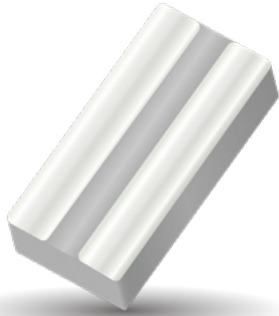


# LGA Low Inductance Capacitors, KGA Series

## 0204/0306 Land Grid Array



Land Grid Array (LGA) capacitors are the latest family of low inductance MLCCs from KYOCERA AVX. These new LGA products are the third low inductance family developed by KYOCERA AVX. The innovative LGA technology sets a new standard for low inductance MLCC performance.

Our initial 2 terminal versions of LGA technology deliver the performance of an 8 terminal IDC low inductance MLCC with a number of advantages including:

Simplified layout of 2 large solder pads compared to 8 small pads for IDCs

Opportunity to reduce PCB or substrate contribution to system ESL by using multiple parallel vias in solder pads

Advanced FCT manufacturing process used to create uniformly flat terminations on the capacitor that resist "tombstoning"

Better solder joint reliability

### APPLICATIONS

#### Semiconductor Packages

- Microprocessors/CPUs
- Graphics Processors/GPUs
- Chipsets
- FPGAs
- ASICs

#### Board Level Device Decoupling

- Frequencies of 300 MHz or more
- ICs drawing 15W or more
- Low voltages
- High speed buses

### HOW TO ORDER

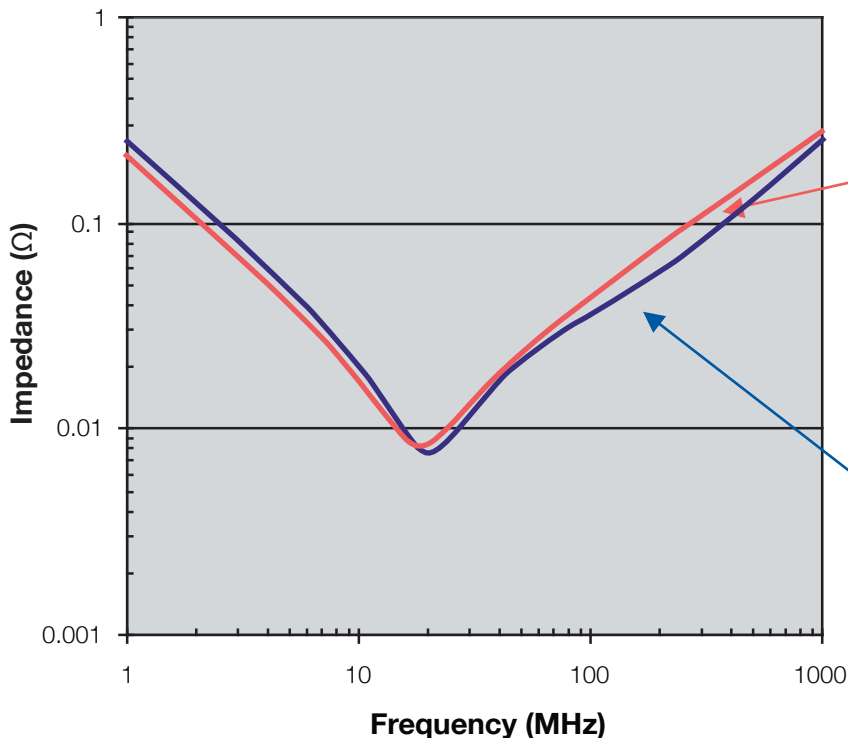
<b>KGA</b>	<b>05</b>	<b>A</b>	<b>R5</b>	<b>0G</b>	<b>103</b>	<b>M</b>	<b>N</b>
<b>Series</b>	<b>Size</b>	<b>Thickness</b>	<b>Dielectric</b>	<b>Voltage</b>	<b>Capacitance Code Code (in pF)</b>	<b>Capacitance Tolerance</b>	<b>Packaging</b>
General Purpose Low Inductance LGA Tin/ Nickel Finish	05 = 0402 15 = 0603	See Cap Chart	X5R = R5 X7S = S7 X6S = S6 X7R = R7	0G = 4.0V 0J = 6.3V 1A = 10V	2 Significant Digits +Number of zeros eg. 10µF = 106 10nF = 103 47pF = 470	M = ±20%	See Table Below

### PACKAGING CODES

Code	EIA (inch)	IEC(mm)	7" Paper	7" Embossed	13" Paper	13" Embossed
05	0402	1005	H		N	
15	0603	1608		U		L



### 0306 2 TERMINAL LGA COMPARISON WITH 0306 8 TERMINAL IDC

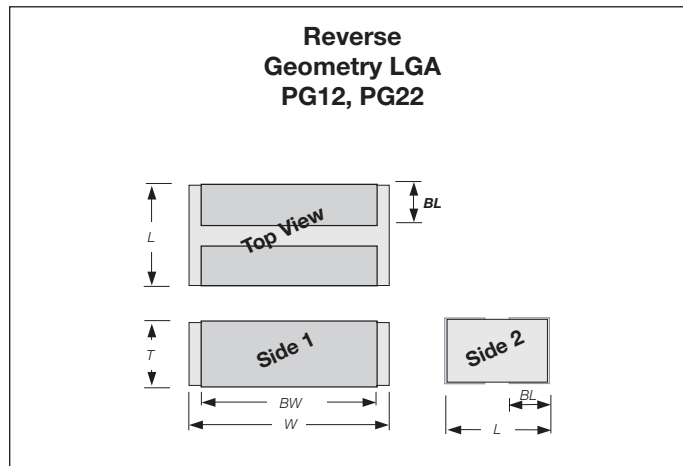


# LGA Low Inductance Capacitors, KGA Series

## Capacitance Range



SIZE	LG12 (05)						LG22 (15)								
Length mm (in.)	0.50 (0.020)						0.76 (0.030)								
Width mm (in.)	1.00 (0.039)						1.60 (0.063)								
Temp. Char.	X5R (R5)		X7S (S7)		X6S (S6)		X7R (R7)			X5R (R5)		X7S (S7)		X6S (S6)	
Working Voltage	6.3 (0J)	4 (0G)	6.3 (0J)	4 (0G)	6.3 (0J)	4 (0G)	10 (1A)	6.3 (0J)	4 (0G)	6.3 (0J)	4 (0G)	6.3 (0J)	4 (0G)	6.3 (0J)	4 (0G)
Cap (µF)	0.010 (103)	A	A	A	A	A	Z	Z	Z	Z	Z	Z	Z	Z	Z
	0.022 (223)	A	A	A	A	A				Z	Z	Z	Z	Z	Z
	0.047 (473)	A	A	A	A	A				Z	Z	Z	Z	Z	Z
	0.100 (104)	A	A	A	A	A				Z	Z	Z	Z	Z	Z
	0.220 (224)									Z	Z		Z		Z
	0.330 (334)									Z		Z			Z
	0.470 (474)									Z		Z			Z
	1.000 (105)														
	2.200 (225)														



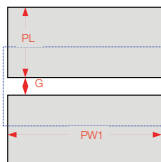
### PART DIMENSIONS

### MM (INCHES)

Series	L	W	T	BW	BL
<b>LG12 (05)</b>	0.5±0.05 (0.020±0.002)	1.00±0.10 (0.039±0.004)	0.50±0.05 (0.020±0.002)	0.80±0.10 (0.031±0.004)	0.13±0.08 (0.005±0.003)
<b>LG22 (15)</b>	0.76±0.10 (0.030±0.004)	1.60±0.10 (0.063±0.004)	0.50±0.05 (0.020±0.002)	1.50±0.10 (0.059±0.004)	0.28±0.08 (0.011±0.003)

### RECOMMENDED SOLDER PAD DIMENSIONS

### MM (INCHES)



Series	PL	PW1	G
<b>LG12 (05)</b>	0.50 (0.020)	1.00 (0.039)	0.20 (0.008)
<b>LG22 (15)</b>	0.65 (0.026)	1.50 (0.059)	0.20 (0.008)

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[CKCL44X7R1C223M](#) [CKCM25C0G1H470K](#) [CKCM25C0G1H680K](#) [CKCM25X5R0J474M](#) [CKCM25X5R1C223M](#) [CKCM25X7R1H222M](#)  
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[KGA05AS70J104MH](#) [NCA1206X7R103K16TRPF](#) [CA064C103M5RACTU](#) [CA064C330K5GACTU](#) [20108D3X332K5E](#) [20108D1X103K5E](#)  
[CA064C103K5RACTU](#) [CA064C104K4RACTU](#) [C1632C223M5RAC3020](#) [CA064C102K5RACTU](#) [CLLC1AX7S0G474M050AC](#)  
[CLLE1AX7R1A104M](#) [CKCL22X7R1H473M](#) [20115D1C271K5P](#) [AC0612JRNPO9BN101](#) [AC0612JRNPO9BN221](#) [AC0612JRNPO9BN271](#)  
[AC0612JRNPO9BN471](#) [CLLC1AX7S0G225M050AC](#) [20609TC101J101ME](#) [AC0612KRX7R7BB473](#) [CA064C221K5GACTU](#)  
[20110D1X103K5E](#) [W2A25C103KAT2A](#) [20105D1X104K5P](#) [20110D4X104K5E](#)