





# High Voltage MLC Chips

## For 600V to 5000V Applications



### X7R Dielectric

#### Performance Characteristics

Capacitance Range	10 pF to 0.82 µF (25°C, 1.0 ±0.2 Vrms at 1kHz)
Capacitance Tolerances	±10%; ±20%; +80%, -20%
Dissipation Factor	2.5% max. (+25°C, 1.0 ±0.2 Vrms, 1kHz)
Operating Temperature Range	-55°C to +125°C
Temperature Characteristic	±15% (0 VDC)
Voltage Ratings	600, 630, 1000, 1500, 2000, 2500, 3000, 4000 & 5000 VDC (+125°C)
Insulation Resistance (+25°C, at 500 VDC)	100K MΩ min. or 1000 MΩ - µF min., whichever is less
Insulation Resistance (+125°C, at 500 VDC)	10K MΩ min. or 100 MΩ - µF min., whichever is less
Dielectric Strength	Minimum 120% rated voltage for 5 seconds at 50 mA max. current

#### X7R CAPACITANCE RANGE – PREFERRED SIZES ARE SHADED

Case Size Soldering	0805			1206					1210					1808							1812								
	Reflow/Wave			Reflow/Wave					Reflow Only					Reflow Only							Reflow Only								
(L) Length mm (in.)	2.10 ± 0.20 (0.085 ± 0.008)			3.30 ± 0.30 (0.130 ± 0.012)					3.30 0.40 (0.130 0.016)					4.60 ± 0.50 (0.181 ± 0.020)							4.60 ± 0.50 (0.177 ± 0.012)								
(W) Width mm (in.)	1.25 ± 0.20 (0.049 ± 0.008)			1.60 +0.30/-0.10 (0.063 +0.012/-0.004)					2.50 0.30 (0.098 0.012)					2.00 0.20 (0.079 ± 0.008)							3.20 ± 0.30 (0.126 ± 0.008)								
(T) Thickness mm (in.)	1.35 (0.053)			1.80 (0.071)					2.80 (0.110)					2.20 (0.087)							2.80 (0.100)								
(t) Terminal mm max	0.50 ± 0.20 (0.020 ± 0.008)			0.60 ± 0.20 (0.024 ± 0.008)					0.75 0.35 (0.030 ± 0.014)					0.75 ± 0.35 (0.030 ± 0.014)							0.75 ± 0.35 (0.030 ± 0.014)								
Voltage (V)	600	630	1000	600	630	1000	1500	2000	600	630	1000	1500	2000	600	630	1000	1500	2000	2500	3000	4000	600	630	1000	1500	2000	2500	3000	4000
Cap (pF)	100	101	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F									
120	121	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	E	F									
150	151	X	X	C	C	C	E	E	E	E	E	E	E																
180	181	X	X	C	C	C	E	E	E	E	E	E	E																
220	221	X	X	C	C	C	E	E	E	E	E	E	E																
270	271	X	X	C	C	C	E	E	E	E	E	E	E																
330	331	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	E	F									
390	391	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F										
470	471	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	E	F										
560	561	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	E	F	F										
680	681	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	F	F											
750	751	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	F	F											
820	821	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	F	F											
1000	102	X	X	X	C	C	E	E	E	E	E	E	E	E	E	E	F	F											
1200	122	X	X	X	C	C	E	E	E	E	E	E	E	E	E	E	F	F											
1500	152	X	X	X	C	C	E	E	E	E	E	E	E	E	E	E	F	F											
1800	182	X	X	C	C	C	E	E	E	E	E	E	E	E	E	E	F	F											
2200	222	X	X	X	C	C	E	E	E	E	E	E	F	E	E	E	F	F	F										
2700	272	C	C		C	C	E	E		E	E	E	F	E	E	E	F	F											
3300	332	C	C		C	C	E			E	E	E	F	E	E	E	F	F											
3900	392	C	C		C	C	E			E	E	E	F			E	E	E	F										
4700	472	C	C		C	C	E			E	E	E	F			E	E	E	F										
5600	562	C	C		C	C	E			E	E	E	F			E	E	E	F										
6800	682	C	C		C	C	E			E	E	E				E	E	E	F										
8200	822	C	C		C	C	E			E	E	E				E	E	E											
Cap (µF)	0.010	103	C	C		C	C	E			E	E	E			E	E	E											
0.015	153	C	C		E	E	E			E	E	E				F	F	F											
0.018	183	C	C		E	E				E	E	E				F	F	F											
0.022	223	C	C		E	E				E	E	F				F	F	F											
0.027	273				E	E				E	E					F	F												
0.033	333				E	E				E	E					F	F												
0.039	393									E	E					F	F												
0.047	473									E	E					F	F												
0.056	563									F	F					F	F												
0.068	683									F	F					F	F												
0.082	823									F	F																		
0.100	104									F	F																		
0.150	154																												
0.220	224																												
0.270	274																												
0.330	334																												
0.390	394																												
0.470	474																												
0.560	564																												
0.680	684																												
0.820	824																												
1.000	105																												
Voltage (V)	600	630	1000	600	630	1000	1500	2000	600	630	1000	1500	2000	600	630	1000	1500	2000	2500	3000	4000	600	630	1000	1500	2000	2500	3000	4000

Letter	A	C	E	F	G	X	7
Max. Thickness	0.813 (0.032)	1.448 (0.057)	1.8034 (0.071)	2.2098 (0.087)	2.794 (0.110)	0.940 (0.037)	3.30 (0.130)

NOTE: Contact factory for non-specified capacitance values



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