High Temperature Surface Mount MLCCs 200°C

Johanson's high temperature MLCC series exhibit stable performance across an extended operating temperature range of -55°C to +200°C. Both Class I and Class II parts are available with DC voltage ratings of 50,100 and 200V satisfying a wide range of demanding applications.

Features

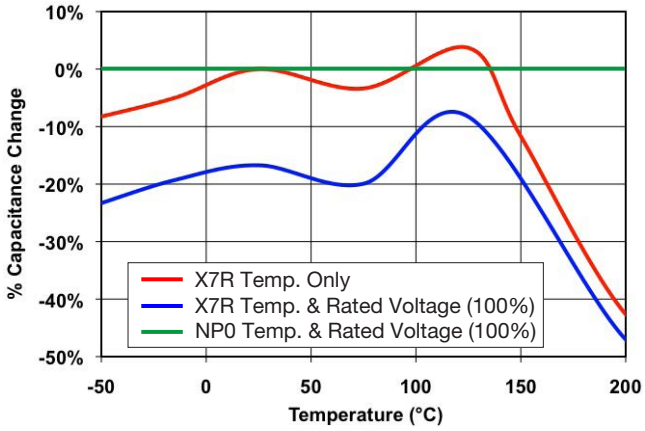
- Stable 200°C Operation
- Compact SMD Chip
- Polyterm® Termination Option
- Sn-Pb Termination Option

Applications

- Deep Hole Drilling Electronics
- High Temperature Modules
- Industrial Equipment
- Automotive
- Avionics

Electrical Characteristics

	NP0	X7R
OPERATING RANGE:	-55 to +200°C	-55 to +200°C
TEMPERATURE COEFFICIENT:	0±30ppm/°C (-55to+125°C)	0±15% (-55to+125°C)
200°C CAP. DROP:	-0.5% max.	-45% max.
DISSIPATION FACTOR:	0.001 (0.1%) max.	0.020 (2.0%) max.
AGING RATE:	None	<1.0% per decade
INSULATION RESISTANCE:	25°C IR >100GΩ or 1000ΩF (whichever 200°C IR >1ΩF or 100MΩ is less)	
WITHSTANDING VOLTAGE:	2.5 X WVDC for ratings ≤ 200 VDC 1.5 X WVDC for ratings 201-500 VDC	
TEST CONDITIONS:	C > 100 pF; 1kHz ±50Hz; 1.0±0.2 VRMS C ≤ 100 pF; 1Mhz ±50kHz; 1.0±0.2 VRMS	



Mechanical Characteristics

		Inches	(mm)
T07/0402	L	.040 ±.004	(1.02 ±.10)
	W	.020 ±.004	(0.51 ±.10)
	T	.025 Max.	(0.64)
	E/B	.008±.004	(.20±.10)
T14/0603	L	.063 ±.008	(1.60 ±.20)
	W	.032 ±.008	(0.81 ±.20)
	T	.035 Max.	(0.89)
	E/B	.010±.005	(.25±.13)
T15/0805	L	.080 ±.010	(2.03 ±.25)
	W	.050 ±.010	(1.27 ±.25)
	T	.055 Max.	(1.40)
	E/B	.020±.010	(0.51±.25)

RATED VOLTAGE	NP0 DIELECTRIC MINIMUM	NP0 DIELECTRIC MAXIMUM	X7R DIELECTRIC MINIMUM	X7R DIELECTRIC MAXIMUM
25 VDC	10 pF	270 pF	100 pF	4700 pF
50 VDC	10 pF	120 pF	100 pF	1500 pF
100 VDC	10 pF	82 pF	10 pF	390 pF
200 VDC	10 pF	50 pF	10 pF	100 pF
25 VDC	10 pF	820 pF	1000 pF	0.022 µF
50 VDC	10 pF	330 pF	1000 pF	0.010 µF
100 VDC	10 pF	220 pF	100 pF	2200 pF
200 VDC	10 pF	120 pF	100 pF	560 pF
25 VDC	100 pF	2200 pF	1000 pF	0.100 µF
50 VDC	100 pF	1500 pF	1000 pF	0.033 µF
100 VDC	100 pF	1000 pF	1000 pF	0.010 µF
200 VDC	10 pF	680 pF	100 pF	2200 pF

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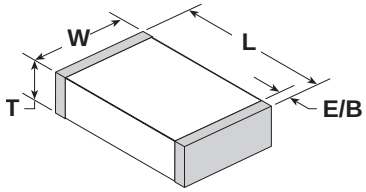
		Inches	(mm)	RATED VOLTAGE	NP0 DIELECTRIC MINIMUM	NP0 DIELECTRIC MAXIMUM	X7R DIELECTRIC MINIMUM	X7R DIELECTRIC MAXIMUM
T18/1206	L	.125 ±.010	(3.17 ±.25)	25 VDC	100 pF	6800 pF	1000 pF	0.220 µF
	W	.062 ±.010	(1.57 ±.25)	50 VDC	100 pF	3300 pF	1000 pF	0.100 µF
	T	.067 Max.	(1.70)	100 VDC	100 pF	2200 pF	1000 pF	0.022 µF
	E/B	.020±.010	(0.51±.25)	200 VDC	100 pF	1500 pF	1000 pF	5600 pF
T41/1210	L	.125 ±.010	(3.18 ±.25)	25 VDC	1000 pF	0.015 µF	0.047 µF	0.470 µF
	W	.095 ±.010	(2.41 ±.25)	50 VDC	1000 pF	5600 pF	0.047 µF	0.220 µF
	T	.090 Max.	(2.28)	100 VDC	100 pF	4700 pF	0.047 µF	0.056 µF
	E/B	.020±.010	(0.51±.25)	200 VDC	100 pF	3300 pF	0.0047 µF	0.015 µF
T43/1812	L	.175 ±.010	(4.45 ±.25)	25 VDC	1000 pF	0.033 µF	0.047 µF	1.000 µF
	W	.125 ±.010	(3.17 ±.25)	50 VDC	1000 pF	0.012 µF	0.047 µF	0.470 µF
	T	.110 Max.	(2.80)	100 VDC	1000 pF	0.010 µF	0.047 µF	0.180 µF
	E/B	.025±.015	(0.64±.38)	200 VDC	1000 pF	8200 pF	0.047 µF	0.047 µF
T49/1825	L	.180 ±.010	(4.57 ±.25)	25 VDC	1000 pF	0.033 µF	0.10 µF	2.200 µF
	W	.250 ±.010	(6.35 ±.25)	50 VDC	1000 pF	0.027 µF	0.10 µF	1.000 µF
	T	.140 Max.	(3.56)	100 VDC	1000 pF	0.022 µF	0.10 µF	0.560 µF
	E/B	.025±.015	(0.64±.38)	200 VDC	1000 pF	0.018 µF	0.10 µF	0.150 µF
T48/2225	L	.225 ±.010	(5.72 ±.25)	25 VDC	1000 pF	0.100 µF	0.10 µF	3.300 µF
	W	.255 ±.015	(6.48 ±.38)	50 VDC	1000 pF	0.039 µF	0.10 µF	1.500 µF
	T	.160 Max.	(4.06)	100 VDC	1000 pF	0.033 µF	0.10 µF	0.820 µF
	E/B	.025±.015	(0.64±.38)	200 VDC	1000 pF	0.022 µF	0.10 µF	0.220 µF



How to Order 200°C MLCCs

P/N written: 500T14W103KV4E

500	T14	W	103	K	V	4	E
VOLTAGE	**SIZE**	**DIELECTRIC**	**CAPACITANCE**	**TOLERANCE**	**TERMINATION**	**MARKING**	**PACKING**
250 = 25 V 500 = 50 V 101 = 100 V 201 = 200 V	T07 = 0402 T14 = 0603 T15 = 0805 T18 = 1206 T41 = 1210 T43 = 1812 T49 = 1825 T48 = 2225	N = NP0 W = X7R	1st two digits are significant; third digit denotes number of zeros. 102 = 1000 pF 103 = 0.01 µF 104 = 0.10 µF	**NP0** J = ± 5% K = ± 10% **X7R** K = ± 10% M = ± 20%	V = Ni Barrier w/ 100% Sn Plating (150°C) T = Ni Barrier w/ 95%Sn/5%Pb Plating (150°C) E = Ni Barrier w/ 100% Sn Plating (180°C) P = Palladium Silver Pd-Ag (200°C)	4 = Unmarked (Not available)	E = Embossed 7” T = Punched 7” No code = bulk Tape specs. per EIA RS481