

LGA Low Inductance Capacitors



0204/0306 Land Grid Array

Land Grid Array (LGA) capacitors are the latest family of low inductance MLCCs from AVX. These new LGA products are the third low inductance family developed by 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

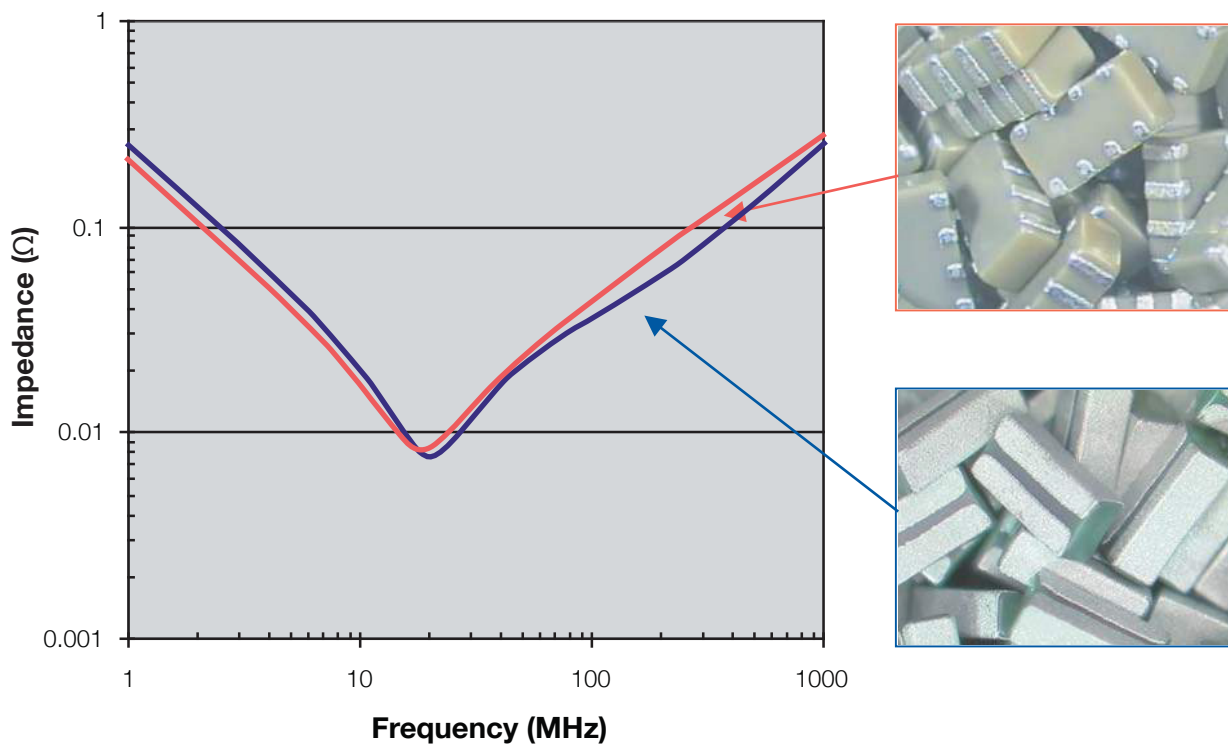
Semiconductor Packages

- Microprocessors/CPU's
- Graphics Processors/GPU's
- Chipsets
- FPGAs
- ASICs

Board Level Device Decoupling

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

0306 2 TERMINAL LGA COMPARISON WITH 0306 8 TERMINAL IDC



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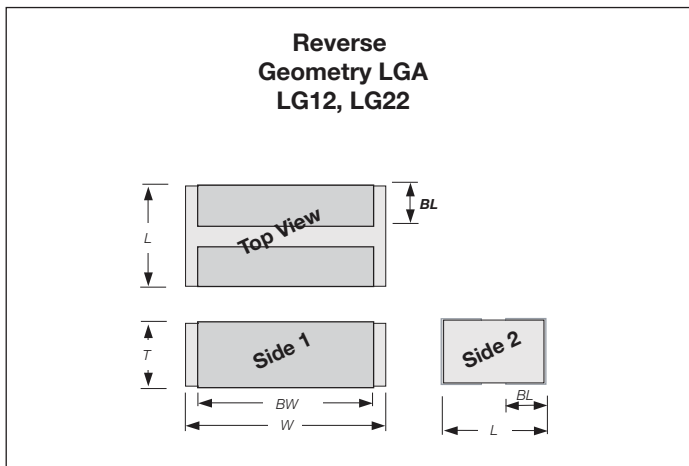


| SIZE | LG12 (0204) | | | | | | LG22 (0306) | | | | | | | | |
|-----------------|--------------|-------|---------|-------|---------|-------|--------------|---------|---------|---------|---------|---------|---------|---------|-------|
| Length mm (in.) | 0.50 (0.020) | | | | | | 0.76 (0.030) | | | | | | | | |
| Width mm (in.) | 1.00 (0.039) | | | | | | 1.60 (0.063) | | | | | | | | |
| Temp. Char. | X5R (D) | | X7S (Z) | | X6S (W) | | X7R (C) | | X5R (D) | | X7S (Z) | | X6S (W) | | |
| Working Voltage | 6.3 (6) | 4 (4) | 6.3 (6) | 4 (4) | 6.3 (6) | 4 (4) | 10 (Z) | 6.3 (6) | 4 (4) | 6.3 (6) | 4 (4) | 6.3 (6) | 4 (4) | 6.3 (6) | 4 (4) |
| Cap (µF) | 0.010 (103) | | | | | | | | | | | | | | |
| | 0.022 (223) | | | | | | | | | | | | | | |
| | 0.047 (473) | | | | | | | | | | | | | | |
| | 0.100 (104) | | | | | | | | | | | | | | |
| | 0.220 (224) | | | | | | | | | | | | | | |
| | 0.330 (334) | | | | | | | | | | | | | | |
| | 0.470 (474) | | | | | | | | | | | | | | |
| | 1.000 (105) | | | | | | | | | | | | | | |
| | 2.200 (225) | | | | | | | | | | | | | | |

= X7R
 = X5R
 = X7S
 = X6S

HOW TO ORDER

| | | | | | | | | | | | |
|--------------|----------------------|----------------------------|-------------------------|--|------------------|----------------------|--------------------------|---|----------------------------------|------------------------------------|-----------------------------|
| LG | 1 | 2 | 6 | Z | 104 | M | A | T | 2 | S | 1 |
| | | | | | | | | | | | |
| Style | Case Size | Number of Terminals | Working Voltage | Temperature Characteristic | Coded Cap | Cap Tolerance | Termination Style | Termination 100% Sn* | Packaging Tape & Reel | Thickness S = 0.55mm max | Number of Capacitors |
| | 1 = 0204 2 = 0306 | 2 | 4=4V 6=6.3V Z=10V | C = X7R D = X5R Z = X7S W = X6S | | M = ±20% | A = "U" Land | *Contact factory for other termination finishes | 2 = 7" Reel 4 = 13" Reel | | |



PART DIMENSIONS

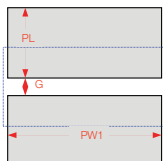
MM (INCHES)

| Series | L | W | T | BW | BL |
|--------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| LG12 (0204) | 0.5 ± 0.05 (0.020 ± 0.002) | 1.00 ± 0.10 (0.039 ± 0.004) | 0.50 ± 0.05 (0.020 ± 0.002) | 0.8 ± 0.10 (0.031 ± 0.004) | 0.13 ± 0.08 (0.005 ± 0.003) |
| LG22 (0306) | 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 |
|--------------------|--------------|--------------|--------------|
| LG12 (0204) | 0.50 (0.020) | 1.00 (0.039) | 0.20 (0.008) |
| LG22 (0306) | 0.65 (0.026) | 1.50 (0.059) | 0.20 (0.008) |