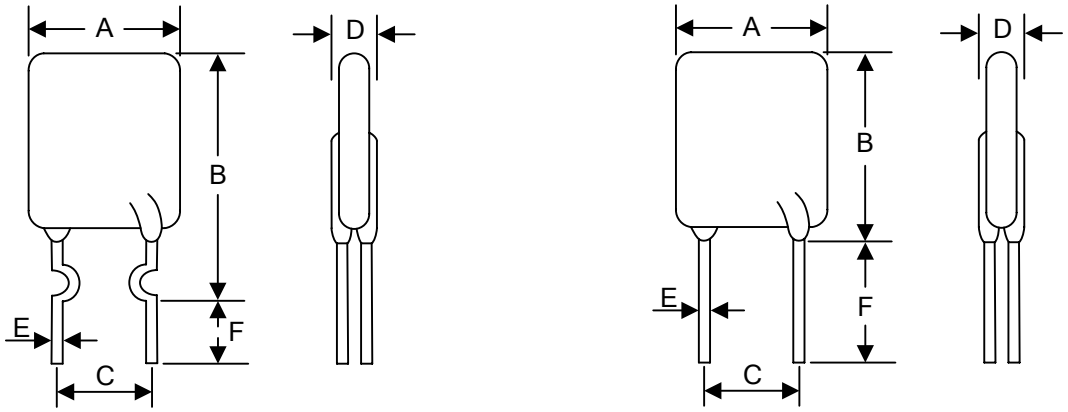
Positive Temperature Coefficient (PTC) Data Sheet

Features



- Radial leaded devices.
- Over-current protection
- Flame retardant epoxy polymer insulating material meets UL94 V-0 requirement.
- Available in lead-free version.
- Meets MSL level 1, per J-STD-020
- Safety certification: UL: E244500

Dimensions (Unit: mm)



Part Number	A	B	C	D	E	F	Style.
	Max.	Max.	±0.6	Max.	Typ.	Min.	
BK30-090	7.4	14.5 / 14.2	5.1	3.1	0.5	4.6 / 7.6	SI / SZ
BK30-110	7.4	17.8 / 14.2	5.1	3.1	0.5	4.6 / 7.6	SI / SZ
BK30-135	9.2	15.8	5.1	3.1	0.5	4.6	SI
BK30-160	9.5	16.5	5.1	3.1	0.5	4.6	SI
BK30-185	9.8	18.6	5.1	3.1	0.5	4.6	SI
BK30-200	11.0	17.2	5.1	3.1	0.5	4.6	SI
BK30-250	13.2	20.5	5.1	3.1	0.5	4.6	SI
BK30-300	13.2	17.3	5.1	3.1	0.8	7.6	SZ
BK30-400	14.0	20.1	5.1	3.1	0.8	7.6	SZ
BK30-500	14.0	20.1	10.5	3.1	0.8	7.6	SZ
BK30-600	17.5	24.9	10.5	3.1	0.8	7.6	SZ
BK30-700	17.5	24.9	10.5	3.1	0.8	7.6	SZ
BK30-800	23.5	29.2	10.5	3.1	0.8	7.6	SZ
BK30-900	24.3	29.7	10.5	3.1	0.8	7.6	SZ

Electrical Characteristics

Part Number	I_H	I_T	V_{MAX}	I_{MAX}	R_{MAX}	R_{MIN}	$Pd_{typ.}$
	(A)	(A)	(V_{DC})	(A)	(Ω)	(Ω)	(W)
BK30-090	0.90	1.80	30	40	0.220	0.090	0.60
BK30-110	1.10	2.20	30	40	0.200	0.070	0.70
BK30-135	1.35	2.70	30	40	0.160	0.055	0.80
BK30-160	1.60	3.20	30	40	0.140	0.045	0.90
BK30-185	1.85	3.70	30	40	0.120	0.035	1.00
BK30-200	2.00	4.00	30	40	0.100	0.040	1.20
BK30-250	2.50	5.00	30	40	0.080	0.027	1.20
BK30-300	3.00	6.00	30	40	0.070	0.022	2.00
BK30-400	4.00	8.00	30	40	0.060	0.010	2.50
BK30-500	5.00	10.00	30	40	0.050	0.010	3.00
BK30-600	6.00	12.00	30	40	0.040	0.005	3.50
BK30-700	7.00	14.00	30	40	0.030	0.005	3.80
BK30-800	8.00	16.00	30	40	0.025	0.005	4.00
BK30-900	9.00	18.00	30	40	0.020	0.005	4.20

- I_H = Hold current: maximum current device will pass without tripping in 25℃ still air.
- I_T = 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.
- I_{MAX} = Maximum fault current device can withstand without damage at rated voltage.
- R_{MAX} = Maximum resistance of device in initial (un-soldered) state.
- R_{MIN} = Minimum resistance of device in initial (un-soldered) state.
- $Pd_{typ.}$ = Typical power dissipation from device when in the tripped state at 25℃ still air.

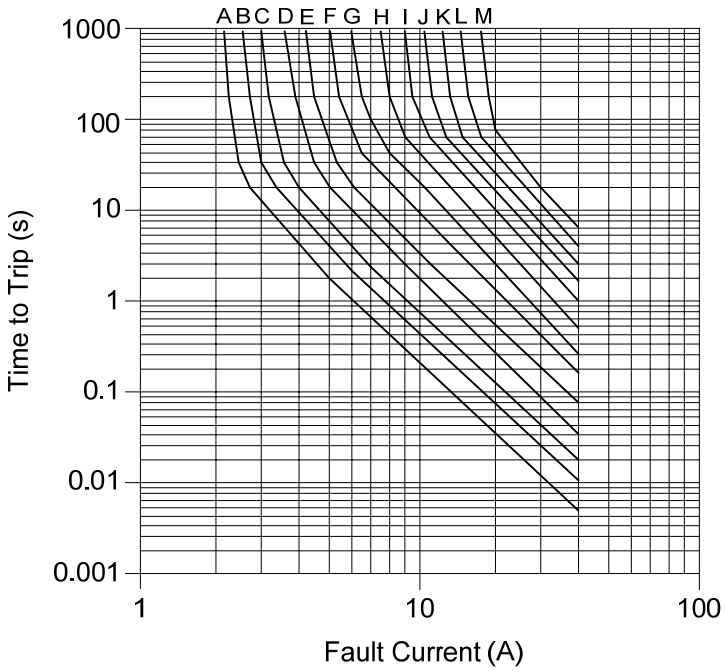
Thermal Derating Chart – I_H (A)

Part Number	Maximum Ambient Operating Temperatures (℃)								
	-20	0	25	30	40	50	60	70	85
BK30-090	1.17	1.04	0.90	0.82	0.75	0.69	0.61	0.55	0.47
BK30-110	1.43	1.27	1.10	1.00	0.91	0.85	0.75	0.67	0.57
BK30-135	1.76	1.55	1.35	1.23	1.12	1.04	0.92	0.82	0.70
BK30-160	2.08	1.84	1.60	1.46	1.33	1.23	1.09	0.98	0.83
BK30-185	2.41	2.13	1.85	1.68	1.54	1.42	1.26	1.13	0.96
BK30-200	2.60	2.30	2.00	1.82	1.66	1.54	1.36	1.22	1.04
BK30-250	3.25	2.88	2.50	2.28	2.08	1.93	1.70	1.53	1.30
BK30-300	3.90	3.45	3.00	2.73	2.49	2.31	2.04	1.83	1.56
BK30-400	5.20	4.60	4.00	3.64	3.32	3.08	2.72	2.44	2.08
BK30-500	6.50	5.75	5.00	4.55	4.15	3.85	3.40	3.05	2.60
BK30-600	7.80	6.90	6.00	5.46	4.98	4.62	4.08	3.66	3.12
BK30-700	9.10	8.05	7.00	6.37	5.81	5.39	4.76	4.27	3.64
BK30-800	10.40	9.20	8.00	7.28	6.64	6.16	5.44	4.88	4.16
BK30-900	11.70	10.35	9.00	8.19	7.47	6.93	6.12	5.49	4.68

Test Procedures and Requirement

Items	Test Conditions	Accept/Reject Criteria
Resistance	In still air @25℃	$R_{min} \le R \le R_{max}$
Time to Trip	Specified current, V_{max}, 25℃	T ≤ max. Time to trip (T_{trip})
Hold Current	30 min, at I_H	No trip
Trip Cycle Life	V_{max}, I_{max}, 100 cycles	No arcing or burning
Trip Endurance	V_{max}, 24hours	No arcing or burning

Typical Time-to-Trip Charts @25℃

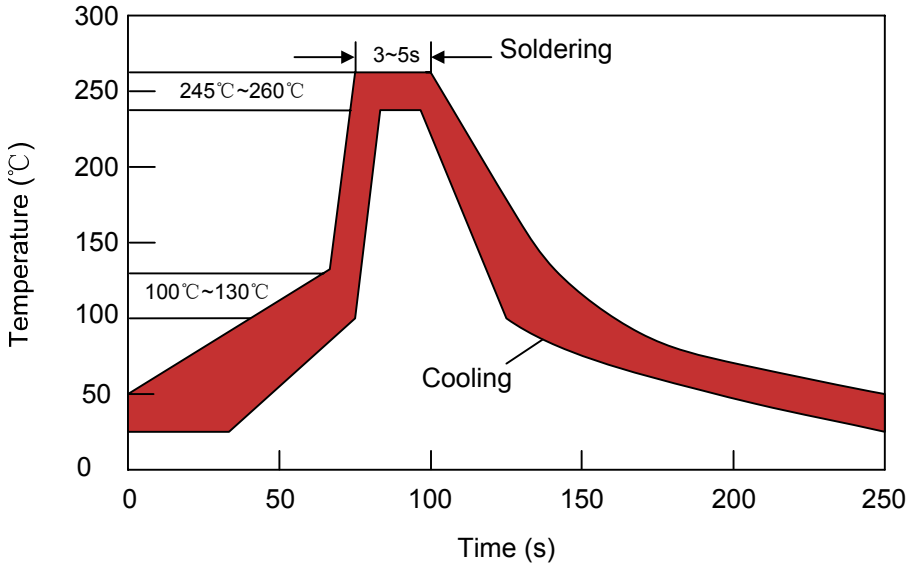


A=BK30-090
B=BK30-110
C=BK30-135
D=BK30-160
E=BK30-185
F=BK30-250
G=BK30-300
H=BK30-400
I=BK30-500
J=BK30-600
K=BK30-700
L=BK30-800
M=BK30-900

Storage Recommendations

- Storage Temperature: -10℃~+40℃
- Relative Humidity: ≤80%RH
- Keep away from corrosive atmosphere and sunlight.
- Period of Storage: 1 year.

Wave Soldering Recommendation Parameters



Items	Conditions
Pre-Heating Zone	Refer to the condition recommended by the flux manufacturer. Maximum ramping rate should not exceed 4℃/sec.
Soldering Zone	Maximum solder temperature should not exceed 260℃
Cooling Zone	Forced cooling

Manual Soldering Recommendation Parameters

Items	Conditions
Soldering condition	The highest power of the manual soldering iron should be 30W or less, soldering temperature should not be higher than 280℃.
Soldering time	The soldering time should be kept within 3 seconds, otherwise it might cause insulation layer cracking, and increased part resistance.
Soldering position	The distance on the leads between the soldering point and bottom of the PPTC body should be equal or greater than 4mm.
Other	The soldering iron should not contact the PPTC body except the leads. If the soldering conditions are kept to lower temperature, less time and larger distance, the outcome of the soldering will be better.

Notes: 1. Before using the device must be stored in the original bags, if the storage conditions do not guarantee, the device may not be able to meet the given value.

2. The devices can't used for reflow soldering.

Mechanical Characteristics

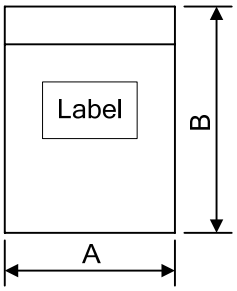
Items	Specifications	Test Conditions/Methods
Tensile strength	No visible damage	1.0Kgf, 10 seconds
Bending strength	No visible damage	0.5Kgf, 90° , 3 times
Vibration	No visible damage	Freq: 10-55Hz, Amp: 0.75mm, 1min

Reliability Test

Items	Specifications	Test Conditions/Methods
Solder ability	No visible damage，Solder OK, Solder area ≥95%	245±5℃, 2±1s, dipping depth=0.5inch max from the body
Resistance to soldering heat	No visible damage, Electrical OK, |△R/R0| ≦50%	260±5℃, 10+2/-0s
Damp heat, steady state	No visible damage, Electrical OK, |△R/R0| ≦20%	40±2℃, 90~95 % RH, total 48Hrs, after 4Hrs test electrical parameter
Temperature cycling	No visible damage, Electrical OK, |△R/R0| ≦20%	Ta＝-10+0/-1℃ 30min, Ta＝70+1/-0℃ 30min, 5cycles, after 1hr test electrical parameter

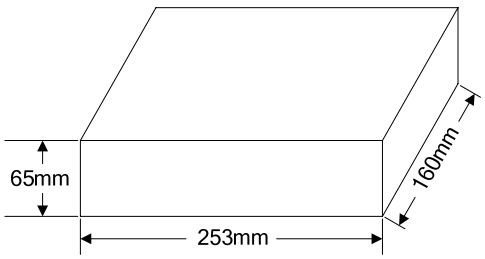
Packaging

Bag



Part Number	Dimension A×B (mm)	Quantity
BK30-090	120×150	1000pcs/bag 4000pcs/box
BK30-110		
BK30-135		
BK30-160	150×200	
BK30-185		
BK30-200		

Inner Box



BK30-250	150×200	500pcs/bag 2000pcs/box
BK30-300	120×150	
BK30-400	150×200	
BK30-500		
BK30-600	150×200	200pcs/bag 800pcs/box
BK30-700		
BK30-800		
BK30-900		

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