



SCB Series

Features

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



- u Power Supplies
- Motor sparks eliminating
- u Relay switching spark absorbing
- u Data line pulse guarding
- u Electronic devices requiring UL497A and UL497B compliant
- u Telephone/Fax/Modem
- u High frequency signal transmitters/receivers
- u Satellite antenna
- u Radio amplifiers
- u Alarm systems
- u Cathode ray tubes in Monitors/TVs

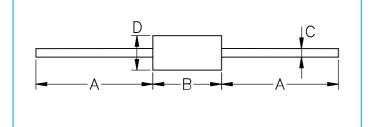
Part Numbering

<u>SCB</u> - <u>201</u> <u>M</u>

(1) (2) (3)

- (1) Series
- (2) V_S Voltage, e.g. 201=20X10¹=200V
- (3) V_S Voltage tolerance: L $\pm 15\%$, M $\pm 20\%$, N $\pm 30\%$

Dimensions



Dimensions	Inches	Millimeters
Α	1.102±0.118	28.0±3.0
В	0.157±0.012	4.0±0.3
С	0.020±0.002	0.5±0.05
D	0.079±0.012	2.0±0.3





SCB Series

Electrical Characteristics

Part Number	DC Spark-over Voltage Vs(V)	Minimum Insulation Resistance IR(OHM)/DC	Maximum Capacitance 1KHZ-6Vmax C (pF)	Surge Current Capacity 8/20 μS	Surge Life Test
SCB-141N	140(98~182)	100M / 50V	1.0	500A	10KV / 100A , >200T
SCB-181N	180(126~234)	100M / 50V	1.0	500A	10KV / 100A , >200T
SCB-201M	200(160~240)	100M /100V	1.0	500A	10KV / 100A , >200T
SCB-301M	300(240~360)	100M /100V	1.0	500A	10KV / 100A , >200T
SCB-401M	400(320~480)	100M / 250V	1.0	500A	10KV / 100A , >200T
SCB-471M	470(400~560)	100M / 250V	1.0	500A	10KV / 100A , >200T
SCB-501M	500(400~600)	100M / 250V	1.0	500A	10KV / 100A , >200T
SCB-601M	600(480~720)	100M / 250V	1.0	500A	10KV / 100A , >200T
SCB-102M	1000(800~1200)	100M / 500V	1.0	500A	10KV / 100A , >200T
SCB-152M	1500(1200~1800)	100M / 500V	1.0	500A	10KV / 100A , >200T

Color Code

Part Number	Color Code1	Color Code2	Color Code3
SCB-141N	Brown	-	-
SCB-181N	Gray	-	-
SCB-201M	Red	-	-
SCB-301M	Orange	-	-
SCB-401M	Yellow	-	-
SCB-471M	Yellow		-
SCB-501M	Green	•	-
SCB-601M	Blue	•	•
SCB-102M	Black	-	-
SCB-152M	Black	Green	Red





SCB Series

Test Methods and Results

Items	Test Method		Test Method	Standard
DC Spark-over Voltage	Measure starting discharge voltage (Vs) by gradually increasing applied DC voltage. Test current is 0.5mA max. And the DC voltage ascends up within 100V/s(Vs≤1000V) or 500V/s(Vs≥1000V).			Rate-of-change, within±30%
Insulation Resistance	a		tion resistance across the terminal But the test voltage doesn't over voltage.	insulation resistance & capacitance, conformed to rated spec.
Capacitance			ostatic capacitance by applying a 6V (at 1KHz) between terminals.	
Static Life		•	condenser is discharged through mes at an interval of 10sec.	△Vs/Vs ≤30% Characteristics of other items must meet the specified value
2	a T	pplied ±5 times,	alse current for specified current each time interval 60 seconds. appearance shall be visually	
Surge Current Capacity		Туре	Impulse current	No crack and no failures
		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 after -40 °C /1000 HRS & normal temperature/2 HRS.		
Heat Resistance		leasurement after emperature/2 HRS	r 125 $^{\circ}$ C /1000 HRS & normal .	
Humidity Resistance		leasurement after	humidity $90\sim95^{\circ}\mathbb{C}(45^{\circ}\mathbb{C})$ /1000 perature/2 HRS.	Features are conformed to rated spec
Temperature Cycle	te	•	of cycle -40°C /30min →normal, 25°C/30min, measurement after	
Solder Ability	Apply flux and immerse in molten solder 230±5°C for 3sec up to the point of 1.5mm from body. Check for solder adhesion.			Lead wire is evenly covered by solder
Solder Heat	Measurement after lead wire is dipped up to the point of 1.5mm from body into 260±5°C solder for 10sec			Conformed to rated spec
Pull Strength	Apply 0.5kg load for 10sec			
Flexural Strength	Bend lead wire at the point of 2mm from body under 0.25 load and back to its original point. Repeat 1 time.			Lead shall not pull out to snap

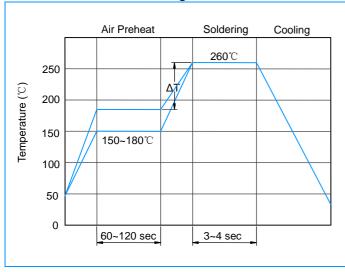




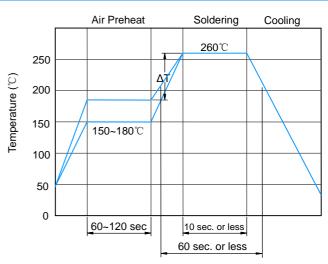
SCB Series

Recommended Soldering Conditions

Flow Soldering Conditions



Reflow Soldering Conditions



- 1) Time shown in the above figures is measured from the point when chip surface reaches temperature.
- 3) After soldering, do not force cool, allow the parts to cool gradually.

Hand Soldering

Solder iron temperature: $350\pm5^{\circ}$ C Heating time: 3 seconds max.

General attention to soldering

- **u** High soldering temperatures and long soldering times can cause leaching of the termination, decrease in adherence strength, and the change of characteristic may occur.
- u For soldering, please refer to the soldering curves above. However, please keep exposures to temperatures exceeding 200 ℃ to fewer than 50 seconds.
- u 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:

4/5

Frequency: 40kHz max.

Output power: 20W/liter

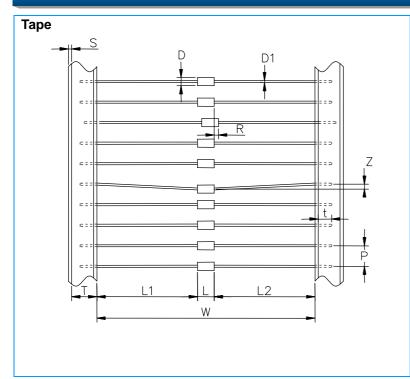
Cleaning time: 5 minutes max.



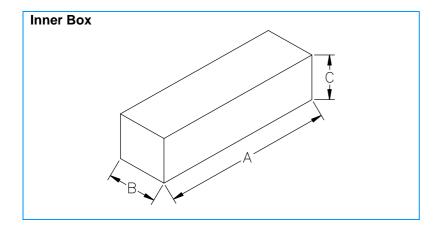


SCB Series

Packaging



Symbol	Dimension (mm)		
w	52+2.0/-1.0		
Р	5.0±0.5		
Т	6.0±1.0		
Z	1.2 Max		
L1-L2	1.0 Max		
S	0.8 Max		
t	3.2 Max		
L	4.0±1.0		
D1	Ф0.5±0.05		
D	D Φ2.0±0.5		
R	1.0 Max		



Item	Description	
Length	A=255 mm	
Width	B=75 mm	
Height	C=68 mm	
Quantity	2000 PCS	
Package There are upper and bottom board to protect the part from damage.		