

Axial Lead Battery Strap Type Resettable Polymer PTCs

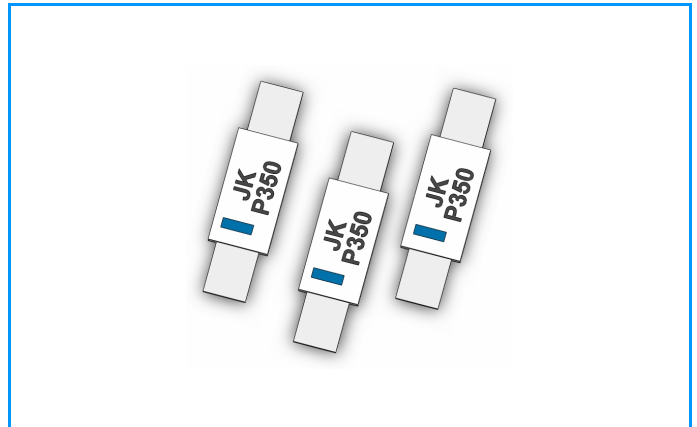
JK-P Series

Description

The JK-P Series device provides reliable, noncycling protection against overcharging and short circuits events for rechargeable battery cells where resettable protection is desired.

Features

- u RoHS compliant and lead-free
- u Axial lead battery strap type devices
- u Slim, low profile design
- u Compact design saves board space
- u Low resistance
- u Fast trip time

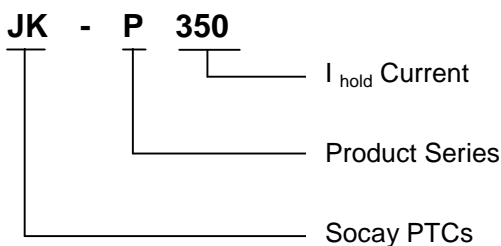


Applications

Almost anywhere there is a low voltage power supply, up to DC24V and load to be protected, including:

- u NiCd/NiMH rechargeable battery pack, Li-ion/Polymer Li-ion battery
- u Camcorders
- u Portable Computers

Part Numbering



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} , 24hours	No arcing or burning

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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} (m Ω)	R_{max} (m Ω)
JK-P070	0.70	1.45	16	100	1.60	3.5	5.0	100	200
JK-P100	1.00	2.50	16	100	1.60	5.0	5.0	70	130
JK-P120	1.20	2.70	16	100	1.60	6.0	5.0	60	120
JK-P175	1.75	3.80	16	100	1.60	8.5	5.0	30	65
JK-P180	1.80	3.80	16	100	1.60	9.0	5.0	30	60
JK-P190	1.90	4.20	16	100	1.60	9.5	5.0	25	45
JK-P200	2.00	4.40	16	100	1.60	10.0	5.0	20	40
JK-P210	2.10	4.40	16	100	1.60	10.5	5.0	20	35
JK-P260	2.60	5.20	16	100	1.60	13.0	5.0	15	30
JK-P300	3.00	6.30	24	100	2.40	15.0	5.0	15	31
JK-P310	3.10	6.30	24	100	2.40	15.5	5.0	18	31
JK-P340	3.40	6.80	24	100	2.40	17.0	5.0	16	27
JK-P350	3.50	7.00	24	100	2.40	17.5	5.0	17	31
JK-P380	3.80	7.60	24	100	2.40	19.0	5.0	13	22
JK-P420	4.20	8.30	24	100	2.00	21.0	5.0	12	24
JK-P450	4.50	9.00	20	100	2.00	22.5	5.0	11	20
JK-P550	5.50	10.50	20	100	2.00	27.5	5.0	9	16
JK-P600	6.00	11.70	20	100	2.80	30.0	5.0	7	14
JK-P730	7.30	14.10	20	100	3.30	36.5	5.0	5	12
JK-P900	9.00	16.70	20	100	3.80	45.0	5.0	6	10
JK-P1410	14.10	26.20	20	100	6.00	20.5	5.0	3	5

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.

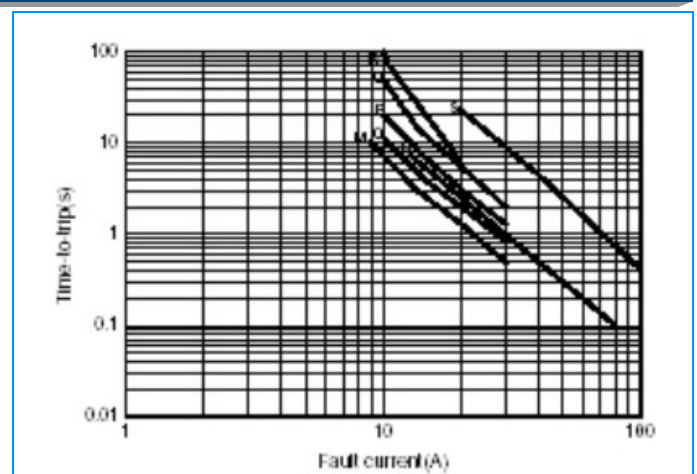
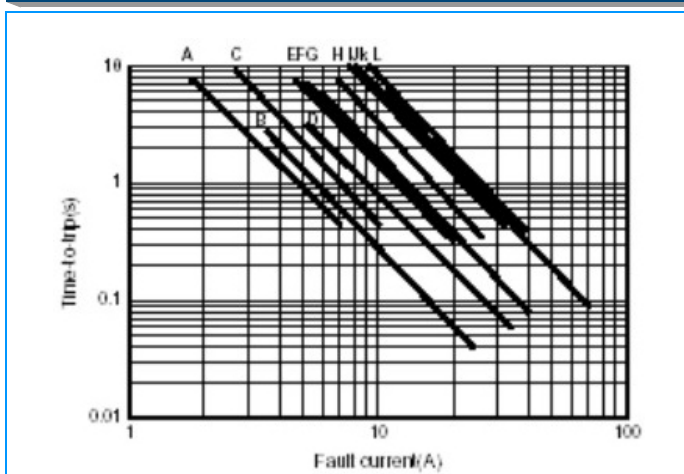
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Temperature Derating Chart – I_{hold} (A)

Part Number	Maximum Ambient Operation Temperature								
	-40°C	-20°C	0°C	25°C	40°C	50°C	60°C	70°C	85°C
	Hold Current (A)								
JK-P070	1.32	1.21	0.99	0.70	0.63	0.60	0.50	0.39	0.26
JK-P100	2.00	1.73	1.52	1.00	0.90	0.85	0.75	0.61	0.40
JK-P120	1.95	1.74	1.54	1.20	1.07	0.98	0.87	0.76	0.58
JK-P175	2.57	2.36	2.07	1.75	1.59	1.39	1.27	1.18	0.99
JK-P180	3.23	2.88	2.35	1.80	1.48	1.20	1.10	0.75	0.45
JK-P190	3.50	3.00	2.51	1.90	1.60	1.35	1.20	0.88	0.52
JK-P200	3.39	2.94	2.55	2.00	1.70	1.55	1.36	1.09	0.77
JK-P210	3.28	2.88	2.59	2.10	1.81	1.70	1.52	1.31	1.02
JK-P260	4.40	3.80	3.19	2.60	2.10	1.80	1.49	1.19	0.70
JK-P300	5.20	4.49	3.78	3.00	2.39	2.04	1.70	1.35	0.78
JK-P310	5.46	4.68	3.80	3.10	2.45	2.11	1.80	1.40	0.80
JK-P340	5.60	4.88	4.10	3.40	2.70	2.33	2.00	1.60	0.89
JK-P350	5.51	4.89	4.42	3.50	3.00	2.89	2.62	2.28	1.79
JK-P380	5.40	4.90	4.40	3.80	3.30	3.00	2.80	2.50	2.10
JK-P420	6.53	5.81	5.20	4.20	3.69	3.38	3.10	2.75	2.24
JK-P450	6.50	5.80	5.30	4.50	3.90	3.60	3.30	2.90	2.40
JK-P550	7.60	6.90	6.20	5.50	4.70	4.30	4.00	3.60	3.00
JK-P600	8.70	7.80	7.10	6.00	5.20	4.70	4.40	3.90	3.20
JK-P730	10.50	9.50	8.60	7.30	6.30	5.70	5.40	4.70	4.00
JK-P900	12.70	11.40	10.00	9.00	7.50	6.80	6.20	5.50	4.50
JK-P1410	21.92	19.51	17.46	14.10	12.39	11.35	10.41	9.23	7.52

Typical Time To Trip At 25°C

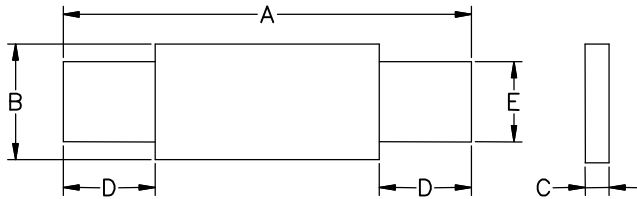


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|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| A=JK-P070 | B=JK-P100 | C=JK-P120 | D=JK-P175 | E=JK-P180 | F=JK-P190 | G=JK-P210 |
| H=JK-P200 | I=JK-P300 | J=JK-P310 | K=JK-P340 | L=JK-P350 | M=JK-P380 | N=JK-P420 |
| O=JK-P450 | P=JK-P550 | Q=JK-P600 | R=JK-P730 | S=JK-P900 | | |

Axial Lead Battery Strap Type Resettable Polymer PTCs

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Dimensions (Unit: mm)



Lead materials: Pure nickel strap
Insulating materials: Polyester tape

Part Number	A		B		C		D		E	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
JK-P070	17.0	22.1	4.9	5.5	0.60	1.10	3.5	6.0	3.8	4.2
JK-P100	17.0	22.1	4.9	5.5	0.60	1.10	3.5	6.0	3.8	4.2
JK-P120	17.0	22.1	4.9	5.5	0.60	1.10	3.5	6.0	3.8	4.2
JK-P175	20.9	23.1	4.6	5.5	0.60	1.00	3.5	6.0	3.8	4.2
JK-P180	20.9	23.1	4.6	5.5	0.60	1.00	3.5	6.0	3.8	4.2
JK-P190	20.9	23.1	4.6	5.5	0.60	1.00	3.5	6.0	3.8	4.2
JK-P200	20.9	23.1	4.6	5.5	0.60	1.00	3.5	6.0	3.8	4.2
JK-P210	20.9	23.1	4.6	5.5	0.60	1.00	3.5	6.0	3.8	4.2
JK-P260	20.9	23.1	4.6	5.5	0.60	1.00	3.5	6.0	3.8	4.2
JK-P300	24.0	27.5	6.9	7.5	0.50	1.00	4.0	7.5	4.8	5.2
JK-P310	24.0	27.5	6.9	7.5	0.50	1.00	4.0	7.5	4.8	5.2
JK-P340	24.0	27.5	6.9	7.5	0.50	1.00	4.0	7.5	4.8	5.2
JK-P350	24.0	27.5	6.9	7.5	0.50	1.00	4.0	7.5	4.8	5.2
JK-P380	24.0	27.5	6.9	7.5	0.50	1.00	4.0	7.5	4.8	5.2
JK-P420	24.0	27.5	9.8	10.5	0.60	1.00	4.0	7.5	4.8	5.2
JK-P450	24.0	27.5	9.8	10.5	0.60	1.00	4.0	7.5	4.8	5.2
JK-P550	24.0	27.5	9.8	10.5	0.60	1.00	4.0	7.5	4.8	5.2
JK-P600	24.0	26.0	13.9	14.5	0.60	1.00	4.1	5.5	5.9	6.6
JK-P730	27.1	29.1	13.9	14.5	0.60	1.00	4.1	5.5	5.9	6.6
JK-P900	45.4	47.6	7.9	8.5	0.60	1.30	4.6	6.2	5.9	6.1
JK-P1410	58.0	60.0	13.4	14.0	0.60	1.30	4.2	5.8	5.9	6.1

Environmental Specifications

Test Item	Conditions	Resistance Change
Passive Aging	+85 °C, 1000hrs	± 10% Typical
Humidity Aging	+85 °C, 85%R.H., 168hrs	± 10% Typical
Thermal Shock	-55°C to +125 °C, 10times	± 12% Typical
Resistance to Solvent	MIL-STD-202, Method 215	No Change
Vibration	MIL-STD-202, Method 201	No Chang

Ambient operating conditions:-40°C to +85 °C

Maximum surface temperature of the device in the tripped state is 125 °C