



**THE DATASHEET OF**  
**2220Y1K00103KST**



Now available with FlexiCap™ termination (X7R only)



# PSL range of MLC capacitors



## COG/NP0 & X7R MLCCs

The PSL range of multilayer ceramic capacitors is suitable for a variety of applications including: commercial (such as power supplies, DC-DC converters, LED lighting), military, industrial, automotive and aerospace.

This range is manufactured to exacting standards using our unique screen printing process. This provides a high quality component suitable for demanding applications.

## Specification

### Capacitance Values

COG/NP0	X7R
4.7pF - 47nF	220pF - 1.5µF

See table for full list of values

### Electrical

#### Operating Temperature

-55°C to +125°C

#### Temperature Coefficient of Capacitance (Typical)

COG/NP0	X7R
30ppm/°C	±15%

#### Insulation Resistance

Time constant (Ri xCr) (whichever is the least)

100GΩ or 1000s

#### Ageing Rate

COG/NP0	X7R
Zero	X7R typically less than 2% per time decade

### Mechanical

#### Termination Material

See ordering information overleaf

#### Solderability

IEC 60068-2-58. Passed 3 times reflow profile defined in J-STD-020

#### Lead Free Soldering

This range is fully compliant with the RoHS and WEEE directives and parts are compatible with lead free solders.

#### Climatic Category

55/125/56

#### Reeled Quantities

See taped quantities table overleaf

## PSL Features

- 0805 to 2220 chip sizes
- COG/NP0 and X7R dielectric options
- Capacitance range COG/NP0 from 4.7pF up to 47nF
- Capacitance range X7R from 220pF up to 1.5µF
- Voltage ratings from 50V to 5kV
- AEC-Q200 qualified parts for Hi-Rel and Automotive applications
- RoHS compliant
- Available ex-stock from global distribution partners
- Sample kits available



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www.knowlescapacitors.com

## Product ranges - Capacitance values

Rated Voltage	Chip Size											
	0805		1206		1210		1808		1812		2220	
	COG/NP0	X7R	COG/NP0	X7R	COG/NP0	X7R	COG/NP0	X7R	COG/NP0	X7R	COG/NP0	X7R
<b>Min Cap</b>	4.7pF	220pF	10pF	470pF	22pF	1nF	22pF	1nF	47pF	1nF	68pF	1nF
<b>50V / 63V</b>	-	100nF	-	470nF	-	1µF	-	470nF	-	-	-	-
<b>100V</b>	1.8nF	47nF	4.7nF	150nF	8.2nF	330nF	8.2nF	270nF	18nF	680nF	47nF	1.5µF
<b>200V / 250V</b>	1nF	27nF	3.3nF	100nF	6.8nF	180nF	6.8nF	180nF	15nF	470nF	33nF	1µF
<b>500V</b>	680pF	10nF	2.2nF	56nF	4.7nF	100nF	4.7nF	100nF	12nF	220nF	22nF	560nF
<b>630V</b>	330pF	5.6nF	1.8nF	47nF	3.3nF	68nF	3.3nF	68nF	10nF	150nF	12nF	330nF
<b>1kV</b>	150pF	3.3nF	1.5nF	10nF	2.2nF	22nF	2.2nF	22nF	5.6nF	68nF	10nF	100nF 120nF
<b>1.5kV</b>	68pF	-	390pF	-	680pF	-	680pF	-	2.2nF	-	4.7nF	-
<b>2kV</b>	47pF	-	220pF	1nF 2.2nF	470pF	4.7nF	470pF	3.3nF	1nF	10nF	2.2nF	-
<b>2.5kV</b>	-	-	100pF	-	180pF	-	270pF	-	680pF	-	1.5nF	-
<b>3kV</b>	-	-	68pF	-	150pF	-	220pF	-	470pF	-	1nF	-
<b>4kV</b>	-	-	-	-	-	-	100pF	-	220pF	-	680pF	-
<b>5kV</b>	-	-	-	-	-	-	68pF	-	180pF	-	330pF	-

**NOTE:** Other capacitance values may become available, please contact our Sales Office if you need values other than those shown in the above table. For dimensions and soldering information, please go to our website ([www.syfer.com](http://www.syfer.com)) or see our MLC Catalogue.

■ = AEC-Q200

## Taped quantities

Chip Size	0805	1206	1210	1808	1812	2220
<b>7" Reel</b>	3,000	2,500	2,000	1,500	500/1,000*	500/1,000*
<b>13" Reel</b>	12,000	10,000	8,000	6,000	2,000/4,000*	2,000/4,000*

\*Reel quantity depends on chip thickness. Please contact Sales Office.

## Ordering information - PSL capacitors

1206	J	1K0	0103	K	J	T
Chip size	Termination	Voltage	Capacitance in picofarads (pF)	Capacitance tolerance	Dielectric	Packaging
<b>0805</b> <b>1206</b> <b>1210</b> <b>1808</b> <b>1812</b> <b>2220</b>	<b>J</b> = Nickel barrier with 100% matte tin plating. RoHS compliant. Lead free. <b>Y</b> =FlexiCap™ termination base with nickel barrier (100% matte tin plating). RoHS compliant. Lead free. (X7R only). Note: AEC-Q200 qualified parts only available with FlexiCap™ termination.	<b>050</b> = 50V <b>063</b> = 63V <b>100</b> = 100V <b>200</b> = 200V <b>250</b> = 250V <b>500</b> = 500V <b>630</b> = 630V <b>1K0</b> = 1kV <b>1K5</b> = 1.5kV <b>2K0</b> = 2kV <b>2K5</b> = 2.5kV <b>3K0</b> = 3kV <b>4K0</b> = 4kV <b>5K0</b> = 5kV	First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is number of 0's following Example: <b>0103</b> = 10000pF	<b>COG/NP0</b> <b>F</b> = ±1% <b>G</b> = ±2% <b>J</b> = ±5% <b>K</b> = ±10% <b>X7R</b> <b>K</b> = ±10% <b>M</b> = ±20%	<b>G</b> = COG/NP0 <b>J</b> = X7R <b>S</b> = X7R AEC-Q200	<b>T</b> = 178mm (7") reel <b>R</b> = 330mm (13") reel <b>B</b> = Bulk pack - tubs



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