

# High Voltage MLC Chips



For 600V to 5000V Applications

## C0G Dielectric

### Performance Characteristics

Capacitance Range	10 pF to 0.047 $\mu$ F (25°C, 1.0 $\pm$ 0.2 Vrms at 1kHz, for $\leq$ 1000 pF use 1 MHz)
Capacitance Tolerances	$\pm$ 5%, $\pm$ 10%, $\pm$ 20%
Dissipation Factor	0.1% max. (+25°C, 1.0 $\pm$ 0.2 Vrms, 1kHz, for $\leq$ 1000 pF use 1 MHz)
Operating Temperature Range	-55°C to +125°C
Temperature Characteristic	0 $\pm$ 30 ppm/°C (0 VDC)
Voltage Ratings	600, 1000, 1500, 2000, 2500, 3000, 4000 & 5000 VDC (+125°C)
Insulation Resistance (+25°C, at 500 VDC)	100K M $\Omega$ min. or 1000 M $\Omega$ - $\mu$ F min., whichever is less
Insulation Resistance (+125°C, at 500 VDC)	10K M $\Omega$ min. or 100 M $\Omega$ - $\mu$ F min., whichever is less
Dielectric Strength	120% rated voltage for 5 seconds at 50 mA max. current

## HIGH VOLTAGE C0G CAPACITANCE VALUES

VOLTAGE	1206	1210	1808	1812	1825	2220	2225	3640
600 min.	100 pF	100 pF	100 pF	100 pF	1000 pF	1000 pF	1000 pF	1000 pF
600 max.	680 pF	1500 pF	2700 pF	5600 pF	0.012 $\mu$ F	0.012 $\mu$ F	0.015 $\mu$ F	0.047 $\mu$ F
1000 min.	10 pF	100 pF	100 pF	100 pF	100 pF	1000 pF	1000 pF	1000 pF
1000 max.	470 pF	820 pF	1500 pF	2700 pF	6800 pF	0.010 $\mu$ F	0.010 $\mu$ F	0.018 $\mu$ F
1500 min.	10 pF	100 pF	10 pF	10 pF	100 pF	1000 pF	1000 pF	100 pF
1500 max.	150 pF	330 pF	470 pF	1000 pF	2700 pF	2700 pF	3300 pF	8200 pF
2000 min.	10 pF	10 pF	10 pF	10 pF	100 pF	1000 pF	1000 pF	100 pF
2000 max.	68 pF	150 pF	270 pF	680 pF	1800 pF	2200 pF	2200 pF	5600 pF
2500 min.	—	—	10 pF	10 pF	10 pF	100 pF	100 pF	100 pF
2500 max.	—	—	150 pF	390 pF	1000 pF	1000 pF	1200 pF	3900 pF
3000 min.	—	—	10 pF	10 pF	10 pF	10 pF	10 pF	100 pF
3000 max.	—	—	100 pF	330 pF	680 pF	680 pF	820 pF	2200 pF
4000 min.	—	—	10 pF	10 pF	10 pF	10 pF	10 pF	100 pF
4000 max.	—	—	39 pF	100 pF	220 pF	220 pF	330 pF	1000 pF
5000 min.	—	—	—	—	—	—	—	10 pF
5000 max.	—	—	—	—	—	—	—	680 pF

## X7R Dielectric

### Performance Characteristics

Capacitance Range	10 pF to 0.56 $\mu$ F (25°C, 1.0 $\pm$ 0.2 Vrms at 1kHz)
Capacitance Tolerances	$\pm$ 10%; $\pm$ 20%; +80%, -20%
Dissipation Factor	2.5% max. (+25°C, 1.0 $\pm$ 0.2 Vrms, 1kHz)
Operating Temperature Range	-55°C to +125°C
Temperature Characteristic	$\pm$ 15% (0 VDC)
Voltage Ratings	600, 1000, 1500, 2000, 2500, 3000, 4000 & 5000 VDC (+125°C)
Insulation Resistance (+25°C, at 500 VDC)	100K M $\Omega$ min. or 1000 M $\Omega$ - $\mu$ F min., whichever is less
Insulation Resistance (+125°C, at 500 VDC)	10K M $\Omega$ min. or 100 M $\Omega$ - $\mu$ F min., whichever is less
Dielectric Strength	120% rated voltage for 5 seconds at 50 mA max. current

## HIGH VOLTAGE X7R MAXIMUM CAPACITANCE VALUES

VOLTAGE	1206	1210	1808	1812	1825	2220	2225	3640
600 min.	1000 pF	1000 pF	.01 $\mu$ F	.01 $\mu$ F	.01 $\mu$ F	.01 $\mu$ F	.01 $\mu$ F	.01 $\mu$ F
600 max.	0.015 $\mu$ F	0.027 $\mu$ F	0.033 $\mu$ F	0.068 $\mu$ F	0.15 $\mu$ F	0.15 $\mu$ F	0.22 $\mu$ F	0.56 $\mu$ F
1000 min.	1000 pF	1000 pF	1000 pF	1000 pF	1000 pF	.01 $\mu$ F	.01 $\mu$ F	.01 $\mu$ F
1000 max.	4700 pF	0.010 $\mu$ F	0.015 $\mu$ F	0.027 $\mu$ F	0.068 $\mu$ F	0.068 $\mu$ F	0.082 $\mu$ F	0.22 $\mu$ F
1500 min.	100 pF	100 pF	100 pF	100 pF	1000 pF	1000 pF	1000 pF	.01 $\mu$ F
1500 max.	1200 pF	2700 pF	3900 pF	8200 pF	0.018 $\mu$ F	0.022 $\mu$ F	0.027 $\mu$ F	0.068 $\mu$ F
2000 min.	10 pF	100 pF	100 pF	100 pF	100 pF	1000 pF	1000 pF	1000 pF
2000 max.	470 pF	1000 pF	1800 pF	4700 pF	8200 pF	0.010 $\mu$ F	0.012 $\mu$ F	0.027 $\mu$ F
2500 min.	—	—	10 pF	10 pF	100 pF	1000 pF	1000 pF	1000 pF
2500 max.	—	—	1200 pF	2200 pF	5600 pF	6800 pF	8200 pF	0.022 $\mu$ F
3000 min.	—	—	10 pF	10 pF	100 pF	1000 pF	1000 pF	1000 pF
3000 max.	—	—	560 pF	1200 pF	2700 pF	3300 pF	4700 pF	0.018 $\mu$ F
4000 min.	—	—	—	—	—	—	—	100 pF
4000 max.	—	—	—	—	—	—	—	6800 pF
5000 min.	—	—	—	—	—	—	—	100 pF
5000 max.	—	—	—	—	—	—	—	3300 pF



# High Voltage MLC Chips



## Packaging of Chip Components

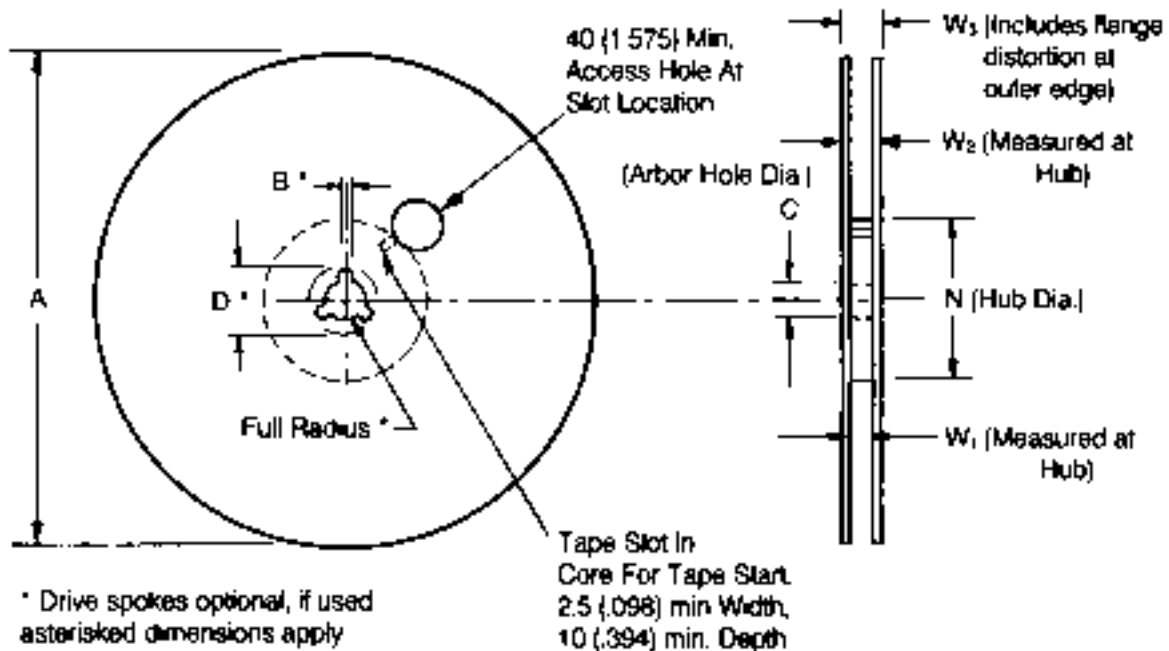
### AUTOMATIC INSERTION PACKAGING

#### TAPE & REEL QUANTITIES

All tape and reel specifications are in compliance with EIA481 & IEC-286-3.

	8mm	12mm		24mm
	1206 1210	1808	1812, 1825 2220, 2225	3640
Qty. per Reel/7" Reel	2000	2000	1000	N/A
Qty. per Reel/13" Reel	10,000	4000	4000	1000

#### REEL DIMENSIONS



#### DIMENSIONS

millimeters (inches)

Tape Size	A Max.	B* Min.	C	D* Min.	N Min.	W <sub>1</sub>	W <sub>2</sub> Max.	W <sub>3</sub>
8mm	330 (12.992)	1.5 (0.059)	13.0±0.20 (0.512±0.008)	20.2 (0.795)	50 (1.969)	8.4 <sup>+1.5</sup> <sub>-0.0</sub> (0.331 <sup>+0.060</sup> <sub>-0.0</sub> )	14.4 (0.567)	7.9 Min. (0.311) 10.9 Max. (0.429)
12mm	330 (12.992)	1.5 (0.059)	13.0±0.20 (0.512±0.008)	20.2 (0.795)	50 (1.969)	12.4 <sup>+2.0</sup> <sub>-0.0</sub> (0.488 <sup>+0.079</sup> <sub>-0.0</sub> )	18.4 (0.724)	11.9 Min. (0.469) 15.4 Max. (0.607)
24mm	360 (14.173)	1.5 (0.059)	13.0 <sup>+0.5</sup> <sub>-0.2</sub> (0.512 <sup>+0.020</sup> <sub>-0.008</sub> )	20.2 (0.795)	60 (2.362)	24.4 <sup>+2.0</sup> <sub>-0.0</sub> (0.961 <sup>+0.079</sup> <sub>-0.0</sub> )	30.4 (1.197)	23.9 Min. (0.941) 27.4 Max. (1.079)

# Mouser Electronics

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## AVX:

[18257C473KA1ME](#)

## Kyocera AVX:

[1206CA221KAT1A](#) [1206CA331KAT1A](#) [1206GA680KAT9A](#) [1808CA470MAT1A](#) [1808CC333KATME](#)  
[1808GA390KATME](#) [1808GC331MATME](#) [1812AA391JATME](#) [1812AA820KATME](#) [1812AC562KATME](#)  
[1812CA101KAT1A](#) [1812CA562JAT1A](#) [1812CC333KATME](#) [1808SC102KATME](#) [1812GC102KATME](#)  
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[2225CC823KA1ME](#) [3640GA102MAT9A](#) [3640JA102JAT9A](#) [1210CC273KA1ME](#) [3640CC564KATBE](#)  
[1206CA331JAT1A](#) [1812CC103KATME](#) [3640GC223KATRE](#) [1808CA332JATME](#) [1812HA181JATME](#)  
[3640AC224KA1BE](#) [1808CA332KAT1A](#) [2225GA152MA19A](#) [1206AA101JATME](#) [1206AA220KATME](#)  
[1206AA270KATME](#) [1206AA470KATBE](#) [1206AA470KATME](#) [1206AA470KAT9A](#) [1206AC102KATME](#)  
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[1206CA150KAT1A](#) [1206CA151JATBE](#) [1206CA151KATME](#) [1206CA181JAT1A](#) [1206CA181KATBE](#)  
[1206CA181KAT1A](#) [1206CA241MAT1A](#) [1206CA270JAT1A](#) [1206CA270KATME](#) [1206CA300KAT1A](#)  
[1206CA330JAT1A](#) [1206CA470KAT1A](#) [1206CA471JAT1A](#) [1206CA471KAT1A](#) [1206CA511JAT1A](#) [1206CA511KAT1A](#)  
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