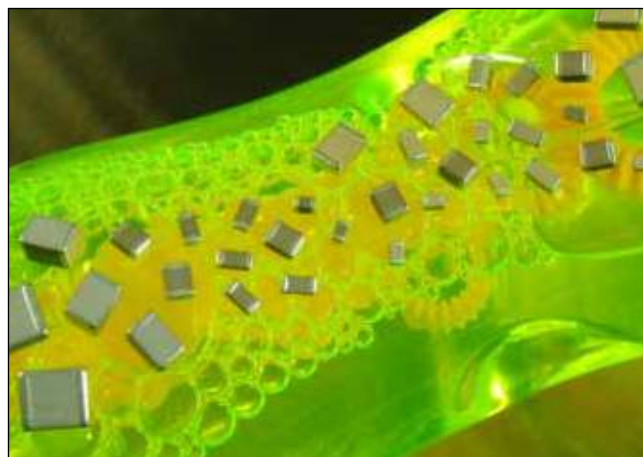


# 250Vac Rated 50/60Hz AC Capacitors - C0G/NP0 & X7R

Industry wide standard multilayer ceramic capacitors are supplied with a DC rating only. For AC use, Surge and Safety capacitors with an AC rating of 250Vac have been available but the capacitance range is limited as a result of the strict impulse and VP requirements in the international standards. Knowles Technology have developed a range which provides a solution for use at up to 250Vac 60Hz continuous use and provides for non safety-critical applications where extended capacitance ranges are required.

## Capacitance range

Case sizes 0805 to 2220 are available in both X7R and C0G/NP0 dielectrics with capacitances of up to 120nF. The capacitance ranges are divided into four groups which are based on the voltage coefficient of capacitance, C0G/NP0 which has negligible capacitance shift with applied voltage and three subgroups of X7R. Type A with  $\pm 30\%$  maximum capacitance shift 0V-240V, Type B with  $+30\%$  to  $-50\%$  maximum capacitance shift 0V-240V and Type C with  $+30\%$  to  $-80\%$  maximum capacitance shift 0V to 240V.



## 250Vac Rated 50/60Hz AC capacitors - minimum/maximum capacitance values

Chip size	0805	1206	1210	1808	1812	2220
C0G/NP0	1.0pF - 470pF	1.0pF - 1.2nF	4.7pF - 2.2nF	4.7pF - 2.2nF	10pF - 5.6nF	10pF - 10nF
X7R A $\pm 30\%$	560pF - 1.5nF	1.5nF - 10nF	2.7nF - 22nF	2.7nF - 22nF	6.8nF - 56nF	12nF - 120nF
X7R B $+30\%$ -50%	1.8nF - 3.3nF	12nF	27nF	27nF	68nF - 82nF	-
X7R C $+30\%$ -80%	3.9nF - 10nF	15nF - 47nF	33nF - 100nF	33nF - 100nF	100nF - 120nF	-

Note: X7R A) has a VCC of  $\pm 30\%$  over 0 to 240Vac 60Hz

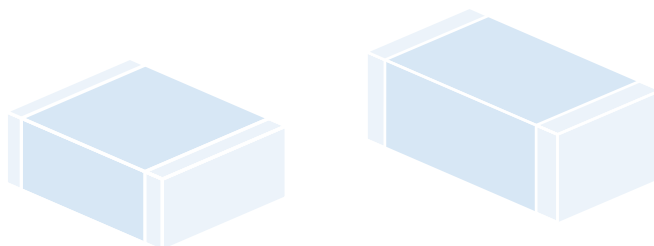
X7R B) has a VCC of  $+30\%$  to  $-50\%$  over 0 to 240Vac 60Hz

X7R C) has a VCC of  $+30\%$  to  $-80\%$  over 0 to 240Vac 60Hz

Measurement conditions described in Knowles Application Notes AN0033. Please see our website [www.knowlescapacitors.com](http://www.knowlescapacitors.com) for further details.

## Ordering information - 250Vac Rated 50/60Hz AC capacitors

1812	Y	A25	0103	K	J	T
Chip size	Termination	Voltage	Capacitance in picofarads (pF)	Capacitance tolerance	Dielectric codes	Packaging
0805 1206 1210 1808 1812 2220	Y = FlexiCap™ termination base with nickel barrier (100% matte tin plating). RoHS compliant. J = Nickel barrier (100% matte tin plating). RoHS compliant. Lead free.	A25 = 250Vac 60Hz	<10pF Insert a P for the decimal point, eg P300 = 0.3pF, 8P20 = 8.2pF. ≥10pF 1st digit is 0. 2nd and 3rd digits are significant figures of capacitance code. The 4th digit is number of 0's following eg. 0103 = 10nF	<10pF B = $\pm 0.1\text{pF}$ C = $\pm 0.25\text{pF}$ D = $\pm 0.5\text{pF}$ ≥10pF F = $\pm 1\%$ G = $\pm 2\%$ J = $\pm 5\%$ K = $\pm 10\%$ M = $\pm 20\%$	C = C0G/NP0 J = X7R (BME) X = X7R	T = 178mm (7") reel R = 330mm (13") reel B = Bulk pack - tubs or trays



Should be ordered as Syfer parts

DLI-JohansonMFG-Novacap-Syfer-Voltronics

[www.knowlescapacitors.com](http://www.knowlescapacitors.com)