

Radial Lead Resettable Polymer PTCs

JK130 Series

Description

JK135 Series is designed to protect against short duration high voltage fault currents (power cross or power induction surge) typically used in AC110V.

Features

- u 0.05-3.5A hold current rating
- u 135VAC operating voltage
- u Fast time-to- trip
- u RoHS compliant, Lead-Free and Halogen-Free



Applicable

- u AC110V over-current protection
- u Power ports
- u Customer Premises Equipment(CPE)

Electrical Parameters

Part Number	I_{hold} (A)	I_{trip} (A)	V_{max} (Vac)	I_{max} (A)	$P_{dtyp.}$ (W)	Maximum Time To Trip		Resistance		
						Current (A)	Time (Sec.)	R_{min} (Ω)	R_{max} (Ω)	R_{1max} (Ω)
JK130-010	0.1	0.20	130	10.0	0.8	0.5	6.0	2.50	9.0	20.0
JK130-015	0.15	0.30	130	10.0	0.8	0.75	5.5	2.50	7.5	18.0
JK130-017	0.17	0.34	130	100	0.8	0.85	5.2	1.50	7.0	16.0
JK130-020	0.20	0.40	130	10.0	0.8	1.00	5.0	1.90	4.0	12.0
JK130-025	0.25	0.50	130	10.0	1.0	1.25	4.8	1.45	3.5	10.0
JK130-030	0.30	0.60	130	10.0	1.0	1.50	4.5	1.00	3.0	5.0
JK130-040	0.40	0.80	130	10.0	1.0	2.00	4.5	0.75	2.0	4.0
JK130-050	0.50	1.00	130	10.0	1.0	2.50	5.0	0.50	1.60	3.5
JK130-065	0.65	1.30	130	10.0	1.0	3.25	5.2	0.45	1.00	2.0
JK130-075	0.75	1.50	130	10.0	1.0	3.75	5.5	0.40	0.90	2.0
JK130-090	0.90	1.80	130	10.0	1.5	4.50	5.8	0.30	0.70	1.5
JK130-110	1.10	2.20	130	10.0	1.5	5.5	6.3	0.20	0.65	1.20
JK130-135	1.35	2.70	130	10.0	1.8	6.75	7.5	0.15	0.60	1.1
JK130-160	1.60	3.20	130	10.0	1.8	8.00	8.0	0.10	0.50	1.00
JK130-185	1.85	3.70	130	10.0	2.0	9.25	9.0	0.10	0.40	0.80
JK130-200	2.00	4.0	130	10.0	2.0	10.00	10.0	0.10	0.30	0.50

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.

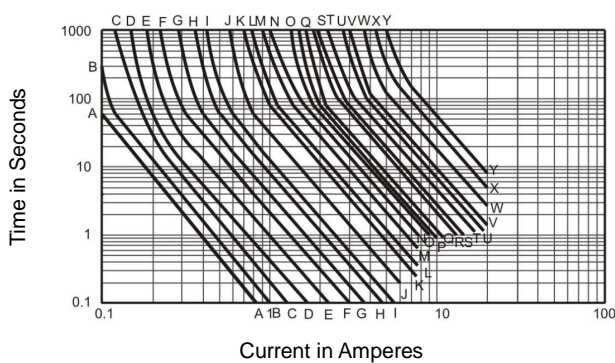
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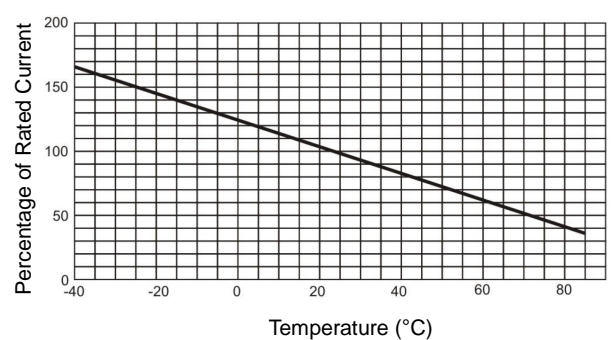
Temperature Derating Chart – I_{hold} (A)

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)								
JK130-010	0.16	0.14	0.12	0.10	0.08	0.07	0.06	0.05	0.04
JK130-015	0.24	0.21	0.18	0.15	0.12	0.11	0.09	0.08	0.06
JK130-017	0.27	0.23	0.20	0.17	0.14	0.12	0.11	0.09	0.07
JK130-020	0.31	0.27	0.24	0.20	0.16	0.14	0.13	0.11	0.08
JK130-025	0.39	0.34	0.30	0.25	0.21	0.18	0.16	0.14	0.10
JK130-030	0.47	0.41	0.36	0.30	0.25	0.22	0.19	0.16	0.12
JK130-040	0.62	0.55	0.48	0.40	0.33	0.29	0.25	0.22	0.16
JK130-050	0.78	0.69	0.60	0.50	0.41	0.36	0.32	0.27	0.21
JK130-065	1.01	0.89	0.77	0.65	0.53	0.47	0.41	0.35	0.27
JK130-075	1.17	1.03	0.89	0.75	0.62	0.54	0.47	0.41	0.31
JK130-090	1.40	1.23	1.07	0.90	0.74	0.65	0.57	0.49	0.37
JK130-110	1.71	1.51	1.31	1.10	0.90	0.79	0.69	0.59	0.45
JK130-135	2.09	1.85	1.61	1.35	1.11	0.97	0.85	0.73	0.55
JK135-160	2.48	2.18	1.90	1.60	1.30	1.15	1.01	0.86	0.64
JK135-185	2.87	2.52	2.20	1.85	1.50	1.33	1.17	1.00	0.74
JK135-200	3.10	2.72	2.38	2.00	1.62	1.44	1.26	1.08	0.80

Average Time Current Curves



Temperature Derating Curve



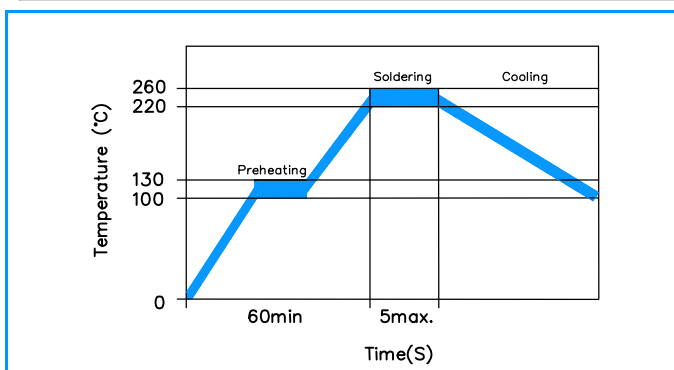
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Test Procedures and Requirement

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	$T \leq$ Maximum Time To Trip
Trip Cycle Life	V_{max} , I_{max} , 100 cycles	No arcing or burning
Trip Endurance	V_{max} , 24 hours	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	0.1-0.17A Tin-plated Copper clad steel 0.2-2.0A 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

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Dimensions

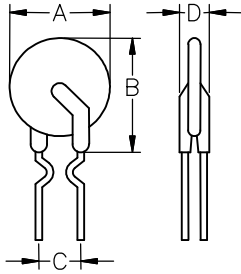


Figure1

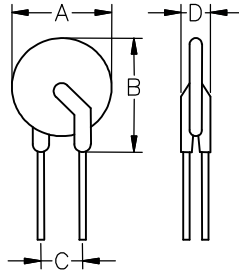


Figure2

Part Number	Figure	A	B	C	D	Lead (dia)		Packaging (Bulk Pack)
		mm (Max.)	mm (Max.)	mm (Typ.)	mm (Max.)	Inches	mm	
JK130-010	Figure1	7.4	12.7	5.1	3.1	0.020	0.5	1000
JK130-015	Figure1	7.4	13.0	5.1	3.1	0.020	0.5	1000
JK130-017	Figure1	7.4	13.5	5.1	3.1	0.020	0.5	1000
JK130-020	Figure1	7.6	13.5	5.1	3.1	0.020	0.5	1000
JK130-025	Figure1	7.6	13.5	5.1	3.1	0.020	0.5	1000
JK130-030	Figure1	8.0	14.0	5.1	3.1	0.020	0.5	1000
JK130-040	Figure1	9.4	15.0	5.1	3.1	0.020	0.5	1000
JK130-050	Figure1	10.2	15.2	5.1	3.1	0.024	0.6	1000
JK130-065	Figure1	10.2	15.2	5.1	3.1	0.024	0.6	1000
JK130-075	Figure1	12.8	18.0	5.1	3.1	0.024	0.6	1000
JK130-090	Figure1	14.5	19.6	5.1	3.1	0.031	0.8	1000
JK130-110	Figure2	16.3	21.3	5.1	3.1	0.031	0.8	1000
JK130-135	Figure2	17.0	22.0	5.1	3.1	0.031	0.8	1000
JK130-160	Figure2	18.0	23.0	5.1	3.1	0.031	0.8	1000
JK130-185	Figure2	22.0	23.0	5.1	3.1	0.031	0.8	500
JK130-200	Figure2	22.0	27.0	10.2	3.1	0.031	0.8	500

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.