

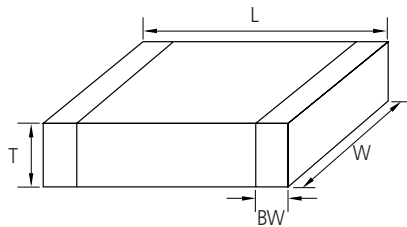
## Feature

- Small chip size
- 03 Series(COG) MLCC shows very low ESR value.
- 02 and 03 Series are suited to only reflow soldering
- 02 and 03 Series are suited to miniature RF module, portable equipment and high frequency circuit

## Application

- VCO, Tuner, RF Module
- MCM Module
- Mobile phone, Wireless LAN, Note PC
  - ※ For using special purpose like Military, Medical, Aviation, Automobile device should be following a special specification.

## Structure and Dimensions



Code	EIA Code	Dimension(mm)			
		L	W	T	BW
02	01005	$0.4 \pm 0.02$	$0.2 \pm 0.02$	$0.2 \pm 0.02$	0.07~0.14
03	0201	$0.6 \pm 0.03$	$0.3 \pm 0.03$	$0.3 \pm 0.03$	$0.15 \pm 0.05$

Part Numbering System

General Capacitors

High Capacitance Capacitors

**Super Small Size Capacitors**

Medium-High Voltage Capacitors

Array Type Capacitors

Low ESL Capacitors

Reliability Test Condition

Premium Capacitors for Automotive Applications

Packaging Specification

Application Manual for Surface Mounting



### Super Small Size Capacitance Table (C0G)

Size(mm)	Tmax (mm)	Vr(V)	Capacitance (pF)							
			0.5	1	10	22	47	100	220	330
C0G	01005(0402)	6.3								
		16								
	0201(0603)	25								
		50				20pF				

### Super Small Size Capacitance Table (X7R)

TC	Size (mm)	Vr(V)	Capacitance (nF)							
			0.1	0.22	0.47	1	2.2	4.7	10	22
X7R	01005(0402)	10								
		10								
	0201(0603)	10								
16										

### Super Small Size Capacitance Table (X5R, Y5V)

TC	Size (mm)	Vr(V)	Capacitance (μF)							
			0.01	0.1	0.22	0.47	1	2.2	4.7	10
X5R	01005(0402)	6.3								
		10								
		16								
	0201(0603)	4		X5R or X6S						
		6.3								
		10								
		16								
	25									
Y5V	0201(0603)	6.3								

**Product Lineup (Super Small Size Capacitors -COG)**

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)	
1	CL02C0R5CO2ANN □	0.40×0.20	0.5pF	16	±0.25pF	0.22	
2	CL02C010CO2ANN □		1.0pF	16	±0.25pF	0.22	
3	CL02C1R2CO2ANN □		1.2pF	16	±0.25pF	0.22	
4	CL02C1R5CO2ANN □		1.5pF	16	±0.25pF	0.22	
5	CL02C1R8CO2ANN □		1.8pF	16	±0.25pF	0.22	
6	CL02C020CO2ANN □		2.0pF	16	±0.25pF	0.22	
7	CL02C2R2CO2ANN □		2.2pF	16	±0.25pF	0.22	
8	CL02C2R7CO2ANN □		2.7pF	16	±0.25pF	0.22	
9	CL02C030CO2ANN □		3.0pF	16	±0.25pF	0.22	
10	CL02C3R3CO2ANN □		3.3pF	16	±0.25pF	0.22	
11	CL02C3R9CO2ANN □		3.9pF	16	±0.25pF	0.22	
12	CL02C4R7CO2ANN □		4.7pF	16	±0.25pF	0.22	
13	CL02C5R6DO2ANN □		5.6pF	16	±0.5pF	0.22	
14	CL02C6R8DO2ANN □		6.8pF	16	±0.5pF	0.22	
15	CL02C8R2DO2ANN □		8.2pF	16	±0.5pF	0.22	
16	CL02C090DO2ANN □		9.0pF	16	±0.5pF	0.22	
17	CL02C100JO2ANN □		10pF	16	±5%	0.22	
18	CL02C150JO2ANN □		15pF	16	±5%	0.22	
19	CL02C180JO2ANN □		18pF	16	±5%	0.22	
20	CL02C220JO2ANN □		22pF	16	±5%	0.22	
21	CL02C270JO2ANN □		27pF	16	±5%	0.22	
22	CL02C330JO2ANN □		33pF	16	±5%	0.22	
23	CL02C390JO2ANN □		39pF	16	±5%	0.22	
24	CL02C470JO2ANN □		47pF	16	±5%	0.22	
25	CL02C560JQ2ANN □		56pF	6.3	±5%	0.22	
26	CL02C680JQ2ANN □		68pF	6.3	±5%	0.22	
27	CL02C820JQ2ANN □		82pF	6.3	±5%	0.22	
28	CL02C101JQ2ANN □		100pF	6.3	±5%	0.22	
1	CL03C0R5CA3GNN □	0.60×0.30	0.5pF	25	±0.25pF	0.33	High-Q
2	CL03C010CA3GNN □		1.0pF	25	±0.25pF	0.33	High-Q
3	CL03C1R2CA3GNN □		1.2pF	25	±0.25pF	0.33	High-Q
4	CL03C1R5CA3GNN □		1.5pF	25	±0.25pF	0.33	High-Q
5	CL03C1R8CA3GNN □		1.8pF	25	±0.25pF	0.33	High-Q
6	CL03C020CA3GNN □		2.0pF	25	±0.25pF	0.33	High-Q
7	CL03C2R2CA3GNN □		2.2pF	25	±0.25pF	0.33	High-Q
8	CL03C2R7CA3GNN □		2.7pF	25	±0.25pF	0.33	High-Q
9	CL03C030CA3GNN □		3.0pF	25	±0.25pF	0.33	High-Q
10	CL03C3R3CA3GNN □		3.3pF	25	±0.25pF	0.33	High-Q
11	CL03C3R9CA3GNN □		3.9pF	25	±0.25pF	0.33	High-Q
12	CL03C4R7CA3GNN □		4.7pF	25	±0.25pF	0.33	High-Q
13	CL03C5R6DA3GNN □		5.6pF	25	±0.5pF	0.33	High-Q
14	CL03C6R8DA3GNN □		6.8pF	25	±0.5pF	0.33	High-Q
15	CL03C8R2DA3GNN □		8.2pF	25	±0.5pF	0.33	High-Q
16	CL03C090DA3GNN □		9.0pF	25	±0.5pF	0.33	High-Q
17	CL03C100JA3GNN □		10pF	25	±5%	0.33	High-Q
18	CL03C150JA3GNN □		15pF	25	±5%	0.33	High-Q
19	CL03C180JA3GNN □		18pF	25	±5%	0.33	High-Q
20	CL03C220JA3GNN □		22pF	25	±5%	0.33	High-Q
21	CL03C270JA3GNN □		27pF	25	±5%	0.33	High-Q
22	CL03C330JA3GNN □		33pF	25	±5%	0.33	High-Q
23	CL03C390JA3ANN □		39pF	25	±5%	0.33	
24	CL03C470JA3ANN □		47pF	25	±5%	0.33	
25	CL03C101JA3ANN □		100pF	25	±5%	0.33	

※ □ mark means packaging code. If you want to learn the code or quantity in detail, please see p80.

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## Product Lineup (Super Small Size Capacitors -X7R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL02B101KP2NNN □	0.40×0.20	100pF	10	±10%	0.22
2	CL02B151KP2NNN □		150pF	10	±10%	0.22
3	CL02B221KP2NNN □		220pF	10	±10%	0.22
4	CL02B331KP2NNN □		330pF	10	±10%	0.22
5	CL02B471KP2NNN □		470pF	10	±10%	0.22
6	CL02B681KP2NNN □		680pF	10	±10%	0.22
7	CL02B102KP2NNN □		1.0nF	10	±10%	0.22
1	CL03B331KO3NNN □	0.60×0.30	330pF	16	±10%	0.33
2	CL03B102KO3NNN □		1nF	16	±10%	0.33
3	CL03B472KQ3NNN □		4.7nF	6.3	±10%	0.33
4	CL03B103KP3NNN □		10nF	10	±10%	0.33

## Product Lineup (Super Small Size Capacitors -X5R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL02A151KQ2NNN □	0.40×0.20	150pF	6.3	±10%	0.22
2	CL02A221KQ2NNN □		220pF	6.3	±10%	0.22
3	CL02A331KQ2NNN □		330pF	6.3	±10%	0.22
4	CL02A471KQ2NNN □		470pF	6.3	±10%	0.22
5	CL02A681KQ2NNN □		680pF	6.3	±10%	0.22
6	CL02A102KQ2NNN □		1nF	6.3	±10%	0.22
7	CL02A152KQ2NNN □		1.5nF	6.3	±10%	0.22
8	CL02A222KQ2NNN □		2.2nF	6.3	±10%	0.22
9	CL02A332KQ2NNN □		3.2nF	6.3	±10%	0.22
10	CL02A472KQ2NNN □		4.7nF	6.3	±10%	0.22
11	CL02A682KQ2NNN □		6.8nF	6.3	±10%	0.22
12	CL02A103KQ2NNN □		10nF	6.3	±10%	0.22
13	CL02A104KQ2NNN □		100nF	6.3	±10%	0.22
1	CL03A103KP3NNN □	0.60×0.30	10nF	10	±10%	0.33
2	CL03A223KQ3NNN □		22nF	6.3	±10%	0.33
3	CL03A473KQ3NNN □		47nF	6.3	±10%	0.33
4	CL03A104MA3NNN □		100nF	25	±20%	0.33
5	CL03A104KO3NNN □		100nF	16	±10%	0.33
6	CL03A104KP3NNN □		100nF	10	±10%	0.33
7	CL03A104KQ3NNN □		100nF	6.3	±10%	0.33
8	CL03A224KQ3NNN □		220nF	6.3	±10%	0.33
9	CL03A224KP3NNN □		220nF	10	±10%	0.33
10	CL03A105MQ3CSN □		1μF	6.3	±20%	0.35
11	CL03A105MP3NSN □		1μF	10	±20%	0.35

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