

Low Inductance Capacitors

LICA® (Low Inductance Decoupling Capacitor Arrays)



LICA® arrays utilize up to four separate capacitor sections in one ceramic body (see Configurations and Capacitance Options). These designs exhibit a number of technical advancements:

Low Inductance features–

Low resistance platinum electrodes in a low aspect ratio pattern

Double electrode pickup and perpendicular current paths

C4 “flip-chip” technology for minimal interconnect inductance

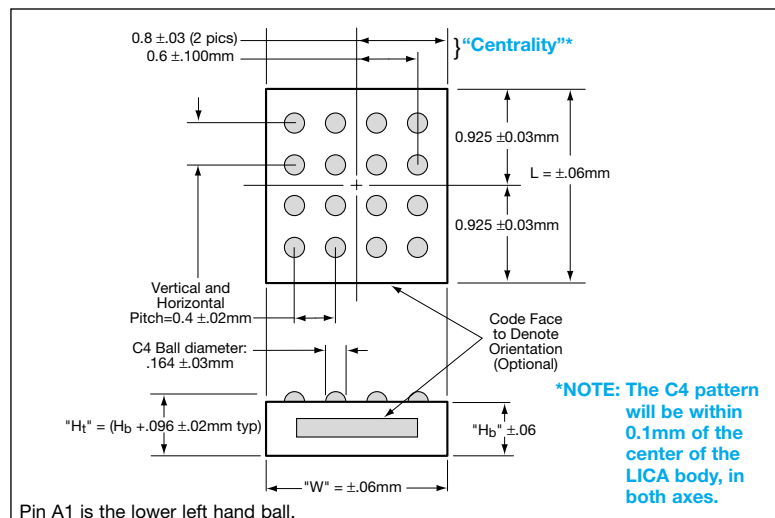
HOW TO ORDER

LICA	3	T	183	M	3	F	C	4	A	A
Style & Size	Voltage	Dielectric	Cap/Section (EIA Code)	Capacitance Tolerance	Height Code	Termination	Reel Packaging	# of Caps/Part	Inspection Code	Code Face
	25V = 3 50V = 5	T = T55T S = High K T55T	102 = 1000 pF 103 = 10 nF 104 = 100 nF	M = ±20% P = GMV	1 = 0.875mm 3 = 0.650mm 5 = 1.100mm 7 = 1.600mm	F = C4 Solder Balls- 97Pb/3Sn P = Cr-Cu-Au N = Cr-Ni-Au X = None	M = 7" Reel R = 13" Reel 6 = 2"x2" Waffle Pack 8 = 2"x2" Black Waffle Pack 7 = 2"x2" Waffle Pack w/ termination facing up A = 2"x2" Black Waffle Pack w/ termination facing up C = 4"x4" Waffle Pack w/ clear lid	1 = one 2 = two 4 = four	A = Standard B = Established Reliability Testing	A = Bar B = No Bar C = Dot, S55S Dielectrics

TABLE 1

Typical Parameters	T55T	Units
Capacitance, 25°C	Co	Nanofarads
Capacitance, 55°C	1.4 x Co	Nanofarads
Capacitance, 85°C	Co	Nanofarads
Dissipation Factor 25°	12	Percent
DC Resistance	0.2	Ohms
IR (Minimum @25°)	2.0	Megaohms
Dielectric Breakdown, Min	500	Volts
Thermal Coefficient of Expansion	8.5	ppm/°C 25-100°
Inductance: (Design Dependent)	15 to 120	Pico-Henries
Frequency of Operation	DC to 5 Gigahertz	
Ambient Temp Range	-55° to 125°C	

C4 AND PAD DIMENSIONS



Pin A1 is the lower left hand ball.

Code (Body Height)	Width (W)	Length (L)	Height Body (H _b)
1	1.600mm	1.850mm	0.875mm
3	1.600mm	1.850mm	0.650mm
5	1.600mm	1.850mm	1.100mm
7	1.600mm	1.850mm	1.600mm

TERMINATION OPTIONS

C4 SOLDER (97% Pb/3% Sn) BALLS



TERMINATION OPTION P OR N

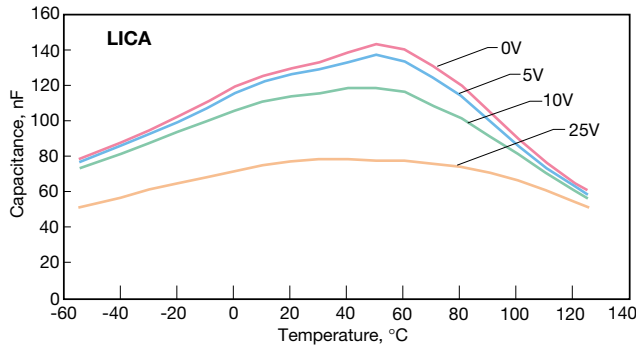


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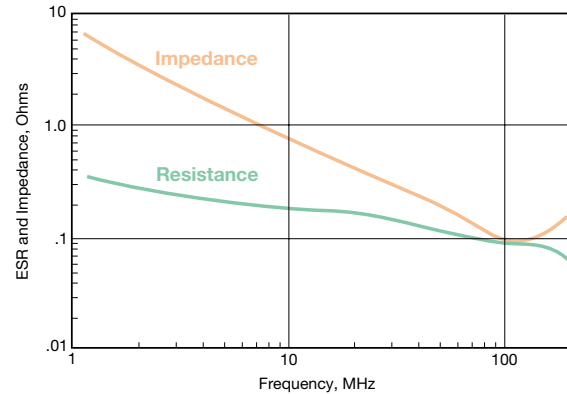


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LICA® TYPICAL PERFORMANCE CURVES



Effect of Bias Voltage and Temperature on a 130 nF LICA® (T55T)

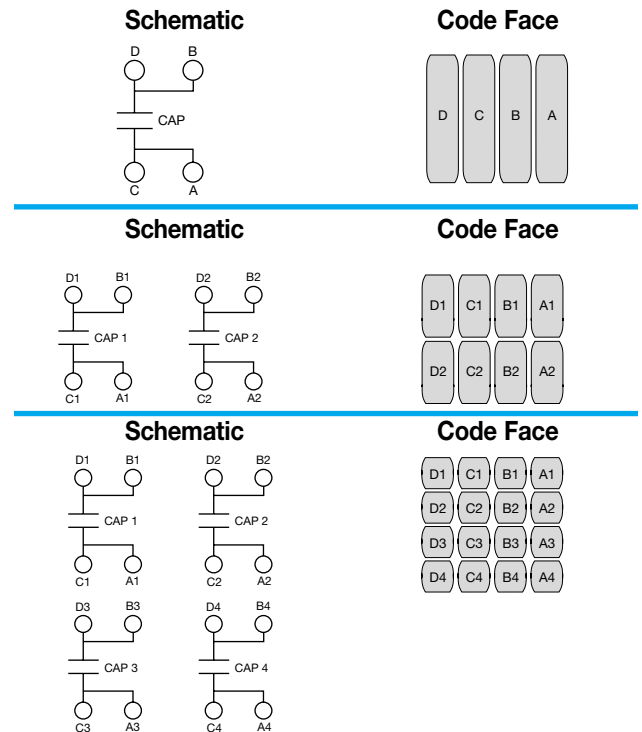


Impedance vs. Frequency

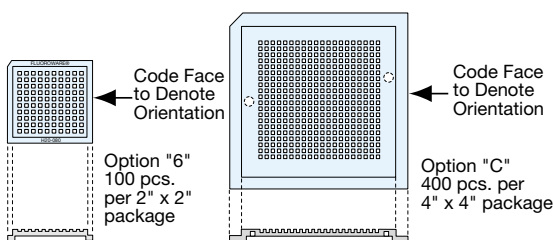
LICA VALID PART NUMBER LIST

Part Number	Voltage	Thickness (mm)	Capacitors per Package
LICA3T183M3FC4AA	25	0.650	4
LICA3T143P3FC4AA	25	0.650	4
LICA3T134M1FC1AA	25	0.875	1
LICA3T104P1FC1AA	25	0.875	1
LICA3T253M1FC4AA	25	0.875	4
LICA3T203P1FC4AA	25	0.875	4
LICA3T204M5FC1AA	25	1.100	1
LICA3T164P5FC1AA	25	1.100	1
LICA3T304M7FC1AB	25	1.600	1
LICA3T244P7FC1AB	25	1.600	1
LICA5T802M1FC4AB	50	0.875	4
LICA5T602P1FC4AB	50	0.875	4
Extended Range			
LICA3T104M3FC1A	25	0.650	1
LICA3T803P3FC1A	25	0.650	1
LICA3T503M3FC2A	25	0.650	2
LICA3T403P3FC2A	25	0.650	2
LICA3S213M3FC4A	25	0.650	4

CONFIGURATION



WAFFLE PACK OPTIONS FOR LICA®



Note: Standard configuration is Termination side down

LICA® PACKAGING SCHEME "M" AND "R"

8mm conductive plastic tape on reel:
"M"=7" reel max. qty. 3,000, "R"=13" reel max. qty. 8,000

