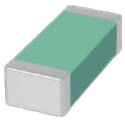
SMD Extended Range

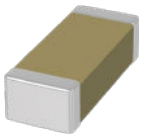
6.3V - 2000V NPO-X7R-X5R

SRT MICROCÉRAMIQUE
MLCC CAPACITORS

FEATURES

- **Defense applications**
- **Extended range**
- **Equivalence to concurrent design**
- **Low ESR, ESL**





RoHS compliant

Pb

TEMPERATURE COEFFICIENT :
NP0 : ± 30ppm
X7R, X5R : ± 15% with 0Vdc applied

AGING RATE :
X7R,X5R : 2% per decade

Dissipation Factor :
NP0 : ≤ 1.10^{-3} at 1Vrms and 1MHz for values ≤ 1000pF
≤ 1.10^{-3} at 1Vrms and 1KHz for values > 1000pF
X7R : ≤ 0.025 at 1kHz

X5R : ≤ 0.10 at 1kHz

INSULATION RESISTANCE (IR) :
25°C/Un 10^5 MOhm or 1000 Ohm-Farad whichever is less
125°C/Un 10^4 MOhm or 100 Ohm-Farad whichever is less

DIELECTRIC STRENGTH TEST :
2.5Un U≤200V I U+250V 200<U≤500 I 1.5U 500<U<1000 I 1.2U U≥1000
for 5s with 50mA max charging current

ELECTRICAL PARAMETERS

ELECTRICAL CHARACTERISTICS :
at + 25°C unless otherwise specified

OPERATING TEMPERATURE :
NPO, X7R : - 55°C, + 125°C
X5R : - 55°C, +85°C

QUICK REFERENCE DATA (MAX VALUE)

	0201			0402			0603			0805			1206			1210		
	NP0	X7R	X5R	NP0	X7R	X5R	NP0	X7R	X5R	NP0	X7R	X5R	NP0	X7R	X5R	NP0	X7R	X5R
6,3V	1.0 nF	33 nF	2.2 µF	2.2 nF	1.0 µF	10 µF	27 nF	4.7 µF	47 µF	47 nF	10 µF	100 µF	220 nF	22 µF	**100 µF**	220 nF	47 nF	220 µF
10V	1.0 nF	33 nF	1.0 µF	2.2 nF	470 nF	**10 µF**	27 nF	4.7 µF	22 µF	47 nF	10 µF	47 µF	220 nF	22 µF	**100 µF**	220 nF	47 nF	100 µF
16V	1.0 nF	33 nF	1.0 µF	2.2 nF	**330 nF**	**4.7 µF**	27 nF	**4.7 µF**	**22 µF**	47 nF	10 µF	**47 µF**	220 nF	22 µF	**100 µF**	220 nF	22 µF	100 µF
25V	1.0 nF	**33 nF**		2.2 nF	**330 nF**	1.0 µF	27 nF	**4.7 µF**	10 µF	47 nF	4.7 µF	22 µF	220 nF	10 µF	**47 µF**	220 nF	22 µF	47 µF
35V	220 pF	1.5 nF		1.5 nF	**330 nF**	**1.0 µF**	27 nF	**2.2 µF**	**4.7 µF**	47 nF	4.7 µF	**22 µF**	220 nF	10 µF	**22 µF**	150 nF	22 µF	22 µF
50V	220 pF	1.5 nF		1.5 nF	**330 nF**	**1.0 µF**	10 nF	1.0 µF		47 nF	4.7 µF	**10 µF**	220 nF	10 µF	**10 µF**	150 nF	22 µF	10 µF
63V				1.0 nF	**100 nF**		10 nF	**330 nF**		**47 nF**	1.0 µF	**4.7 µF**	100 nF	2.2 µF	**3.3 µF**	100 nF	10 µF	**4.7 µF**
100V				1.0 nF	**100 nF**		10 nF	**330 nF**		**47 nF**	1.0 µF	**1.0 µF**	100 nF	2.2 µF		100 nF	10 µF	**4.7 µF**
150V					**12 nF**		2.2 nF	**47 nF**		**47 nF**	470 nF		22 nF	**1.0 µF**		47 nF	1.0 µF	
200V					**10 nF**		2.2 nF	39 nF		**47 nF**	470 nF		22 nF	**1.0 µF**		47 nF	1.0 µF	
250V								27 nF		10 nF	82 nF		22 nF	**470 nF**		47 nF	680 nF	
500V										**8.2 nF**	33 nF		10 nF	82 nF		33 nF	180 nF	
630V										2.7 nF	33 nF		10 nF	56 nF			120 nF	
1000V										**2.2 nF**	5.6 nF		3.3 nF	**47 nF**			68 nF	
1500V														**18 nF**			39 nF	
2000V														4.7 nF			**10 nF**	

	1808			1812			1825			2220			2225		
	NP0	X7R	X5R	NP0	X7R	X5R	NP0	X7R	X5R	NP0	X7R	X5R	NP0	X7R	X5R
6,3V	22 nF	470 nF		220 nF	22 µF	100 µF	100 nF	10 µF		470 nF	47 µF	100 µF	100 nF	10 µF	
10V	22 nF	470 nF		220 nF	22 µF	100 µF	100 nF	10 µF		470 nF	47 µF	100 µF	100 nF	10 µF	
16V	22 nF	470 nF		220 nF	22 µF	**100 µF**	100 nF	10 µF		470 nF	47 µF	**100 µF**	100 nF	10 µF	
25V	22 nF	470 nF		220 nF	22 µF	**100 µF**	100 nF	10 µF		470 nF	47 µF	**100 µF**	100 nF	10 µF	
35V	22 nF	470 nF		220 nF	6.8 µF	**47 µF**	100 nF	10 µF		470 nF	47 µF	47 µF	100 nF	10 µF	
50V	22 nF	470 nF		220 nF	6.8 µF	**47 µF**	100 nF	10 µF		470 nF	47 µF	47 µF	100 nF	10 µF	
63V	22 nF	470 nF		150 nF	**6.8 µF**	**10 µF**	100 nF	10 µF		330 nF	22 µF	22 µF	100 nF	10 µF	
100V	22 nF	470 nF		150 nF	**6.8 µF**	**10 µF**	100 nF	10 µF		330 nF	22 µF	22 µF	100 nF	10 µF	
150V	22 nF	470 nF		100 nF	1.0 µF		82 nF	2.2 µF		150 nF	2.2 µF	**10 µF**	100 nF	2.7 µF	
200V	22 nF	470 nF		100 nF	1.0 µF		82 nF	2.2 µF		150 nF	2.2 µF	**4.7 µF**	100 nF	2.7 µF	
250V	22 nF	470 nF		100 nF	1.0 µF		82 nF	1.8 µF		150 nF	2.2 µF	2.2 µF	100 nF	2.7 µF	
500V	18 nF	220 nF		47 nF	470 nF		68 nF	820 nF		150 nF	1.0 µF		**100 nF**	1.0 µF	
630V	15 nF	120 nF		47 nF	270 nF		56 nF	560 nF		150 nF	1.0 µF		68 nF	820 nF	
1000V	6.8 nF	68 nF		15 nF	150 nF		33 nF	330 nF		100 nF	470 nF		47 nF	470 nF	
1500V	**3.3 nF**	15 nF		8.2 nF	**47 nF**		18 nF	82 nF		18 nF	100 nF		27 nF	120 nF	
2000V	**3.3 nF**	10 nF		3.9 nF	**47 nF**		10 nF	56 nF		12 nF	100 nF		15 nF	82 nF	

Highest value in Extended Range / *Highest Value in Standard Range for this value and lower refer to SMD Type I, SMD Type 2 and High Capacitance DataSheets*

This document is subject to change without notice.

ORDERING INFORMATION

1812	SE	476	M	A	X	B	-
SIZE	**DIELECTRIC**	**CAPACITANCE**	**TOLERANCE**	**VOLTAGE**	**TERMINATION**	**PACKAGING**	**SPECIAL PARAMETERS**
0201 0402 0603 0805 1206 1210 1808 1812 1825 2220 2225	AE = NPO YE = X7R SE = X5R	Expressed in picofarads (pF). The first two digits are significant, the third digit gives the number of noughts. Example : 102 = 1 000pF For special values R is used as decimal separator Example 12R7 = 12.7pF 1340R0 = 1340pF	F = ± 1% G = ± 2% J = ± 5% K = ± 10% M = ± 20%	R = 6.3V Q = 10V J = 16V X = 25V Z = 35V A = 50V U = 63V B = 100V C = 200V P = 250V E = 500V F = 630V G = 1000V O = 1500V H = 2000V	X = Nickel Tin W = Nickel Gold H = Dipped SnPb	B = Reel	- Dxx = Reliability spec Exx = Sorting spec

DIMENSIONS IN MILLIMETERS

		0201	0402	0603	0805	1206	1210	1812	2220
Length (L)		0.60 ± 0.03	1.00 ± 0.1	1.60 ± 0.2	2.00 ± 0.2	3.20 ± 0.2	3.20 ± 0.2	4.60 ± 0.3	5.60 ± 0.4
Width (W)		0.30 ± 0.03	0.50 ± 0.1	0.80 ± 0.2	1.25 ± 0.2	1.60 ± 0.2	2.50 ± 0.2	3.20 ± 0.2	5.10 ± 0.4
Thickness max (T)		0.35	0.60	0.92	1.40	1.70	2.50	3.30	4.00
Termination (P)	Min	0.10	0.10	0.25	0.25	0.25	0.25	0.25	0.25
	Max	0.20	0.40	0.40	0.70	0.70	0.80	0.80	0.80