

Ceramic Disc Capacitors [Safety Disc Capacitors – X1Y1& X1Y2]

SDC Series



This specification applies to the following Safety Standards that are recognized for Ceramic Capacitors used in Electronic Appliances.

◆ Features

- Operating temperature range guaranteed up to 125°C(UL/CSA:85°C)
- Safety capacitors specially designed for use in Modem, Facsimile, Telephone and other electronic equipment for lighting and surge protection, EMI filter and isolation.
- The series is recognized by UL,CSA,TUV,CQC
- Coated with Flame-retardant epoxy resin (conforming to UL 94-0 standards)
- Suitable for automatic insertion
- RoHS compliant
- Halogen Free available

◆ Applications

- Safety capacitors specially designed for use in Modem, Facsimile, Telephone and other electronic equipment for lighting and surge protection, EMI filter and isolation.
- Interference suppressor for AC line of electronic equipment

◆ Related Standards and Certificate Numbers

Certificated Body	Relation Standard	Number	Rated Voltage
TUV	IEC 60384-14 EN 60384-14	R 50152938	X1:400 VAC Y2:250 VAC
UL	UL 60384-14	E300818	
CUL/CSA	CSA :E60384-14	E300818	X1:440 VAC Y1:250 VAC
ENEC	EN 60384-14	HN69254436 HN69254437 HN69254438	
CQC	GB/T6346.14-2015 IEC 60384-14	CQC13001096459 /CQC13001096458 CQC13001096461/CQC13001096470 CQC13001086961/CQC13001086960 CQC13001095807	X1:440 VAC Y1:400 VAC

◆ How To Order

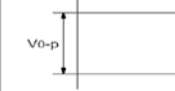
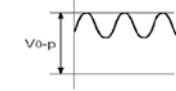
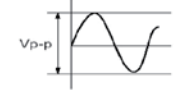
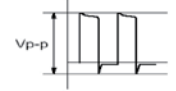
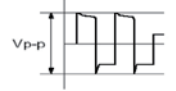
SDC	P	101	K	50	2	7	A	2	F
Product Code SDC: Safety Disc Ceramic Capacitor	Dielectric Ex.: N : NP0 S : SL P : Y5P Y : Y5V E : Y5U	Capacitance Unit : pF Ex.: 100 : 10x10 ⁰ 151 : 15x10 ¹	Tolerance Ex.: J : ±5.0% K : ±10% M : ±20%	Class Ex.: 10 : X1/Y1 50 : X1/Y2	Rated Voltage Ex.: 2: Y2 Cap:250V X1 Cap:400V 3: Y1 Cap:250V X1 Cap:440V 4: Y1 Cap:400V X1 Cap:440V	Lead Space Ex.: 5 : 5.00mm 6 : 6.35mm 7 : 7.50mm A : 10.0mm B : 12.5mm	Lead Length Ex.: H : 3.1mm C : 3.5mm S : 5.0mm M : 10mm L : 25mm min T : T&R A : Ammo Box	Lead Shape S Type 1:φ=0.50mm 2:φ=0.60mm 3:φ=0.65mm 4:φ=0.80mm D Type 9:φ=0.50mm A:φ=0.60mm B:φ=0.65mm C:φ=0.80mm	F :Halogen Free

◆ Caution (Rating)

(1) Operating Voltage

Be sure to maintain the V_{p-p} value of the applied voltage or the V_{o-p} which contains a DC bias within the rated voltage range.

When the voltage is started to apply to the circuit or it is stopped applying, the irregular voltage may be generated for a transit period because of resonance or switching. Be sure to use a capacitor within rated voltage containing this irregular voltage.

Voltage	DC Voltage	DC+AC Voltage	AC Voltage	Pulse Voltage (1)	Pulse Voltage (2)
Positional Measurement					

(2) Operating Temperature and Self-generated Heat

Keep the surface temperature of a capacitor below the upper limit of its rated operating temperature range. Be sure to take into account the heat generated by the capacitor itself. When the capacitor is used in a high-frequency current, pulse current or the like, it may have the self-generated heat due to dielectric-loss.

Applied voltage should be the load such as self-generated heat is within 20°C on the condition of atmosphere temperature 25°C. When measuring, use a thermocouple of small thermal capacity-K of $\phi 0.1\text{mm}$ and be in the condition where capacitor is not affected by radiant heat of other components and wind of surroundings. Excessive heat may lead to deterioration of the capacitor's characteristics and reliability.

(3) Test condition for withstanding Voltage

I. Test Equipment

Test equipment for AC withstanding voltage shall be used with the performance of the wave similar to 50/60 Hz sine waves.

If a distorted sine wave or over load exceeding the specified voltage value is applied, a failure may be caused.

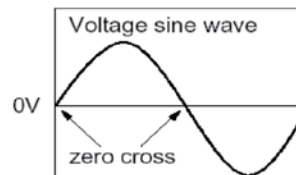
II. Voltage Applied Method

When the withstand voltage is applied, the capacitor's leads or terminals shall be firmly connected to the output of the withstand voltage test equipment, and then the voltage shall be raised from near zero to the test voltage.

If the test voltage is applied directly to capacitor, the test voltage should be applied at the *zero cross point. At the end of the test time, the test voltage shall be reduced to near zero, and then capacitor's lead or terminal shall be taken off the output of the withstand voltage test equipment.

If the test voltage is not applied from the near zero voltage point and applied directly to capacitor, a surge voltage may arise, and cause the capacitor to fail.

* ZERO CROSS is the point where voltage sine wave pass 0V.- See the right figure.



(4) Fail-Safe

It should be assumed that if the capacitor fails, it will fail in short circuit mode. Be sure to provide an appropriate fail-safe function, like a fuse in your circuit, if failure would cause an electric shock, fire or fumes.

◆ Caution (Storage and operating condition)

The insulating coating of capacitors does not form a perfect seal; therefore, do not use or store capacitors in a corrosive atmosphere, especially where chloride gas, sulfide gas, acid, alkali, salt are likely to be present. And avoid exposure to moisture. Before cleaning, bonding, or molding this product, verify that these processes do not affect product quality by testing the performance of a cleaned, bonded or molded product in the intended equipment. Store the capacitors where the temperature and relative humidity do not exceed 35°C and 75%RH. Use capacitors within 12 months.

◆ Caution (Soldering and Mounting)

1. Vibration and impact:

Do not expose a capacitor or its leads to excessive shock or vibration during use.

2. Soldering:

When soldering this product to a PCB/PWB, do not exceed the solder heat resistance specification of the capacitor. Subjecting this product to excessive heating could melt the internal junction solder and may result in thermal shocks that can crack the ceramic element.

When soldering these capacitor with a soldering iron, it should be performed in following conditions.

Temperature of iron-tip: 400 degrees C. max.

Soldering iron wattage: 50W max.

Soldering time: 3.5 sec. max.

3. Cleaning (ultrasonic cleaning):

To perform ultrasonic cleaning, observe the following conditions.

Rinse bath capacity: Output of 20 watts per liter or less.

Rinsing time: 5 min maximum.

Do not vibrate the PCB/PWB directly.

Excessive ultrasonic cleaning may lead to fatigue destruction of the lead wires.

◆ Caution (Handling)

Vibration and impact

Do not expose a capacitor or its leads to excessive shock or vibration during use.

Failure to follow the above cautions may result, in worst case, in a short circuit and cause fuming or partial dispersion where the product is used.