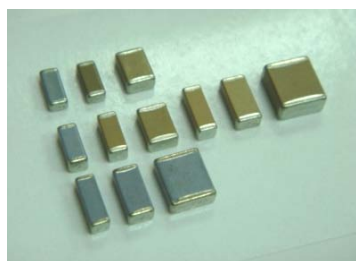


SCC Series

Safety Capacitors rated to 250Vac

X1/Y2, X2/Y3 & X2



The SCC series of **X1/Y2**, **X2/Y3** & **X2** safety capacitors are designed specifically for use in modem, facsimile, telephone and other electronic equipment. These parts are compliant to EN/IEC60384-14 and UL60950-1 standards. These capacitors are available in NP0 (C0G), SL and X7R dielectrics.

◆ Features

- ❑ Small size & high capacitance values.
- ❑ Suitable for reflow soldering.
- ❑ Surface mount.
- ❑ RoHS compliant and Lead (Pb) free option.
- ❑ Safety standard approval by EN/IEC 60384-14 and UL 60950-1.
- ❑ Certified to:
 - TUV R50005234, R50103496 & UL E229738
 - TUV R50162550 & UL E229738 for Lead (Pb) free.

◆ Application

- ❑ Specially designed for use in modem, facsimile, telephone and other telecommunication equipment, electronic equipment for lightning and surge protection, EMI filtering and isolation.

◆ Safety Detail of Specifications

| | |
|---|--|
| EN 60384-1: 2001 EN 60384-14: 2005 | Meets the electrical requirements and certification for equipment requiring class X1/Y2 and X2/Y3 devices. |
| IEC 60950-1 : 2005 | Component certified for equipment requiring IEC 60950 compliance |
| IEC 60384-1: 1999 IEC 60384-14: 2005 | Component certified for equipment requiring IEC-384 compliance |
| UL 60950-1: 2007 2nd edition | TNV/SELV Isolation capacitors certified to UL 60950 -1 |

◆ How To Order

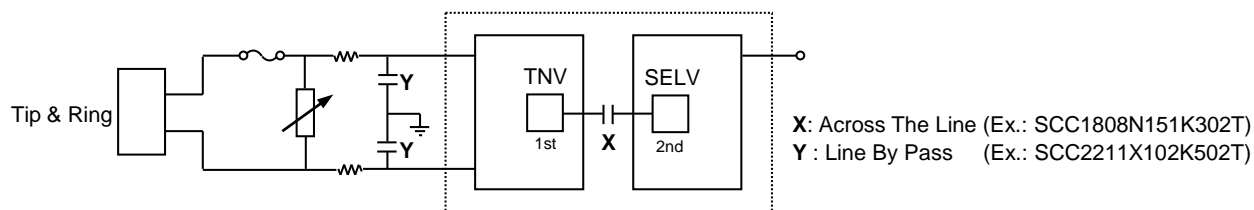
SCC
1808
X
102
K
502
T
S

| Product Code | Chip Size | Dielectric | Capacitance Unit : pF | Tolerance | Class | Packaging | Special Requirement |
|-------------------------------|---|---------------------------------------|--|---|--|-----------------------------|--|
| SCC : Safety approved MLCC | Ex. : 1808 1812 2208 2211 2220 2825 | Ex. : N : NP0 X : X7R L : SL | Ex. : 2R0 : 2.0pF 100 : 10×10 ⁰ 471 : 47×10 ¹ 182 : 18×10 ² | Ex. : J : +/- 5% K : +/-10% M : +/-20% | Ex. : 202 : X2 302 : X2/Y3 502 : X1/Y2 602 : X1/Y2 for SCC2208N, SCC2211N, SCC2220N | T : Tape & Reel B : Bulk | Ex. : S : Arc Prevention Coating X : Polymer Termination (SuperTerm) Z : Arc Prevention Coating & SuperTerm G : Lead (Pb) free |

◆ Summary of Specifications

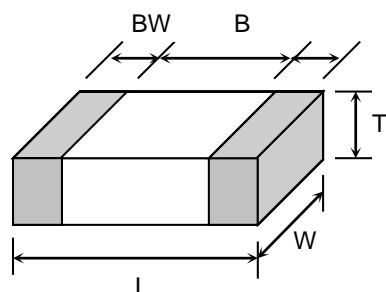
| | |
|--------------------------------|---|
| Rated Voltage | AC 250Vrms |
| Temperature Coefficient | NP0 : < 30ppm/°C , -55~+125 °C (EIA Class I) |
| | SL: +350~ -1000ppm/°C -55~+85°C |
| | X7R : < ± 15% , -55~+125 °C (EIA Class II) |
| Capacitance Range | See table below |
| Quality and Dissipation Factor | NP0/SL : Q≥1000 ; X7R : D.F.≤2.5% |
| Climatic Category | -55/125/21 |
| Insulation Resistance | 10GΩ |
| Voltage Proof | X Capacitor : Applied Voltage 1075Vdc(4.3Ur) Y Capacitor : Applied Voltage 1500Vac |
| Impulse | Y3 : 2.5KV (Compliant to IEC 60950) ; X2 : 2.5KV / Y2 : 5KV for three times |
| Ageing | NP0 : 0 % ; SL : 1.5% ; X7R : 1.0 % per decade hr, typical |

◆ Application Example Circuit



◆ Dimensions

Unit : mm [inches]



| TYPE | L | W | T (max) | B (min) | BW (min) |
|------|-------------------------|-------------------------|----------------|----------------|----------------|
| 1808 | 4.60±0.3 [.181±.012] | 2.00±0.2 [.079±.008] | 2.20 [.087] | 2.50 [.098] | 0.20 [.008] |
| 1812 | 4.60±0.3 [.181±.012] | 3.20±0.3 [.126±.012] | 2.60 [.102] | 2.50 [.098] | 0.20 [.008] |
| 2208 | 5.70±0.4 [.220±.016] | 2.00±0.2 [.079±.008] | 2.20 [.087] | 4.00 [.157] | 0.30 [.012] |
| 2211 | 5.70±0.4 [.220±.016] | 2.80±0.3 [.110±.012] | 3.00 [.118] | 4.00 [.157] | 0.30 [.012] |
| 2220 | 5.70±0.4 [.220±.016] | 5.00±0.4 [.197±.016] | 3.00 [.118] | 4.00 [.157] | 0.30 [.012] |
| 2825 | 6.80±0.4 [.280±.016] | 6.35±0.4 [.197±.016] | 4.00 [.157] | 4.00 [.157] | 0.30 [.012] |

◆ Capacitance Range

| Class | Size | Temperature Characteristic | Rated Voltage | Certificated | Capacitance Range (pF) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|------|----------------------------|---------------|--------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | | 2R0 | 5R0 | 6R8 | 8R2 | 100 | 120 | 150 | 180 | 220 | 270 | 330 | 360 | 390 | 470 | 560 | 680 | 820 | 101 | 121 | 151 | 181 | 221 | 271 | 331 | 391 | 471 | 561 | 681 | 821 | 102 | 122 | 152 | 182 |
| X2/Y3 | 1808 | NP0 | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1808 | X7R | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1812 | X7R | 250Vrms | TUV | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X1/Y2 | 1808 | NP0 | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1808 | X7R | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1812 | X7R | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2208 | NP0 | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2208 | X7R | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2211 | NP0 | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2211 | X7R | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2220 | NP0 | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2220 | X7R | 250Vrms | TUV/UL | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X2 | 2825 | X7R | 250Vrms | TUV | [Blue bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

◆ Capacitance Range Lead (Pb) free



| Class | Size | Temperature Characteristic | Rated Voltage | Certificated | Capacitance Range (pF) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|------|----------------------------|---------------|--------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | | 2R0 | 5R0 | 6R8 | 8R2 | 100 | 120 | 150 | 180 | 220 | 270 | 330 | 360 | 390 | 470 | 560 | 680 | 820 | 101 | 121 | 151 | 181 | 221 | 271 | 331 | 391 | 471 | 561 | 681 | 821 | 102 | 122 | 152 | 182 |
| X2/Y3 | 1808 | NP0 | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1808 | SL | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1808 | X7R | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1812 | X7R | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X1/Y2 | 1808 | NP0 | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1808 | X7R | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1812 | NP0 | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1812 | X7R | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2208 | NP0 | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2208 | X7R | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2211 | NP0 | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2211 | X7R | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2220 | NP0 | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2220 | X7R | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| X2 | 2220 | X7R | 250Vrms | TUV/UL | [Green bars] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

'X' denotes values that have been tested to a rated voltage of 305Vac
TUV test report number 28208004 dated 27th May 2010