

Low Inductance Capacitors

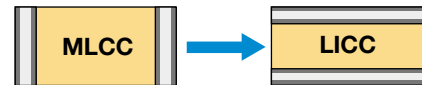
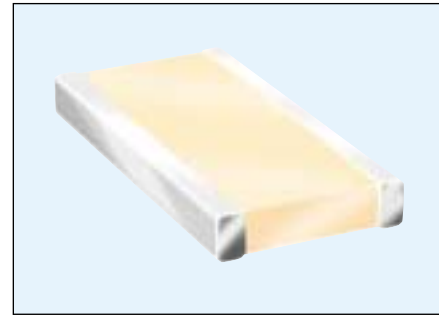


0612/0508/0306 LICC (Low Inductance Chip Capacitors)

GENERAL DESCRIPTION

The total inductance of a chip capacitor is determined both by its length to width ratio and by the mutual inductance coupling between its electrodes.

Thus a 1210 chip size has a lower inductance than a 1206 chip. This design improvement is the basis of AVX's Low Inductance Chip Capacitors (LICC), where the electrodes are terminated on the long side of the chip instead of the short side. The 1206 becomes an 0612, in the same manner, an 0805 becomes an 0508, an 0603 becomes an 0306. This results in a reduction in inductance from the 1nH range found in normal chip capacitors to less than 0.4nH for LICCs. Their low profile is also ideal for surface mounting (both on the PCB and on IC package) or inside cavity mounting on the IC itself.



HOW TO ORDER

0612

Size
0306
0508
0612

Z

Voltage
6 = 6.3V
Z = 10V
Y = 16V
3 = 25V

D

Dielectric
C = X7R
D = X5R

105

Capacitance Code
2 Sig. Digits +
Number of Zeros

M

Capacitance Tolerance
K = $\pm 10\%$
M = $\pm 20\%$

A

Failure Rate
A = N/A

T

Terminations
T = Plated Ni
and Solder

2

Packaging Available
2 = 7" Reel
4 = 13" Reel

A*

Thickness
Thickness
mm (in)
0.56 (0.022)
0.61 (0.024)
0.76 (0.030)
1.02 (0.040)
1.27 (0.050)

PERFORMANCE CHARACTERISTICS

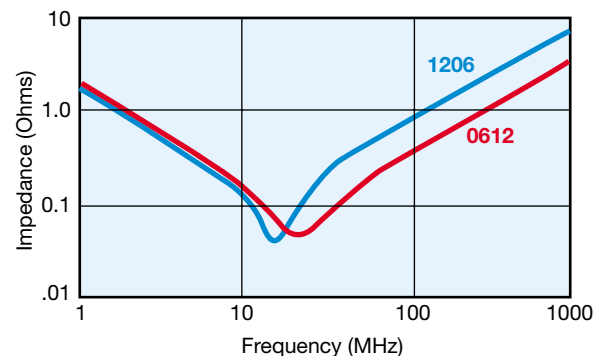
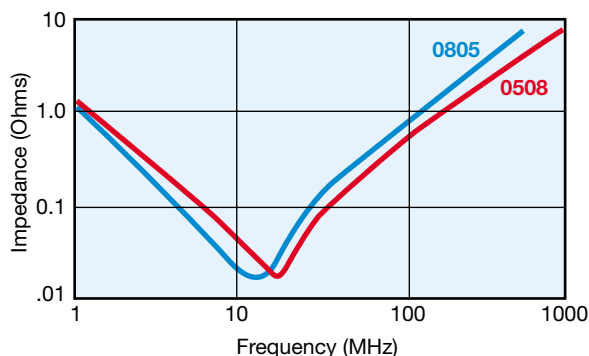
Capacitance Tolerances	K = $\pm 10\%$; M = $\pm 20\%$
Operation Temperature Range	X7R = -55°C to +125°C; X5R = -55°C to +85°C
Temperature Coefficient	$\pm 15\%$ (0VDC)
Voltage Ratings	6.3, 10, 16, 25 VDC
Dissipation Factor	6.3V = 6.5% max; 10V = 5.0% max; 16V = 3.5% max; 25V = 3.0% max
Insulation Resistance (@+25°C, RVDC)	100,000M Ω min, or 1,000M Ω per μ F min., whichever is less

TYPICAL INDUCTANCE

Package Style	Measured Inductance (pH)
1206 MLCC	1200
0612 LICC	450
0508 LICC	400
0306 LICC	325

*Note: See Range Chart for Codes

TYPICAL IMPEDANCE CHARACTERISTICS



Low Inductance Capacitors



0612/0508/0306 LICC (Low Inductance Chip Capacitors)

SIZE	0306			0508			0612			
Length	0.81 ± 0.15 (0.032 ± 0.006)			1.27 ± 0.25 (0.050 ± 0.010)			1.60 ± 0.25 (0.063 ± 0.010)			
Width	1.60 ± 0.15 (0.063 ± 0.006)			2.00 ± 0.25 (0.080 ± 0.010)			3.20 ± 0.25 (0.126 ± 0.010)			
WVDC	10	16	6.3	10	16	25	6.3	10	16	25
CAP (uF) and Thickness										
0.010										
0.015										
0.022										
0.047										
0.068										
0.10										
0.15										
0.22										
0.47										
0.68										
1.0										
1.5										
2.2										
3.3										

Consult factory for additional requirements

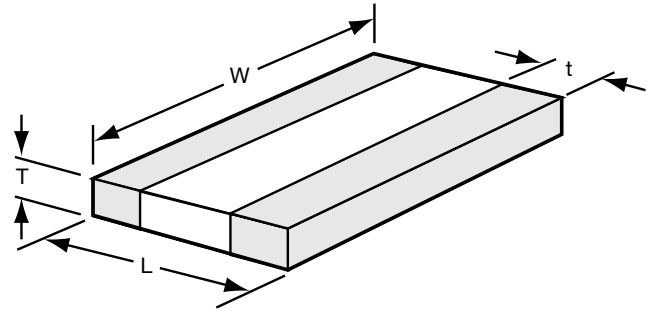
Solid = X7R = X5R

mm (in.)	
0306	
Code	Thickness
A	0.61 (0.024)

mm (in.)	
0508	
Code	Thickness
S	0.56 (0.022)
V	0.76 (0.030)
A	1.02 (0.040)

mm (in.)	
0612	
Code	Thickness
S	0.56 (0.022)
V	0.76 (0.030)
W	1.02 (0.040)
A	1.27 (0.050)

PHYSICAL DIMENSIONS AND PAD LAYOUT



PHYSICAL CHIP DIMENSIONS

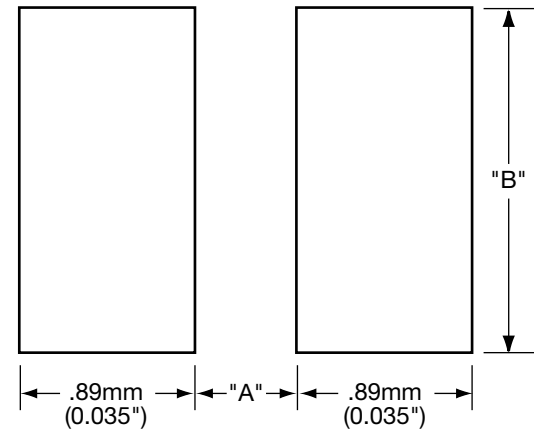
mm (in)

	L	W	t
0612	1.60 ± 0.25 (0.063 ± 0.010)	3.20 ± 0.25 (0.126 ± 0.010)	0.13 min. (0.005 min.)
0508	1.27 ± 0.25 (0.050 ± 0.010)	2.00 ± 0.25 (0.080 ± 0.010)	0.13 min. (0.005 min.)
0306	0.81 ± 0.15 (0.032 ± 0.006)	1.60 ± 0.15 (0.063 ± 0.006)	0.13 min. (0.005 min.)

T - See Range Chart for Thickness and Codes

PAD LAYOUT DIMENSIONS

	A	B
0612	0.76 (0.030)	3.05 (0.120)
0508	0.51 (0.020)	2.03 (0.080)
0306	0.31 (0.012)	1.52 (0.060)



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