

Surface Mount Chip Capacitors

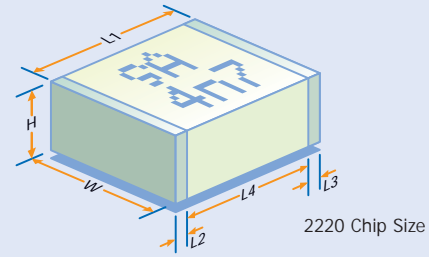
250Vac Safety Approved Chip

X7R



Syfer Technology's range of Safety Standard Approved Capacitors are approved and certified by TÜV to IEC 60384-14 2nd Edition: 1993 and EN 132400: 1994 and UL approved to UL 1414 6th Edition.

Class X1/Y2 (Syfer Type A) covers capacitance values from 150pF to 4.7nF and is approved by TÜV & UL. Class X2 (Syfer Type B) covers capacitance values from 150pF to 10nF, and is approved by TÜV.

These surface mount capacitors offer high capacitance values in a small low cost package size, ideal for automatic placement. Ideal for use in modems, faxes, telephones, the AC line of the switching power supply of battery chargers, AC adaptors and many other applications.



Case size	Capacitance	Dielectric	Syfer part number	Tolerance	Approval	Syfer Type	Class
2220	150pF	X7R	2220JA250151*XTB16	±10%, ±20%	TÜV/UL	Type A	X1/Y2
2220	180pF	X7R	2220JA250181*XTB16	±10%, ±20%			
2220	220pF	X7R	2220JA250221*XTB16	±10%, ±20%			
2220	270pF	X7R	2220JA250271*XTB16	±10%, ±20%			
2220	330pF	X7R	2220JA250331*XTB16	±10%, ±20%			
2220	390pF	X7R	2220JA250391*XTB16	±10%, ±20%			
2220	470pF	X7R	2220JA250471*XTB16	±10%, ±20%			
2220	560pF	X7R	2220JA250561*XTB16	±10%, ±20%			
2220	680pF	X7R	2220JA250681*XTB16	±10%, ±20%			
2220	820pF	X7R	2220JA250821*XTB16	±10%, ±20%			
2220	1nF	X7R	2220JA250102*XTB16	±10%, ±20%			
2220	1.2nF	X7R	2220JA250122*XTB16	±10%, ±20%			
2220	1.5nF	X7R	2220JA250152*XTB16	±10%, ±20%			
2220	1.8nF	X7R	2220JA250182*XTB16	±10%, ±20%			
2220	2.2nF	X7R	2220JA250222*XTB16	±10%, ±20%			
2220	2.7nF	X7R	2220JA250272*XTB16	±10%, ±20%			
2220	3.3nF	X7R	2220JA250332*XTB16	±10%, ±20%			
2220	3.9nF	X7R	2220JA250392*XTB16	±10%, ±20%			
2220	4.7nF	X7R	2220JA250472*XTB16	±10%, ±20%			
2220	5.6nF	X7R	2220JA250562*XTB17	±10%, ±20%			
2220	6.8nF	X7R	2220JA250682*XTB17	±10%, ±20%			
2220	8.2nF	X7R	2220JA250822*XTB17	±10%, ±20%			
2220	10nF	X7R	2220JA250103*XTB17	±10%, ±20%			
					TÜV	Type B	X2

All product will be marked with the Syfer Logo, type code and capacitance value, as per IEC384-14 / EN132400.

Electrical Specification

Rated voltage	250VAC
Dielectric Type	X7R (2R1, CECC ±15%, no D.C. Bias)
Temperature Range	-55°C to +125°C
Climatic Category	55/125/56/C
Insulation resistance	100GΩ
Ageing rate	1% per decade of time
Voltage Proof	3000VDC/2000VAC

Mechanical Specification

Chip Size	2220
Length (L1)	5.7mm ± 0.4mm (0.225" ± 0.016")
Width (W)	5.0mm ± 0.4mm (0.197" ± 0.016")
Thickness (H)	2.5mm Max. (0.1" Max.)
Termination Bands (L2, L3)	0.25 - 0.65mm (0.01" - 0.026")
Creepage Distance (L4)	4.0mm Min. (0.16" Min.)

Specification	Details
EN 132400: 1994	+A2: 1998 +A3: 1998 +A4: 1999
IEC 60384-14 2 nd Edition: 1993	+A1: 1995
UL 1414 6 th Edition	Y2, X1 across the line, antenna coupling and line bypass capacitors.

Ordering Information

2220	J	A25	0471	K	X	T	B16
Chip Size	Termination J= Nickel Barrier Y= FlexiCap	Voltage A25=250VAC	Capacitance Expressed in picofarads (pF). First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of zeros following. Example: 0471=470pF.	Tolerance J = ±5% K = ±10% M = ±20%	Dielectric X = X7R	Packaging T = 178mm (7") reel 1000 pieces R = 330mm (13") reel 4000 pieces B = Bulk	B16 = Type A: X1/Y2 B17 = Type B: X2

- notes**
- For X2 (Type B) values below 5.6nF, X1 (Type A) parts will be substituted.
 - The normal failure mode of Multilayer Ceramic Capacitors is short circuit and as such due consideration should be made to the requirements of IEC60384-14 / EN132400 for class X1/X2 and Y2 capacitors, and their connection to mains voltages.