

DATA SHEET

SPARK GAP PROTECTORS
POWER SUPPLIES

BK3 series

RoHS compliant & Halogen free





Features

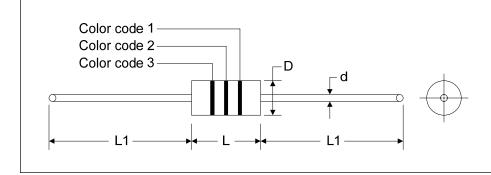
- Approximately zero leaking current before clamping voltage
- Less decay at on/off state.
- High capability to withstand repeated lightning strikes.
- Low electrode capacitance($\leq 0.8 pF$) and high isolation($\geq 100 M\Omega$).
- RoHS compliant.
- Bilateral symmetrical.
- Temperature, humidity and lightness insensitive.
- Operating temperature: -40°C ~ +85°C
- Storage temperature: -40°C ~ +125°C
- Meets MSL level 1, per J-STD-020



Applications

- Power Supplies
- Motor sparks eliminating
- Relay switching spark absorbing
- Data line pulse guarding
- Telephone/Fax/Modem
- High frequency signal transmitters/receivers
- Satellite antenna
- Radio amplifiers
- Alarm systems
- Cathode ray tubes in Monitors/TVs

Dimensions



Symbol	Dimension (mm)
L	3.8±0.5
L1	28.0±3.0
D	Ф1.8±0.5
d	Ф0.5±0.05



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Electrical Characteristics

Part Number	DC Spark-over Voltage	Minimum Insulation Resistance		Maximum Capacitance (1KHz-6V _{MAX})	Surge Current Capacity	Surge Life Test
	Vs(V)	Test Voltage(V)	IR _{OHM} (MΩ)	C(pf)	(8/20µs)	8/20µs,100A
BK33000702	140±30%	50	100	0.8	500A	150 times
BK32001002	200±20%	100	100	0.8	500A	150 times
BK32001102	220±20%	100	100	0.8	500A	150 times
BK32001502	300±20%	100	100	0.8	500A	150 times
BK33001502	300±30%	100	100	0.8	500A	150 times
BK32002002	400±20%	250	100	0.8	500A	150 times
BK32002502	500±20%	250	100	0.8	500A	150 times
BK32003002	600±20%	250	100	0.8	500A	150 times
BK32003502	700±20%	250	100	0.8	500A	150 times

Color Code

Part Number	Color Code 1	Color Code 2	Color Code 3
BK33000702	Black	Yellow	-
BK32001002	Red	-	-
BK32001102	Red	Red	-
BK32001502	Orange	-	-
BK33001502	Orange	Orange	-
BK32002002	Yellow	-	-
BK32002502	Green	-	-
BK32003002	Blue	-	-
BK32003502	White	Brown	-



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Test Methods and Results

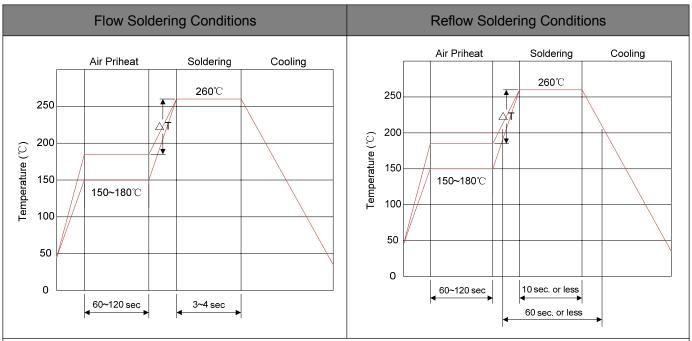
Items		Test Method	Standard		
DC Spark-over Voltage	gradually incre current is 0.5r	ing discharge voltage (Vs) by easing applied DC voltage. Test mA max. And the DC voltage ithin 100V/s(Vs<1000V) or 000V).			
Insulation Resistance	terminal at reg	nsulation resistance across the gular voltage. But the test voltag he DC spark-over voltage.	Meet specified value.		
Capacitance		electrostatic capacitance by tage of less than 6V (at 1KHz) inals.			
Static Life	10KV with 1500pf condenser is discharged through 0Ω resistor. 200 times at an interval of 10sec.		△Vs/Vs ≤30% Characteristics of other items must meet the specified value.		
The following impulse current for specified current applied ±5 times, each time interval 60 seconds. Thereafter, outer appearance shall be visually examined.					
Surge Current	Туре	Impulse current	No crack and no failures		
Capacity	Vs < 400V	1.2/50µs & 8/20µs, 500A			
	Vs ≥ 400V	1.2/50μs & 8/20μs, 500A, electrically connected with a resistor (1~2 Ω).			
Cold Resistance	Measurement temperature/2	after -40℃/1000 HRS & norma 2 HRS.	Features are conformed to rated spec.		
Heat Resistance	Measurement temperature/2	after 125℃/1000 HRS & norma PHRS.			
Humidity Resistance		after humidity 90~95°C(45°C) normal temperature/2 HRS.			
Temperature Cycle	→normal, tem	tition of cycle -40°C/30min np/2 min →125°C/30min, after normal temp/2 HRS.			
Solder Ability	230±5℃ for 3	I immerse in molten solder sec up to the point of 1.5mm from or solder adhesion.	n Lead wire is evenly covered by solder.		
Solder Heat		after lead wire is dipped up to 5mm from body into 260±5°C ec.	Conformed to rated spec.		
Pull Strength	Apply 0.5kg lo	pad for 10sec.			
Flexural Strength		e at the point of 2mm from body ad and back to its original point.	Lead shall not pull out to snap.		



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Recommended Soldering Conditions



- 1) Time shown in the above figures is measured from the point when chip surface reaches temperature.
- 2) Temperature difference in high temperature part should be within 110°C.
- 3) After soldering, do not force cool, allow the parts to cool gradually.

Hand Soldering

Solder iron temperature: 350±5°C Heating time: 3 seconds max.

General attention to soldering

- High soldering temperatures and long soldering times can cause leaching of the termination, decrease in adherence strength, and the change of characteristic may occur.
- For soldering, please refer to the soldering curves above. However, please keep exposures to temperatures exceeding 200 °C to fewer than 50 seconds.
- Please use a mild flux (containing less than 0.2wt% CI). Also, if the flux is water soluble, be sure to wash thoroughly to remove any residue from the underside of components that could affect resistance.

Cleaning

When using ultrasonic cleaning, the board may resonate if the output power is too high. Since this vibration can cause cracking or a decrease in the adherence of the termination, we recommend that you use the conditions below.

Frequency: 40kHz max. Output power: 20W/liter

Cleaning time: 5 minutes max.

