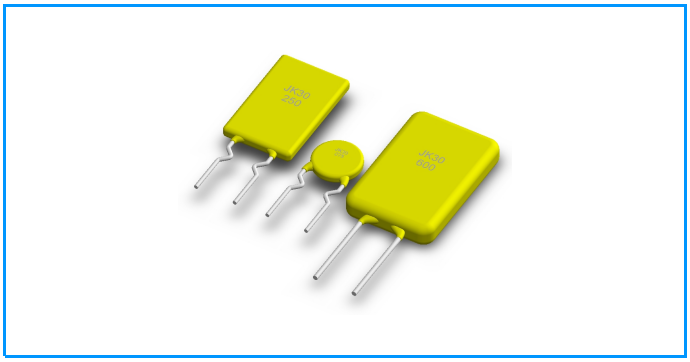
Radial Lead Resettable Polymer PTCs

JK30 Series

Description

JK30 series radial leaded PTCs are designed to provide over-current protection for low voltage (≤30V) applications where space is not a concern and resettable protection is preferred.



Features

- Cured, flame retardant epoxy polymer meets UL 94V-0 requirements
- 30V operating voltage
- Fast time-to-trip
- RoHS compliant, Lead-Free and Halogen-Free

Applicable

- Computers and peripherals
- Power ports
- Motor protection
- Automotive application
- USB hubs ,ports and peripherals
- General electronics

Electrical Parameters

Part Number	I_{hold} (A)	I_{trip} (A)	V_{max} (Vdc)	I_{max} (A)	$P_{dtyp.}$ (W)	Maximum Time To Trip		Resistance		
						Current (A)	Time (Sec.)	R_{min} (mΩ)	R_{max} (mΩ)	R_{1max} (mΩ)
JK30-075	0.75	1.5	30	40	0.6	3.75	7.00	200	370	620
JK30-090	0.90	1.8	30	40	0.7	4.50	7.10	130	220	300
JK30-110	1.10	2.2	30	40	0.7	5.50	6.60	90	200	260
JK30-135	1.35	2.7	30	40	0.8	6.75	8.00	70	160	220
JK30-160	1.60	3.2	30	40	0.9	8.00	8.70	60	140	200
JK30-185	1.85	3.7	30	40	1.0	9.25	8.00	50	120	200
JK30-200	2.00	4.0	30	40	1.2	10.0	11.0	40	100	160
JK30-250	2.5	5.0	30	40	1.2	12.5	10.3	30	80	140
JK30-300	3.0	6.0	30	100	2.0	15.0	10.8	30	70	140
JK30-400	4.0	8.0	30	100	2.5	20.0	12.7	10	60	120
JK30-500	5.0	10.0	30	100	3.0	25.0	14.5	10	50	90
JK30-600	6.0	12.0	30	100	3.5	30.0	16.0	5	40	70
JK30-700	7.0	14.0	30	100	3.8	35.0	17.5	5	30	60
JK30-800	8.0	16.0	30	100	4.0	40.0	18.8	5	25	45
JK30-900	9.0	18.0	30	100	4.2	45.0	20.0	5	20	35

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})
$P_{dtyp.}$= 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_{max}= Maximum resistance of device in initial (un-soldered) state.
R_{1max}= Maximum resistance of device at 25°C measured one hour after tripping.
Caution: Operation beyond the specified rating may result in damage and possible arcing and flame.

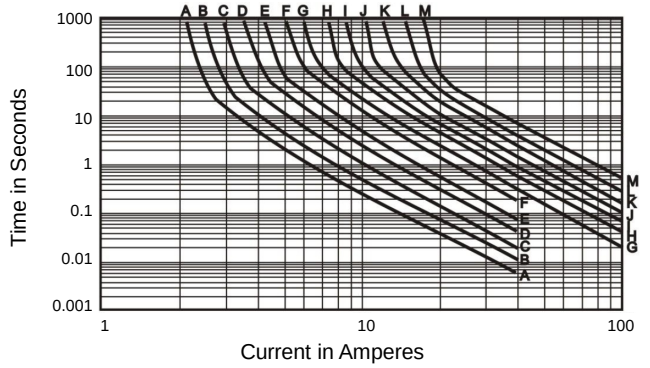
Radial Lead Resettable Polymer PTCs

JK30 Series

Temperature Rerating Chart – I_{hold} (A)

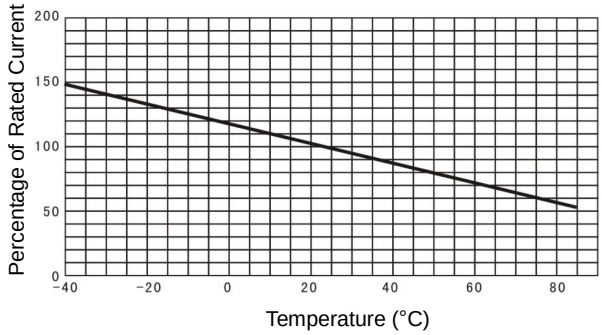
Part Number	Ambient Operation Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
	Hold Current (A)								
JK30-075	1.09	0.98	0.86	0.75	0.62	0.58	0.51	0.46	0.39
JK30-090	1.31	1.17	1.04	0.90	0.75	0.69	0.61	0.55	0.47
JK30-110	1.60	1.43	1.27	1.10	0.91	0.85	0.75	0.67	0.57
JK30-135	1.96	1.76	1.55	1.35	1.12	1.04	0.92	0.82	0.70
JK30-160	2.32	2.08	1.84	1.60	1.33	1.23	1.09	0.98	0.83
JK30-185	2.68	2.41	2.13	1.85	1.54	1.42	1.26	1.13	0.96
JK30-200	2.90	2.60	2.30	2.00	1.66	1.54	1.36	1.22	1.04
JK30-250	3.63	3.25	2.88	2.50	2.08	1.93	1.70	1.53	1.30
JK30-300	4.35	3.90	3.45	3.00	2.49	2.31	2.04	1.83	1.56
JK30-400	5.80	5.20	4.60	4.00	3.32	3.08	2.72	2.44	2.08
JK30-500	7.25	6.50	5.75	5.00	4.15	3.85	3.40	3.05	2.60
JK30-600	8.70	7.80	6.90	6.00	4.98	4.62	4.08	3.66	3.12
JK30-700	10.15	9.10	8.05	7.00	5.81	5.39	4.76	4.27	3.64
JK30-800	11.60	10.40	9.20	8.00	6.64	6.16	5.44	4.88	4.16
JK30-900	13.05	11.70	10.35	9.00	7.47	6.93	6.12	5.49	4.68

Average Time Current Curves



A=JK30-090
B=JK30-110
C=JK30-135
D=JK30-160
E=JK30-185
F=JK30-250
G=JK30-300
H=JK30-400
I=JK30-500
J=JK30-600
K=JK30-700
L=JK30-800
M=JK30-900

Temperature Rerating Curve



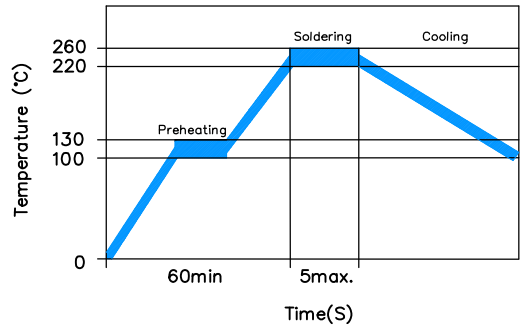
Radial Lead Resettable Polymer PTCs

JK30 Series

Test Procedures and Requirement

Test	Test Conditions	Accept/Reject Criteria
Resistance	In still air @25±2°C	$R_{min} \leq R \leq R_{max}$
Hold Current	60 min, at I_{hold}, In still air @25±2°C	No trip
Time to Trip	Specified current, V_{max}, @25±2°C	T≤Maximum Time To Trip
Trip Cycle Life	V_{max}, I_{max},100 cycles	No arcing or burning
Trip Endurance	Vmax,24hours	No arcing or burning

Soldering Parameters



Pre-Heating Zone	Refer to the condition recommended by the manufacturer. Max. ramping rate should not exceed 4°C/Sec
Soldering Zone	Max. solder temperature should not exceed 260°C
Cooling Zone	Cooling by natural convection in air

Physical Specifications

Lead Material	0.75-1.85A Tin-plated Copper clad steel 2.5-9.0A Tin-plated Copper
Soldering Characteristics	Solder ability per MIL-STD-202, Method 208E
Insulating Material	Cured, flame retardant epoxy polymer meets UL 94V-0 requirements.
Device Labeling	Marked with 'UN', voltage, current rating

Part Numbering

Part Marking

Radial Lead Resettable Polymer PTCs

JK30 Series

Dimensions

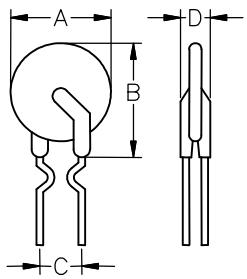


Figure1

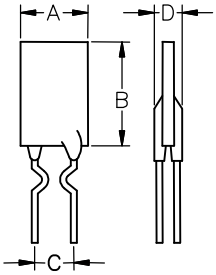


Figure2

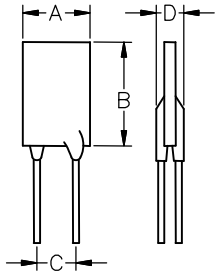


Figure3

Part Number	Figure	A	B	C	D	Lead (dia)		Packaging (Bulk Pack)
		mm (Max.)	mm (Max.)	mm (Typ.)	mm (Max.)	Inches	Mm	
JK30-075	Figure1	7.4	12.2	5.1	3.0	0.020	0.5	1000
JK30-090	Figure2	7.4	14.0	5.1	3.0	0.020	0.5	1000
JK30-110	Figure2	7.4	14.0	5.1	3.0	0.020	0.5	1000
JK30-135	Figure2	9.2	13.5	5.1	3.0	0.020	0.5	1000
JK30-160	Figure2	9.2	15.2	5.1	3.0	0.020	0.5	1000
JK30-185	Figure2	9.2	15.2	5.1	3.0	0.020	0.5	1000
JK30-200	Figure2	15.2	15.2	5.1	3.0	0.020	0.5	1000
JK30-250	Figure2	13.2	18.3	5.1	3.0	0.020	0.5	1000
JK30-300	Figure3	13.2	17.3	5.1	3.0	0.031	0.8	1000
JK30-400	Figure3	14.0	20.1	5.1	3.0	0.031	0.8	500
JK30-500	Figure3	14.0	20.1	10.5	3.0	0.031	0.8	500
JK30-600	Figure3	17.2	24.9	10.5	3.0	0.031	0.8	500
JK30-700	Figure3	17.2	24.9	10.5	3.0	0.031	0.8	200
JK30-800	Figure3	23.5	29.2	10.5	3.0	0.031	0.8	200
JK30-900	Figure3	23.5	29.2	10.5	3.0	0.031	0.8	200

Warning

- This product should not be used in an application where the maximum interrupt voltage or maximum interrupt current in a fault condition, Operation beyond the maximum rating or improper use may result in device damage and possible electrical arcing and flame.
- A PPTC device is not a fuse, It is a nonlinear thermistor that limits current, Because under a fault condition all PPTC devices go into a high resistance state but not open circuit hazardous voltage may be present at PPTC.
- The devices are intended for protection against occasional over-current or over-temperature fault conditions and should not be used when repeated fault conditions or prolonged trip events.
- In most application, power must be removed and the fault condition cleared in order to reset a PPTC device.
- PPTC devices are not recommended to be installed in applications where the device is constrained such that its PPTC properties are inhibited, for example in rigid potting materials or Add devices surface coating, Bundled devices ontology, which lack adequate clearance to accommodate device expansion.
- Contamination on of the PPTC material with certain silicone-based oils or some aggressive solvents can adversely impact the performance of the devices. For example, Organic solvents to cleaning.