



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)	0.25 - 1.0mm (0.01" - 0.04")

Chip Size 1812

Length (L1)	4.5mm ± 0.35mm (0.18" ± 0.014")
Width (W)	3.2mm ± 0.30mm (0.126" ± 0.012")
Thickness (H)	2.5mm (0.1") Max.
Termination Bands (L2)	0.25 - 1.0mm (0.01" - 0.04")

Chip Size 2220

Length (L1)	5.7mm ± 0.40mm (0.225" ± 0.016")
Width (W)	5.0mm ± 0.40mm (0.197" ± 0.016")
Thickness (H)	2.5mm (0.1") Max.
Termination Bands (L2)	0.25 - 1.0mm (0.01" - 0.04")

Chip Size 2225

Length (L1)	5.7mm ± 0.40mm (0.225" ± 0.016")
Width (W)	6.3mm ± 0.40mm (0.25" ± 0.016")
Thickness (H)	2.5mm (0.1") Max.
Termination Bands (L2)	0.25 - 1.0mm (0.01" - 0.04")

High Voltage 4kV - 6kV Capacitors

COG & X7R Range

Syfer Technology's range of 4kV - 6kV rated capacitors are available in 1808, 1812, 2220 and 2225 case sizes. Until now the minimum case size required to accommodate 4kV capacitors has been the larger and more costly 3640.

The innovative design of the new range has been engineered to reduce arcing across the surface of the capacitor, although conformal coating by the user is required to ensure the rated voltage can be applied.

To limit the possibility of mechanical cracking and enhance reliability, the successful Syfer FlexiCap™ termination is applied across the full range as standard.

The range will particularly suit applications in the communications, telecoms, industrial and military markets. Specific applications include inverters and backlighting circuits for liquid crystal displays.



Specification

Capacitance Values

COG/NPO
1.0pF - 1200pF

X7R
68pF - 5600pF

See overleaf for full list of values

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)
1.2 x rated voltage, when conformally coated

Rated voltage
4kV to 6kV

See overleaf for full list of values

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 ≤ 1nF
= 1Vrms @ 1kHz @ 20°C >1nF
X7R = 1Vrms @ 1kHz @ 20°C

Mechanical

Termination Material

FlexiCap™ (nickel barrier with polymeric termination)

Solderability

IEC 68-2-20

Reeled Quantities

1808	178mm (7") reel = 1,500
	330mm (13") reel = 6,000
1812, 2220 & 2225	178mm (7") reel = 1,000
	330mm (13") reel = 4,000

RoHS Compliance

This range fully complies with the RoHS, WEEE and ELV Directives and is suitable for soldering with lead-free solders.

Ordering Information

1808	Y	4K0	0101	K	X	T
Chip Size 1808 1812 2220 2225	Termination Y = FlexiCap™	Voltage 4K0 = 4KV 5K0 = 5KV 6K0 = 6KV	Capacitance Expressed in picofarads (pF)*	Tolerance <10pF C = ±0.25pF D = ±0.5pF ≥ 10pF F = ±1% G = ±2% J = ±5% K = ±10% M = ±20%	Dielectric C = COG/NPO X = X7R	Packaging T = 178mm (7") reel R = 330mm (13") reel B = Bulk

*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

4kV-6kV COG Range Specifications

4kV-6kV X7R Range Specifications

Size	Thickness	Capacitance ranges		
		4kV	5kV	6kV
1808	2mm	1.0p - 150p	1.0p - 82p	1.0p - 56p
1812	2.5mm	2.2p - 390p	2.2p - 270p	2.2p - 220p
2220	2.5mm	10p - 1.0n	10p - 680p	10p - 470p
2225	2.5mm	10p - 1.2n	10p - 820p	10p - 560p

Size	Thickness	Capacitance ranges		
		4kV	5kV	6kV
1808	2mm	100p - 1.0n	100p - 680p	68p - 390p
1812	2.5mm	100p - 2.2n	100p - 1.2n	100p - 1.0n
2220	2.5mm	100p - 4.7n	100p - 3.9n	100p - 2.2n
2225	2.5mm	100p - 5.6n	100p - 4.7n	100p - 2.7n

Surface Mount Chip Capacitors

Quick Reference Guide

		0603	0805	1206	1210	1808	1812	2220	2225	3640	5550	8060
16V	COG	0.47p-1.5n	1.0p-6.8n	1.0p-22n	3.9p-33n	n/a	10p-100n	10p-150n	10p-220n	n/a	n/a	n/a
	X7R	100p-100n	100p-330n	100p-1.0μ	1.0n-1.5μ	n/a	3.9n-3.3μ	10n-5.6μ	18n-6.8μ	n/a	n/a	n/a
25V	COG	0.47p-1.0n	1.0p-4.7n	1.0p-15n	3.9p-22n	n/a	10p-68n	10p-100n	10p-150n	n/a	n/a	n/a
	X7R	100p-56n	100p-220n	100p-820n	1.0n-1.2μ	n/a	3.9n-2.2μ	10n-4.7μ	18n-5.6μ	n/a	n/a	n/a
50/63V	COG	0.47p-470p	1.0p-2.7n	1.0p-8.2n	3.9p-18n	n/a	10p-33n	10p-68n	10p-100n	n/a	n/a	n/a
	X7R	100p-47n	100p-180n	100p-470n	1.0n-680n	n/a	3.9n-1.5μ	10n-2.2μ	18n-3.3μ	n/a	n/a	n/a
100V	COG	0.47p-330p	1.0p-1.8n	1.0p-6.8n	3.9p-12n	n/a	10p-27n	10p-47n	10p-68n	n/a	n/a	n/a
	X7R	100p-10n	100p-47n	100p-150n	1.0n-330n	n/a	3.9n-1.0μ	10n-1.2μ	18n-1.5μ	n/a	n/a	n/a
200/250V	COG	0.47p-100p	1.0p-680p	1.0p-2.2n	3.9p-4.7n	4.7p-4.7n	10p-12n	10p-22n	10p-27n	n/a	n/a	n/a
	X7R	100p-5.6n	100p-27n	100p-100n	1n-220n	15p-180n	3.9n-470n	10n-680n	18n-1.0μ	n/a	n/a	n/a
500V	COG	n/a	1.0p-330p	1.0p-1.5n	3.9p-3.3n	4.7p-3.3n	10p-10n	10p-15n	10p-22n	10p-56n	390p-100n	680p-180n
	X7R	n/a	10p-8.2n	10p-33n	15p-100n	15p-100n	22p-270n	180p-560n	180p-820n	390p-1.0μ	560p-1.8μ	10n-3.3μ
630V	COG	n/a	1.0p-180p	1.0p-1.0n	3.9p-1.8n	4.7p-2.2n	10p-5.6n	10p-10n	10p-15n	n/a	n/a	n/a
	X7R	n/a	n/a	10p-10n	15p-27n	15p-33n	22p-150n	180p-330n	180p-390n	390p-680n	560p-1.2μ	10n-2.2μ
1kV	COG	n/a	n/a	1.0p-470p	3.9p-1.0n	4.7p-1.2n	10p-3.3n	10p-8.2n	10p-10n	10p-22n	390p-39n	680p-68n
	X7R	n/a	n/a	10p-2.7n	15p-6.8n	15p-18n	22p-56n	180p-120n	180p-150n	390p-180n	560p-390n	10n-1.0μ
2kV	COG	n/a	n/a	1.0p-100p	3.9p-220p	4.7p-220p	10p-820p	10p-1.8n	10p-2.2n	10p-5.6n	390p-10n	680p-18n
	X7R	n/a	n/a	10p-1.0n	15p-2.2n	15p-2.2n	22p-4.7n	180p-12n	180p-15n	390p-47n	560p-82n	10n-150n
3kV	COG	n/a	n/a	n/a	n/a	4.7p-100p	10p-390p	10p-820p	10p-1.0n	10p-2.2n	390p-4.7n	680p-8.2n
	X7R	n/a	n/a	n/a	n/a	15p-1.0n	22p-1.8n	180p-5.6n	180p-6.8n	390p-18n	560p-39n	10n-68n
4kV	COG	n/a	n/a	n/a	n/a	1.0p-150p	2.2p-390p	10p-1.0n	10p-1.2n	10p-1.0n	390p-2.2n	680p-4.7n
	X7R	n/a	n/a	n/a	n/a	100p-1.0n	100p-2.2n	100p-4.7n	100p-5.6n	390p-6.8n	560p-15n	10n-33n
5kV	COG	n/a	n/a	n/a	n/a	1.0p-82p	2.2p-270p	10p-680p	10p-820p	10p-560p	390p-1.5n	680p-3.3n
	X7R	n/a	n/a	n/a	n/a	100p-680p	100p-1.2n	100p-3.9n	100p-4.7n	n/a	560p-8.2n	10n-18n
6kV	COG	n/a	n/a	n/a	n/a	1.0p-56p	2.2p-220p	10p-470p	10p-560p	n/a	n/a	n/a
	X7R	n/a	n/a	n/a	n/a	68p-390p	100p-1.0n	100p-2.2n	100p-2.7n	n/a	n/a	n/a



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