

**Chip Size 1808**

- Length (L1)**  
4.5mm ± 0.35mm (0.18" ± 0.014")
- Width (W)**  
2.0mm ± 0.30mm (0.08" ± 0.012")
- Thickness (H)**  
2.0mm (0.08") Max.
- Termination Bands (L2, L3)**  
0.25 - 0.80mm (0.01" - 0.03")
- Creepage distance (L4)**  
2.5mm (0.1") Min.

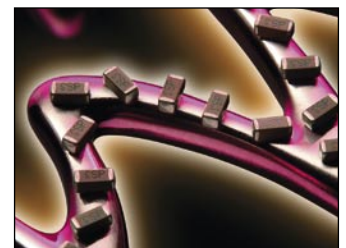
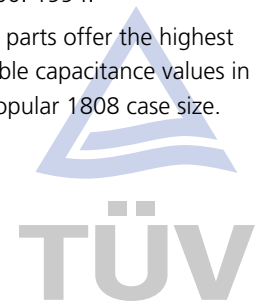
# 1808 Y2/ X1 Surge Protection Capacitors

**SY2 Range**

Syfer Technology's Surge Protection (SY2) range of 1808 ceramic chip capacitors are Class Y2/X1 compliant and designed for use in equipment certified to IEC 60950 (2000 edition) where over-voltage surges can occur.

This range is approved and certified by TÜV and meet the electrical requirements of IEC 60384-14: 1993 and EN 132400: 1994.

These parts offer the highest available capacitance values in the popular 1808 case size.



**Specification**

**Capacitance Values**

- COG/NPO**  
4.7pF - 220pF
- X7R**  
150pF - 1nF

**Electrical**

- Operating Temperature**  
-55°C to +125°C
- Temperature Coefficient**  
COG/NPO = 0 ± 30 ppm/°C, Ultra Stable Class 1 Ceramic (EIA Class 1)  
X7R = ±15%, Stable Class II Ceramic (EIA Class II)
- Insulation resistance at +25°C**  
>100GΩ
- Insulation resistance at +125°C**  
>10GΩ
- Dielectric Strength (DWV)**  
2000VAC/3000VDC
- Impulse Capability**  
5KV, 1.2/50µSec waveform 2Ω source Impedance
- Rated voltage**  
250VAC
- Climatic Category (IEC)**  
55/125/56
- Ageing rate**  
COG/NPO = zero  
X7R = 1% per decade of time
- Test parameters for capacitance and DF**  
COG/NPO = 1Vrms @ 1MHz @ 20°C  
X7R = 1Vrms @ 1kHz @ 20°C

**Mechanical**

- Termination Material**  
Nickel Barrier or FlexiCap™
- Solderability**  
IEC 68-2-20
- Reeled Quantities**  
178mm (7") reel = 1,500  
330mm (13") reel = 6,000

**Specification**

- EN 132400:1994 + A2:1998  
+ A3:1998  
+ A4:1999
- IEC 60384-14 2<sup>nd</sup> edition 1993 + A1:1995
- Meets the electrical requirements of these specifications for class Y2/X1 devices.
- IEEE 802.3  
Meets the 1500Vrms isolation requirements of section 12.10.1 of this specification.

Marked parts can be released as certified by TÜV. Unmarked parts can be supplied tested in accordance with, but not certified by TÜV.



**Ordering Information**

1808	J	A25	0471	K	X	T	SY2
<b>Chip Size</b>	<b>Termination</b> J = Nickel Barrier Y = FlexiCap™	<b>Voltage</b> A25 = 250VAC	<b>Capacitance</b> Expressed in picofarads (pF)*	<b>Tolerance</b> <10pF C = ±0.25pF D = ±0.5pF ≥ 10pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	<b>Dielectric</b> C = COG/NPO X = X7R	<b>Packaging</b> T = 178mm (7") reel 1,500 pieces R = 330mm (13") reel 6,000 pieces B = Bulk	SY2 = Surge Protection capacitors unprinted PY2 = Surge Protection capacitors printed

\*First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of zeros following. Example: 0102=1000pF. For values below 10pF insert a P for the decimal point. eg: 4P20 = 4.7pF

	SAFETY CLASSIFICATION	SYFER PRODUCT			APPROVAL SPECIFICATION	APPROVAL BODY	CERTIFICATE NUMBER	FLEXICAP™ OPTION (TÜV only)
		CHIP SIZE	DIELECTRIC	CAP RANGE				
↑ SURGE PROTECTION	Y2/X1** <i>SV2</i>	1808	COG/NPO	4.7pF to 220pF	IEC60384-14:1993 EN132400:1994	TÜV	R60007460	✓
	Y2/X1** <i>SV2</i>	1808	X7R	150pF to 1nF	IEC60384-14:1993 EN132400:1994	TÜV	R60007460	✓
	Y3/X2* <i>SP</i>	1808	COG/NPO	4.7pF to 1.0nF	IEC60384-14:1993 EN132400:1994 } UL60950***	SEMKO } TÜV } UL	0101155/01-02 R2110618 E235189	✓
	Y3/X2* <i>SP</i>	1808	X7R	150pF to 2.2nF 150pF to 1nF	IEC60384-14:1993 EN132400:1994 } UL60950***	TÜV } UL	R60003323 E235189	✓
	Y2/X1** <i>SV2</i>	1812	COG/NPO	4.7pF to 470pF	IEC60384-14:1993 EN132400:1994	TÜV	R60010910	✓
	Y2/X1** <i>SV2</i>	1812	X7R	150pF to 1.0nF	IEC60384-14:1993 EN132400:1994	TÜV	R60010910	✓
	Y2/X1** <i>SP</i>	2211	COG/NPO	4.7pF to 680pF	IEC60384-14:1993 EN132400:1994 } UL60950***	SEMKO } TÜV } UL	0132054/01-02 R60001955 E235189	✓
	Y2/X1** <i>SP</i>	2211	X7R	100pF to 1.0nF	IEC60384-14:1993 EN132400:1994 } UL60950***	TÜV } UL	R60003753 E235189	✓
	Y2/X1** <i>SP</i>	2215	COG/NPO	820pF to 1.0nF	IEC60384-14:1993 EN132400:1994 } UL60950***	SEMKO } TÜV } UL	0132054/01-02 R60001955 E235189	✓
	Y2/X1 <i>B16</i>	2220	X7R	150pF to 4.7nF	IEC60384-14:1993 EN132400:1994 } UL1414: 6th Edition	TÜV } UL	R60006629 E228790	✓
X2 <i>B17</i>	2220	X7R	150pF to 10.0nF	IEC60384-14:1993 EN132400:1994 }	TÜV	R60006629	✓	



\* Only approved for use in equipment certified to IEC60950:1992 edition  
 \*\* Approved for use in equipment certified to IEC60950:2000 edition  
 \*\*\* Formerly UL1950



Syfer Technology Limited  
 Old Stoke Road, Arminghall, Norwich  
 Norfolk NR14 8SQ England

Telephone (General): +44 1603 723300  
 Telephone (Sales): +44 1603 723310  
 Fax: +44 1603 723301  
 Email: sales@syfer.co.uk

