

CL 10 A 106 M P 8 N N N C
1 2 3 4 5 6 7 8 9 10 11

1. SERIES CODE

CL=Multi layer Ceramic Capacitors

2. SIZE CODE — inch(mm)

02=01005(0402) 21=0805(2012) 43=1812(4532)
 03=0201(0603) 31=1206(3216) 55=2220(5750)
 05=0402(1005) 32=1210(3225)
 10=0603(1608) 42=1808(4520)

* 3. DIELECTRIC CODE

Class I	Class II
C=COG	A=X5R F=Y5V B=X7R X=X6S Y=X7S Z=X7T

** 4. CAPACITANCE CODE

Capacitance expressed in pF. 2 significant digits plus number of zeros.
 example) 106=10×10⁶=10000000pF
 For Values < 10pF, Letter R denotes decimal point
 example) 1R5=1.5pF

5. TOLERANCE CODE

B=±0.1pF F=±1pF, ±1%* K=±10%
 C=±0.25pF G=±2% M=±20%
 D=±0.5pF J=±5% Z=+80/-20%
 *For Values ≤ 10pF, F=±1pF
 Values > 10pF, F=±1%

6. RATED VOLTAGE CODE

R=4V O=16V B=50V E=250V H=630V K=3000V
 Q=6.3V A=25V C=100V F=350V J=1000V
 P=10V L=35V D=200V G=500V J=2000V

*** 7. THICKNESS CODE

2=0.20mm A=0.65mm F=1.25mm L=3.20mm S=1.35mm
 3=0.30mm C=0.85mm H=1.60mm M=1.15mm U=1.80mm
 5=0.50mm D=1.00mm I=2.00mm P=1.15mm V=2.50mm
 8=0.80mm E=1.10mm J=2.50mm Q=1.25mm Y=1.25mm
 9=0.90mm

8. INNER ELECTRODE / TERMINATION / PLATING CODE

A= Normal Product Pd / Ag / Ni barrier / Sn 100%
 N= Normal Product Ni / Cu / Ni barrier / Sn 100%
 G= Normal Product Cu / Cu / Ni barrier / Sn 100%
 L= Low profile Ni / Cu / Ni barrier / Sn 100%
 S= Normal Product Ni/Cu/Soft termination / Ni barrier / Sn100%

9. PRODUCT CODE

N= Normal
 A= Array(2-element)
 B= Array(4-element)
 L= LCC
 J= SLC

Size Code	*Size tolerance					
	01005(0402)	0201(0603)	0402(1005)	0603(1608)	0805(2012)	1206(3216)
S	±0.03	±0.05	±0.07	±0.07		±0.30
Q	±0.05	±0.07	±0.10	±0.15	±0.15	
R	±0.07	±0.09	±0.15	±0.20	±0.20	
U	±0.09		±0.20	±0.25	±0.30	
Z			±0.40	±0.30		
9			±0.30			

10. CONTROL CODE

N= Reserved for future use

11. PACKAGING CODE

B= Bulk
 P= Bulk Case
 C= Cardboard Tape, 7" Reel
 H= Cardboard Tape, 7" Reel(15,000ea)
 O= Cardboard Tape, 10" Reel
 D= Cardboard Tape, 13" Reel(10,000ea)
 L= Cardboard Tape, 13" Reel(15,000ea)
 E= Embossed Type, 7" Reel
 G= Embossed Type, 7" Reel(3,000ea)
 F= Embossed Type, 13" Reel
 S= Embossed Type, 10" Reel

Class I (Temperature Compensation)

Symbol	EIA Code	Operation Temperature Range(°C)	Temperature Coefficient Range(ppm/°C)
C	COG	-55 ~ +125	0 ±30

* Class II (High Dielectric Constant)

Symbol	EIA Code	Operation Temperature Range(°C)	Capacitance Change(ΔC %)
A	X5R	-55 ~ +85	±15
B	X7R	-55 ~ +125	±15
X	X6S	-55 ~ +105	±22
F	Y5V	-30 ~ +85	-82 ~ +22
Y	X7S	-55 ~ +125	±22
Z	X7T	-55 ~ +125	-33 ~ +22

**

Series	TC	Capacitance Step											
E-3	Y5V	1.0	2.2			4.7							
E-6	X5R	1.0	1.5	2.2	3.3	4.7	6.8						
	X7R												
	X6S												
	X7S												
X7T													
E-12	COG	1.0	1.2	1.5	1.8	2.2	2.7	3.3	3.9	4.7	5.6	6.8	8.2

Size	Code	Thickness(mm)	Spec(mm)	Size	Code	Thickness(mm)	Spec(mm)
01005(0402)	2	0.20	±0.02	0201(0603)	C	0.85	±0.10*
					9	0.90	±0.10*
0402(1005)	3	0.30	±0.03*	0603(1608)	F	1.25	±0.20
	5	0.50	±0.05		S	1.35	±0.15
					H	1.60	±0.20
					U	1.80	±0.20*
0805(2012)	A	0.65	±0.10	1808(4520)	I	2.00	±0.20
	C	0.85	±0.10		J	2.50	±0.20
	C	0.85	±0.10*		V	2.50	±0.30
	M	1.15	±0.10		F	1.25	±0.20
	F	1.25	±0.10		H	1.60	±0.20
	Q	1.25	±0.15		I	2.00	±0.20
1206(3216)	Y	1.25	±0.20	1812(4532)	F	1.25	±0.20
	C	0.85	±0.15		H	1.60	±0.20
	C	0.85	±0.10*	I	2.00	±0.20	
	E	1.10	±0.15	J	2.50	±0.20	
	E	1.10	±0.10*	L	3.20	±0.30	
	P	1.15	±0.10*	2220(5750)	H	1.60	±0.20
	M	1.15	±0.15		I	2.00	±0.20
	F	1.25	±0.15		J	2.50	±0.20
H	1.60	±0.20	L		3.00	±0.30	

■ * Mark is only applicable to "L" code, 12th code in part number.
 ■ Please discuss with sales person with regard to Pd products.

Part Numbering System

General Capacitors

High Capacitance Capacitors

Super Small Size Capacitors

Medium-High Voltage Capacitors

Array Type Capacitors

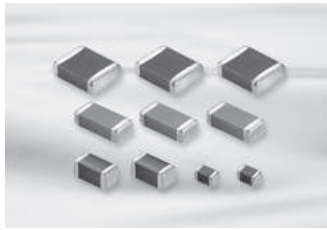
Low ESL Capacitors

Reliability Test Condition

Premium Capacitors for Automotive Applications

Packaging Specification

Application Manual for Surface Mounting



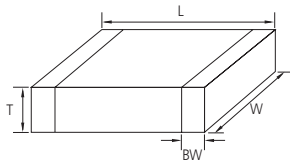
Feature

- Wide selection of size : from 0402 to 2220
- Highly reliable tolerance and high speed automatic chip placement on PCBs
- Wide capacitance range
- Wide temperature compensation and voltage range : from COG to Y5V and from 6.3V to 50V
- Highly reliable performance
- Highly resistant termination metal
- Tape & reel for surface mount assembly

Application

- HHP, DSC, DVC, LCD, TV, Memory Module, PDA, Game Machine
- Tuner (Product code C is suitable.)

Structure and Dimensions



Size Code	EIA Code	Dimension(mm)				
		L	W	T	Thickness Code	BW
05	0402	1.00±0.05	0.50±0.05	0.50±0.05	5	0.25±0.10
10	0603	1.60±0.10	0.80±0.10	0.50±0.05	5	0.30±0.20
		1.60±0.10	0.80±0.10	0.80±0.10	8	
21	0805	2.00±0.10	1.25±0.10	0.85±0.10	C	0.5+0.2/-0.3
		2.00±0.10	1.25±0.10	1.15±0.10	M	
		2.00±0.10	1.25±0.10	1.25±0.10	F	
		2.00±0.15	1.25±0.15	1.25±0.15	Q	
		2.00±0.20	1.25±0.20	1.25±0.20	Y	
		3.20±0.20	1.60±0.20	0.60±0.10(*)	6	
31	1206	3.20±0.15	1.60±0.15	0.85±0.15	C	0.50±0.30
		3.20±0.20	1.60±0.20	0.85±0.10(*)	C	
		3.20±0.20	1.60±0.20	1.15±0.10(*)	P	
		3.20±0.15	1.60±0.15	1.25±0.15	F	
		3.20±0.20	1.60±0.20	1.60±0.20	H	
		3.20±0.30	2.50±0.20	0.85±0.10(*)	C	
32	1210	3.20±0.30	2.50±0.20	0.90±0.10(*)	9	0.60±0.30
		3.20±0.30	2.50±0.20	1.60±0.20	H	
		3.20±0.30	2.50±0.20	1.80±0.20(*)	U	
		3.20±0.30	2.50±0.20	2.00±0.20	I	
		3.20±0.30	2.50±0.20	2.50±0.20	J	
		3.20±0.40	2.50±0.30	2.50±0.30	V	
42	1808	4.50±0.40	2.00±0.20	1.25±0.20	F	0.80±0.30
		4.50±0.40	2.00±0.20	1.40±0.20	G	
		4.50±0.40	2.00±0.20	2.00±0.20	I	
43	1812	4.50±0.40	3.20±0.30	1.25±0.20	F	0.80±0.30
		4.50±0.40	3.20±0.30	2.50±0.20	J	
		4.50±0.40	3.20±0.30	3.20±0.30	L	
55	2220	5.70±0.40	5.00±0.40	2.50±0.20	J	1.00±0.30
		5.70±0.40	5.00±0.40	3.20±0.30	L	

* Mark is only applicable to "L" code, 12th code in part number.

General Capacitors Table (COG)

Size(mm)	Vr(V)	Capacitance																					
		pF							nF														
		0.5	1	10	22	47	100	220	330	470	560	1	2.2	3.3	4.7	6.8	10	22	27	33	47	68	100
0402(1005)	25	[Bar chart showing capacitance range for 0402(1005) at 25V]																					
	50	[Bar chart showing capacitance range for 0402(1005) at 50V]																					
0603(1608)	25	[Bar chart showing capacitance range for 0603(1608) at 25V]																					
	50	[Bar chart showing capacitance range for 0603(1608) at 50V]																					
0805(2012)	25	[Bar chart showing capacitance range for 0805(2012) at 25V]																					
	50	[Bar chart showing capacitance range for 0805(2012) at 50V]																					
1206(3216)	16	[Bar chart showing capacitance range for 1206(3216) at 16V]																					
	25	[Bar chart showing capacitance range for 1206(3216) at 25V]																					
	50	[Bar chart showing capacitance range for 1206(3216) at 50V]																					
1210(3225)	50	[Bar chart showing capacitance range for 1210(3225) at 50V]																					
1812(4532)	25	[Bar chart showing capacitance range for 1812(4532) at 25V]																					
	50	[Bar chart showing capacitance range for 1812(4532) at 50V]																					
2220(5750)	50	[Bar chart showing capacitance range for 2220(5750) at 50V, with specific values 43nF and 130nF highlighted]																					

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

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

General Capacitors Table (X6S)

Size(mm)	Vr(V)	Capacitance (μF)										
		0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
0402(1005)	4											
	6.3											
	10											
0603(1608)	4											
	6.3											
	10											
	16											
	25											
0805(2012)	4											
	6.3											
	10											
	16											
	25											
1206(3216)	6.3											
	10											
	16											
	25											
1210(3225)	6.3											
	10											
	16											
	25											

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

General Capacitors Table (X7R)

Size(mm)	Vr(V)	Capacitance (μF)										
		0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
0402(1005)	6.3											
	10			X7S								
	16											
0603(1608)	6.3											
	10											
	16											
	25											
	50											
0805(2012)	6.3											
	10											
	16											
	25								X7S			
	35											
	50											
1206(3216)	6.3											
	10											
	16											
	25											
1210(3225)	6.3											
	10											
	16											
	25											
	50											
1210(3225)	6.3											X7T
	10											
	16											
	25											
	50											

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

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

General Capacitors Table (Y5V)

Size(mm)	Vr(V)	Capacitance (μF)									
		0.1	0.22	0.47	1	2.2	4.7	10	22	47	
0402(1005)	6.3										
	10										
	16										
	25										
0603(1608)	6.3										
	10										
	16										
	25										
0805(2012)	6.3										
	10										
	16										
	25										
1206(3216)	10										
	16										
	25										
	50										
1210(3225)	6.3										
	10									(Tmax=2.7)	
	16									(Tmax=2.0)	
	25									(Tmax=1.2)	
	35									(Tmax=1.8)	
	50									(Tmax=1.5)	

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

Product Lineup (General Capacitors-C0G)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL05C0R5CB5N11 □	1.00 × 0.50	0.5 pF	50	±0.25 pF	0.55
2	CL05CR75CB5N11 □		0.75 pF	50	±0.25 pF	0.55
3	CL05C010CB5N11 □		1.0 pF	50	±0.25 pF	0.55
4	CL05C1R2CB5N11 □		1.2 pF	50	±0.25 pF	0.55
5	CL05C1R5CB5N11 □		1.5 pF	50	±0.25 pF	0.55
6	CL05C1R8CB5N11 □		1.8 pF	50	±0.25 pF	0.55
7	CL05C020CB5N11 □		2.0 pF	50	±0.25 pF	0.55
8	CL05C2R2CB5N11 □		2.2 pF	50	±0.25 pF	0.55
9	CL05C2R4CB5N11 □		2.4 pF	50	±0.25 pF	0.55
10	CL05C2R5CB5N11 □		2.5 pF	50	±0.25 pF	0.55
11	CL05C2R7CB5N11 □		2.7 pF	50	±0.25 pF	0.55
12	CL05C030CB5N11 □		3.0 pF	50	±0.25 pF	0.55
13	CL05C3R3CB5N11 □		3.3 pF	50	±0.25 pF	0.55
14	CL05C3R5CB5N11 □		3.5 pF	50	±0.25 pF	0.55
15	CL05C3R6CB5N11 □		3.6 pF	50	±0.25 pF	0.55
16	CL05C3R9CB5N11 □		3.9 pF	50	±0.25 pF	0.55
17	CL05C040CB5N11 □		4.0 pF	50	±0.25 pF	0.55
18	CL05C4R3CB5N11 □		4.3 pF	50	±0.25 pF	0.55
19	CL05C4R7CB5N11 □		4.7 pF	50	±0.25 pF	0.55
20	CL05C050DB5N11 □		5.0 pF	50	±0.5 pF	0.55
21	CL05C5R6DB5N11 □		5.6 pF	50	±0.5 pF	0.55
22	CL05C060DB5N11 □		6.0 pF	50	±0.5 pF	0.55
23	CL05C6R2DB5N11 □		6.2 pF	50	±0.5 pF	0.55
24	CL05C6R8DB5N11 □		6.8 pF	50	±0.5 pF	0.55
25	CL05C070DB5N11 □		7.0 pF	50	±0.5 pF	0.55
26	CL05C080DB5N11 □		8.0 pF	50	±0.5 pF	0.55
27	CL05C8R2DB5N11 □		8.2 pF	50	±0.5 pF	0.55
28	CL05C090DB5N11 □		9.0 pF	50	±0.5 pF	0.55
29	CL05C9R1DB5N11 □		9.1 pF	50	±0.5 pF	0.55
30	CL05C100JB5N11 □		10 pF	50	±5%	0.55
31	CL05C110JB5N11 □		11 pF	50	±5%	0.55
32	CL05C120JB5N11 □		12 pF	50	±5%	0.55
33	CL05C130JB5N11 □		13 pF	50	±5%	0.55
34	CL05C150JB5N11 □		15 pF	50	±5%	0.55
35	CL05C160JB5N11 □		16 pF	50	±5%	0.55
36	CL05C180JB5N11 □		18 pF	50	±5%	0.55
37	CL05C200JB5N11 □		20 pF	50	±5%	0.55
38	CL05C220JA5N11 □		22 pF	25	±5%	0.55
39	CL05C220JB5N11 □		22 pF	50	±5%	0.55
40	CL05C240JB5N11 □		24 pF	50	±5%	0.55
41	CL05C270JB5N11 □		27 pF	50	±5%	0.55
42	CL05C270JA5N11 □		27 pF	25	±5%	0.55
43	CL05C300JB5N11 □		30 pF	50	±5%	0.55
44	CL05C330JB5N11 □		33 pF	50	±5%	0.55
45	CL05C360JB5N11 □		36 pF	50	±5%	0.55
46	CL05C390JB5N11 □		39 pF	50	±5%	0.55
47	CL05C430JB5N11 □		43 pF	50	±5%	0.55
48	CL05C470JB5N11 □		47 pF	50	±5%	0.55
49	CL05C510JB5N11 □		51 pF	50	±5%	0.55
50	CL05C560JB5N11 □		56 pF	50	±5%	0.55

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

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

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

Product Lineup (General Capacitors-C0G)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
51	CL05C620JB5NNN □	1.00×0.50	62pF	50	±5%	0.55
52	CL05C680JB5NNN □		68pF	50	±5%	0.55
53	CL05C750JB5NNN □		75pF	50	±5%	0.55
54	CL05C820JB5NNN □		82pF	50	±5%	0.55
55	CL05C910JB5NNN □		91pF	50	±5%	0.55
56	CL05C101JB5NNN □		100pF	50	±5%	0.55
57	CL05C121JB5NNN □		120pF	50	±5%	0.55
58	CL05C151JB5NNN □		150pF	50	±5%	0.55
59	CL05C181JB5NNN □		180pF	50	±5%	0.55
60	CL05C201JB5NNN □		200pF	50	±5%	0.55
61	CL05C221JB5NNN □		220pF	50	±5%	0.55
62	CL05C271JB5NNN □		270pF	50	±5%	0.55
63	CL05C331JB5NNN □		330pF	50	±5%	0.55
64	CL05C391JB5NNN □		390pF	50	±5%	0.55
65	CL05C471JB5NNN □		470pF	50	±5%	0.55
66	CL05C471JO5NNN □		470pF	16	±5%	0.55
67	CL05C681JB5NNN □		680pF	50	±5%	0.55
68	CL05C821JB5NNN □		820pF	50	±5%	0.55
69	CL05C102JB5NNN □		1nF	50	±5%	0.55
70	CL05C102JA5NNN □		1nF	25	±5%	0.55
71	CL05C102JO5NNN □		1nF	16	±5%	0.55
1	CL10C0R3CB8NNN □	1.60×0.80	0.3pF	50	±0.25pF	0.90
2	CL10C0R5CB8NNN □		0.5pF	50	±0.25pF	0.90
3	CL10C0R75CB8NNN □		0.75pF	50	±0.25pF	0.90
4	CL10C010CB8NNN □		1.0pF	50	±0.25pF	0.90
5	CL10C1R2CB8NNN □		1.2pF	50	±0.25pF	0.90
6	CL10C1R5CB8NNN □		1.5pF	50	±0.25pF	0.90
7	CL10C1R8CB8NNN □		1.8pF	50	±0.25pF	0.90
8	CL10C020CB8NNN □		2.0pF	50	±0.25pF	0.90
9	CL10C2R2CB8NNN □		2.2pF	50	±0.25pF	0.90
10	CL10C2R4CB8NNN □		2.4pF	50	±0.25pF	0.90
11	CL10C2R5CB8NNN □		2.5pF	50	±0.25pF	0.90
12	CL10C2R7CB8NNN □		2.7pF	50	±0.25pF	0.90
13	CL10C030CB8NNN □		3.0pF	50	±0.25pF	0.90
14	CL10C3R3CB8NNN □		3.3pF	50	±0.25pF	0.90
15	CL10C3R5CB8NNN □		3.5pF	50	±0.25pF	0.90
16	CL10C3R6CB8NNN □		3.6pF	50	±0.25pF	0.90
17	CL10C3R9CB8NNN □		3.9pF	50	±0.25pF	0.90
18	CL10C040CB8NNN □		4.0pF	50	±0.25pF	0.90
19	CL10C4R3CB8NNN □		4.3pF	50	±0.25pF	0.90
20	CL10C4R7CB8NNN □		4.7pF	50	±0.25pF	0.90
21	CL10C050DB8NNN □		5.0pF	50	±0.5pF	0.90
22	CL10C5R6DB8NNN □		5.6pF	50	±0.5pF	0.90
23	CL10C060DB8NNN □		6.0pF	50	±0.5pF	0.90
24	CL10C6R2DB8NNN □		6.2pF	50	±0.5pF	0.90
25	CL10C6R8DB8NNN □		6.8pF	50	±0.5pF	0.90
26	CL10C070DB8NNN □		7.0pF	50	±0.5pF	0.90
27	CL10C7R5DB8NNN □		7.5pF	50	±0.5pF	0.90
28	CL10C080DB8NNN □		8.0pF	50	±0.5pF	0.90
29	CL10C8R2DB8NNN □	8.2pF	50	±0.5pF	0.90	

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

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

Product Lineup (General Capacitors-C0G)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
30	CL10C090DB8NNN □	1.60×0.80	9.0pF	50	±0.5pF	0.90
31	CL10C9R1DB8NNN □		9.1pF	50	±0.5pF	0.90
32	CL10C100JB8NNN □		10pF	50	±5%	0.90
33	CL10C110JB8NNN □		11pF	50	±5%	0.90
34	CL10C120JB8NNN □		12pF	50	±5%	0.90
35	CL10C130JB8NNN □		13pF	50	±5%	0.90
36	CL10C140JB8NNN □		14pF	50	±5%	0.90
37	CL10C150JB8NNN □		15pF	50	±5%	0.90
38	CL10C160JB8NNN □		16pF	50	±5%	0.90
39	CL10C180JB8NNN □		18pF	50	±5%	0.90
40	CL10C200JB8NNN □		20pF	50	±5%	0.90
41	CL10C220JB8NNN □		22pF	50	±5%	0.90
42	CL10C240JB8NNN □		24pF	50	±5%	0.90
43	CL10C250JB8NNN □		25pF	50	±5%	0.90
44	CL10C270JB8NNN □		27pF	50	±5%	0.90
45	CL10C300JB8NNN □		30pF	50	±5%	0.90
46	CL10C330JB8NNN □		33pF	50	±5%	0.90
47	CL10C360JB8NNN □		36pF	50	±5%	0.90
48	CL10C390JB8NNN □		39pF	50	±5%	0.90
49	CL10C430JB8NNN □		43pF	50	±5%	0.90
50	CL10C470JB8NNN □		47pF	50	±5%	0.90
51	CL10C510JB8NNN □		51pF	50	±5%	0.90
52	CL10C560JB8NNN □		56pF	50	±5%	0.90
53	CL10C620JB8NNN □		62pF	50	±5%	0.90
54	CL10C680JB8NNN □		68pF	50	±5%	0.90
55	CL10C750JB8NNN □		75pF	50	±5%	0.90
56	CL10C820JB8NNN □		82pF	50	±5%	0.90
57	CL10C910JB8NNN □		91pF	50	±5%	0.90
58	CL10C101JB8NNN □		100pF	50	±5%	0.90
59	CL10C111JB8NNN □		110pF	50	±5%	0.90
60	CL10C121JB8NNN □		120pF	50	±5%	0.90
61	CL10C131JB8NNN □		130pF	50	±5%	0.90
62	CL10C151JB8NNN □		150pF	50	±5%	0.90
63	CL10C161JB8NNN □		160pF	50	±5%	0.90
64	CL10C181JB8NNN □		180pF	50	±5%	0.90
65	CL10C201JB8NNN □		200pF	50	±5%	0.90
66	CL10C221JB8NNN □		220pF	50	±5%	0.90
67	CL10C241JB8NNN □		240pF	50	±5%	0.90
68	CL10C271JB8NNN □		270pF	50	±5%	0.90
69	CL10C301JB8NNN □		300pF	50	±5%	0.90
70	CL10C331JB8NNN □		330pF	50	±5%	0.90
71	CL10C361JB8NNN □		360pF	50	±5%	0.90
72	CL10C391JB8NNN □		390pF	50	±5%	0.90
73	CL10C431JB8NNN □		430pF	50	±5%	0.90
74	CL10C471JB8NNN □		470pF	50	±5%	0.90
75	CL10C511JB8NNN □		510pF	50	±5%	0.90
76	CL10C561JB8NNN □		560pF	50	±5%	0.90
77	CL10C621JB8NNN □		620pF	50	±5%	0.90
78	CL10C681JB8NNN □		680pF	50	±5%	0.90
79	CL10C751JB8NNN □	750pF	50	±5%	0.90	

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

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

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

Product Lineup (General Capacitors-C0G)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
80	CL10C821JB8NND □	1.60 × 0.80	820pF	50	±5%	0.90
81	CL10C102JB8NND □		1nF	50	±5%	0.90
82	CL10C182JB8NND □		1.8nF	50	±5%	0.90
83	CL10C222JB8NND □		2.2nF	50	±5%	0.90
84	CL10C562JB8NND □		5.6nF	50	±5%	0.90
85	CL10C103JA8NND □		10nF	25	±5%	0.90
1	CL21CR47CBANND □	2.00 × 1.25	0.47pF	50	±0.25pF	0.75
2	CL21C0R5CBANND □		0.5pF	50	±0.25pF	0.75
3	CL21C010CBANND □		1.0pF	50	±0.25pF	0.75
4	CL21C1R2CBANND □		1.2pF	50	±0.25pF	0.75
5	CL21C1R5CBANND □		1.5pF	50	±0.25pF	0.75
6	CL21C1R8CBANND □		1.8pF	50	±0.25pF	0.75
7	CL21C020CBANND □		2.0pF	50	±0.25pF	0.75
8	CL21C2R2CBANND □		2.2pF	50	±0.25pF	0.75
9	CL21C2R4CBANND □		2.4pF	50	±0.25pF	0.75
10	CL21C2R5CBANND □		2.5pF	50	±0.25pF	0.75
11	CL21C2R7CBANND □		2.7pF	50	±0.25pF	0.75
12	CL21C030CBANND □		3.0pF	50	±0.25pF	0.75
13	CL21C3R2CBANND □		3.2pF	50	±0.25pF	0.75
14	CL21C3R3CBANND □		3.3pF	50	±0.25pF	0.75
15	CL21C3R6CBANND □		3.6pF	50	±0.25pF	0.75
16	CL21C3R9CBANND □		3.9pF	50	±0.25pF	0.75
17	CL21C040CBANND □		4.0pF	50	±0.25pF	0.75
18	CL21C4R7CBANND □		4.7pF	50	±0.25pF	0.75
19	CL21C5R6DBANND □		5.6pF	50	±0.5pF	0.75
20	CL21C060DBANND □		6.0pF	50	±0.5pF	0.75
21	CL21C6R8DBANND □		6.8pF	50	±0.5pF	0.75
22	CL21C070DBANND □		7.0pF	50	±0.5pF	0.75
23	CL21C7R5DBANND □		7.5pF	50	±0.5pF	0.75
24	CL21C080DBANND □		8.0pF	50	±0.5pF	0.75
25	CL21C8R2DBANND □		8.2pF	50	±0.5pF	0.75
26	CL21C090DBANND □		9.0pF	50	±0.5pF	0.75
27	CL21C100JBANND □		10pF	50	±5%	0.75
28	CL21C120JBANND □		12pF	50	±5%	0.75
29	CL21C130JBANND □		13pF	50	±5%	0.75
30	CL21C140JBANND □		14pF	50	±5%	0.75
31	CL21C150JBANND □		15pF	50	±5%	0.75
32	CL21C160JBANND □		16pF	50	±5%	0.75
33	CL21C180JBANND □		18pF	50	±5%	0.75
34	CL21C200JBANND □		20pF	50	±5%	0.75
35	CL21C220JBANND □		22pF	50	±5%	0.75
36	CL21C240JBANND □	24pF	50	±5%	0.75	
37	CL21C250JBANND □	25pF	50	±5%	0.75	
38	CL21C270JBANND □	27pF	50	±5%	0.75	
39	CL21C300JBANND □	30pF	50	±5%	0.75	
40	CL21C330JBANND □	33pF	50	±5%	0.75	
41	CL21C360JBANND □	36pF	50	±5%	0.75	
42	CL21C390JBANND □	39pF	50	±5%	0.75	
43	CL21C430JBANND □	43pF	50	±5%	0.75	
44	CL21C470JBANND □	47pF	50	±5%	0.75	
45	CL21C510JBANND □		51pF	50	±5%	0.75

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

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

Product Lineup (General Capacitors-C0G)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
46	CL21C560JBANND □	2.00 × 1.25	56pF	50	±5%	0.75
47	CL21C620JBANND □		62pF	50	±5%	0.75
48	CL21C680JBANND □		68pF	50	±5%	0.75
49	CL21C750JBANND □		75pF	50	±5%	0.75
50	CL21C820JBANND □		82pF	50	±5%	0.75
51	CL21C910JBANND □		91pF	50	±5%	0.75
52	CL21C101JBANND □		100pF	50	±5%	0.75
53	CL21C111JBANND □		110pF	50	±5%	0.75
54	CL21C121JBANND □		120pF	50	±5%	0.75
55	CL21C131JBANND □		130pF	50	±5%	0.75
56	CL21C151JBANND □		150pF	50	±5%	0.75
57	CL21C161JBANND □		160pF	50	±5%	0.75
58	CL21C181JBANND □		180pF	50	±5%	0.75
59	CL21C201JBANND □		200pF	50	±5%	0.75
60	CL21C221JBANND □		220pF	50	±5%	0.75
61	CL21C241JBANND □		240pF	50	±5%	0.75
62	CL21C271JBANND □		270pF	50	±5%	0.75
63	CL21C301JBANND □		300pF	50	±5%	0.75
64	CL21C331JBANND □		330pF	50	±5%	0.75
65	CL21C361JBANND □		360pF	50	±5%	0.75
66	CL21C391JBANND □		390pF	50	±5%	0.75
67	CL21C431JBANND □		430pF	50	±5%	0.75
68	CL21C471JBANND □		470pF	50	±5%	0.75
69	CL21C511JBANND □		510pF	50	±5%	0.75
70	CL21C561JBANND □		560pF	50	±5%	0.75
71	CL21C621JBCNND □		620pF	50	±5%	0.95
72	CL21C681JBCNND □		680pF	50	±5%	0.95
73	CL21C751JBCNND □		750pF	50	±5%	0.95
74	CL21C821JBCNND □		820pF	50	±5%	0.95
75	CL21C102JBCNND □		1nF	50	±5%	0.95
76	CL21C122JBFNND □		1.2nF	50	±5%	1.35
77	CL21C152JBFNND □		1.5nF	50	±5%	1.35
78	CL21C182JBFNND □		1.8nF	50	±5%	1.35
79	CL21C222JBFNND □		2.2nF	50	±5%	1.35
80	CL21C332JAFNND □		3.3nF	25	±5%	1.35
81	CL21C332JBFNND □		3.3nF	50	±5%	1.35
82	CL21C392JAFNND □		3.9nF	25	±5%	0.75
83	CL21C392JBFNND □		3.9nF	50	±5%	1.35
84	CL21C472JBFNND □	4.7nF	50	±5%	1.35	
85	CL21C562JBFNND □	5.6nF	50	±5%	1.35	
86	CL21C822JAFNND □	8.2nF	25	±5%	1.35	
87	CL21C103JBFNND □	10nF	50	±5%	1.35	
88	CL21C333JAFNND □	33nF	25	±5%	1.35	
1	CL31C0R5CBCNND □	3.20 × 1.60	0.5pF	50	±0.25pF	1.0
2	CL31C010CBCNND □		1.0pF	50	±0.25pF	1.0
3	CL31C1R5CBCNND □		1.5pF	50	±0.25pF	1.0
4	CL31C1R8CBCNND □		1.8pF	50	±0.25pF	1.0
5	CL31C020CBCNND □		2.0pF	50	±0.25pF	1.0
6	CL31C2R2CBCNND □		2.2pF	50	±0.25pF	1.0
7	CL31C2R7CBCNND □		2.7pF	50	±0.25pF	1.0

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

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

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

Product Lineup (General Capacitors-C0G)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
8	CL31C030CBCNND □	3.20 × 1.60	3.0pF	50	±0.25pF	1.0
9	CL31C3R3CBCNND □		3.3pF	50	±0.25pF	1.0
10	CL31C040CBCNND □		4.0pF	50	±0.25pF	1.0
11	CL31C4R7CBCNND □		4.7pF	50	±0.25pF	1.0
12	CL31C100JBCNND □		10pF	50	±5%	1.0
13	CL31C120JBCNND □		12pF	50	±5%	1.0
14	CL31C150JBCNND □		15pF	50	±5%	1.0
15	CL31C180JBCNND □		18pF	50	±5%	1.0
16	CL31C200JBCNND □		20pF	50	±5%	1.0
17	CL31C220JBCNND □		22pF	50	±5%	1.0
18	CL31C270JBCNND □		27pF	50	±5%	1.0
19	CL31C300JBCNND □		30pF	50	±5%	1.0
20	CL31C330JBCNND □		33pF	50	±5%	1.0
21	CL31C390JBCNND □		39pF	50	±5%	1.0
22	CL31C470JBCNND □		47pF	50	±5%	1.0
23	CL31C510JBCNND □		51pF	50	±5%	1.0
24	CL31C560JBCNND □		56pF	50	±5%	1.0
25	CL31C680JBCNND □		68pF	50	±5%	1.0
26	CL31C750JBCNND □		75pF	50	±5%	1.0
27	CL31C820JBCNND □		82pF	50	±5%	1.0
28	CL31C101JBCNND □		100pF	50	±5%	1.0
29	CL31C121JBCNND □		120pF	50	±5%	1.0
30	CL31C151JBCNND □		150pF	50	±5%	1.0
31	CL31C181JBCNND □		180pF	50	±5%	1.0
32	CL31C221JBCNND □		220pF	50	±5%	1.0
33	CL31C271JBCNND □		270pF	50	±5%	1.0
34	CL31C331JBCNND □		330pF	50	±5%	1.0
35	CL31C391JBCNND □		390pF	50	±5%	1.0
36	CL31C471JBCNND □		470pF	50	±5%	1.0
37	CL31C561JBCNND □		560pF	50	±5%	1.0
38	CL31C681JBCNND □		680pF	50	±5%	1.0
39	CL31C821JBCNND □		820pF	50	±5%	1.0
40	CL31C102JBCNND □		1nF	50	±5%	1.0
41	CL31C122JBCNND □		1.2nF	50	±5%	1.0
42	CL31C152JBCNND □		1.5nF	50	±5%	1.0
43	CL31C182JBCNND □		1.8nF	50	±5%	1.0
44	CL31C222JBCNND □		2.2nF	50	±5%	1.0
45	CL31C272JBFNND □		2.7nF	50	±5%	1.4
46	CL31C332JBFNND □		3.3nF	50	±5%	1.4
47	CL31C472JBFNND □		4.7nF	50	±5%	1.4
48	CL31C682JBHND □		6.8nF	50	±5%	1.8
49	CL31C103JAFNND □		10nF	25	±5%	1.4
50	CL31C223JBHND □		22nF	50	±5%	1.8
51	CL31C333JBHND □		33nF	50	±5%	1.8
52	CL31C473JBHND □		47nF	50	±5%	1.8
53	CL31C683JAHND □		68nF	25	±5%	1.8
54	CL31C104JAHND □		100nF	25	±5%	1.8
1	CL32C472JBFNND □		3.20 × 2.50	4.7nF	50	±5%
2	CL32C103JBFNND □	10nF		50	±5%	1.45
3	CL32C223JBHND □	22nF		50	±5%	1.80
4	CL32C333JBHND □	33nF		50	±5%	1.8
5	CL32C473JBHND □	47nF		50	±5%	1.8

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

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

Product Lineup (General Capacitors-X7R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL05B471KB5NND □	1.00 × 0.50	470pF	50	±10%	0.55
2	CL05B221KB5NND □		220pF	50	±10%	0.55
3	CL05B681KB5NND □		680pF	50	±10%	0.55
4	CL05B102KB5NND □		1nF	50	±10%	0.55
5	CL05B102KA5NND □		1nF	25	±10%	0.55
6	CL05B222KB5NND □		2.2nF	50	±10%	0.55
7	CL05B472KB5NND □		4.7nF	50	±10%	0.55
8	CL05B472KA5NND □		4.7nF	25	±10%	0.55
9	CL05B682KB5NND □		6.8nF	50	±10%	0.55
10	CL05B682KA5NND □		6.8nF	25	±10%	0.55
11	CL05B103KB5NND □		10nF	50	±10%	0.55
12	CL05B103KA5NND □		10nF	25	±10%	0.55
13	CL05B223KA5NND □		22nF	25	±10%	0.55
14	CL05B473K05NND □		47nF	16	±10%	0.55
15	CL05B473KP5NND □		47nF	10	±10%	0.55
16	CL05B683K05NND □		68nF	16	±10%	0.55
17	CL05B683KP5NND □		68nF	10	±10%	0.55
18	CL05B104K05NND □		100nF	16	±10%	0.55
19	CL05B104KP5NND □		100nF	10	±10%	0.55
20	CL05B104KQ5NND □		100nF	6.3	±10%	0.55
1	CL10B101KB8NND □	1.60 × 0.80	100pF	50	±10%	0.9
2	CL10B221KB8NND □		220pF	50	±10%	0.9
3	CL10B471KB8NND □		470pF	50	±10%	0.9
4	CL10B681KB8NND □		680pF	50	±10%	0.9
5	CL10B102KB8NND □		1nF	50	±10%	0.9
6	CL10B102KA8NND □		1nF	25	±10%	0.9
7	CL10B222KB8NND □		2.2nF	50	±10%	0.9
8	CL10B472KB8NND □		4.7nF	50	±10%	0.9
9	CL10B472KA8NND □		4.7nF	25	±10%	0.9
10	CL10B682KB8NND □		6.8nF	50	±10%	0.9
11	CL10B103KB8NND □		10nF	50	±10%	0.9
12	CL10B103KA8NND □		10nF	25	±10%	0.9
13	CL10B223KA8NND □		22nF	25	±10%	0.9
14	CL10B473KB8NND □		47nF	50	±10%	0.9
15	CL10B473KA8NND □		47nF	25	±10%	0.9
16	CL10B683KB8NND □		68nF	50	±10%	0.9
17	CL10B683KA8NND □		68nF	25	±10%	0.9
18	CL10B104KB8NND □		100nF	50	±10%	0.9
19	CL10B224KA8NND □		220nF	25	±10%	0.9
20	CL10B224K08NND □		220nF	16	±10%	0.9
21	CL10B225KP8NND □	2.2μF	10	±10%	0.9	
1	CL21B221KBANND □	2.00 × 1.25	220pF	50	±10%	0.75
2	CL21B471KBANND □		470pF	50	±10%	0.75
3	CL21B681KBANND □		680pF	50	±10%	0.75
4	CL21B102KBANND □		1nF	50	±10%	0.75
5	CL21B102KBCNND □		1nF	50	±10%	0.95
6	CL21B222KBANND □		2.2nF	50	±10%	0.75
7	CL21B222KBCNND □		2.2nF	50	±10%	0.95
8	CL21B682KBANND □		6.8nF	50	±10%	0.75
9	CL21B103KBANND □		10nF	50	±10%	0.75

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

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

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

Product Lineup (General Capacitors-X7R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)	
10	CL21B103KBCNND □	2.00 × 1.25	10nF	50	±10%	0.95	
11	CL21B223KBAANN □		22nF	50	±10%	0.75	
12	CL21B223KBCNND □		22nF	50	±10%	0.95	
13	CL21B473KBAANN □		47nF	50	±10%	0.75	
14	CL21B473KBCNND □		47nF	50	±10%	0.95	
15	CL21B683KAANN □		68nF	25	±10%	0.75	
16	CL21B683KBCNND □		68nF	50	±10%	0.95	
17	CL21B683KBFNND □		68nF	50	±10%	1.35	
18	CL21B104KBCNND □		100nF	50	±10%	0.95	
19	CL21B104KBFNND □		100nF	50	±10%	1.35	
20	CL21B224KBFNND □		220nF	50	±10%	1.35	
21	CL21B224KAFNND □		220nF	25	±10%	1.35	
22	CL21B224KOCNND □		220nF	16	±10%	0.95	
23	CL21B224KOFNND □		220nF	16	±10%	1.35	
24	CL21B474KBFNND □		470nF	50	±10%	1.35	
25	CL21B474KAFNND □		470nF	25	±10%	1.35	
26	CL21B474KOFNND □		470nF	16	±10%	1.35	
27	CL21B684KOFNND □		680nF	16	±10%	1.35	
28	CL21B684KPFNND □		680nF	10	±10%	1.35	
1	CL31B221KBCNND □		3.20 × 1.60	220pF	50	±10%	1.0
2	CL31B471KBCNND □			470pF	50	±10%	1.0
3	CL31B681KBCNND □			680pF	50	±10%	1.0
4	CL31B102KBCNND □			1nF	50	±10%	1.0
5	CL31B222KBCNND □			2.2nF	50	±10%	1.0
6	CL31B472KBCNND □			4.7nF	50	±10%	1.0
7	CL31B682KBCNND □			6.8nF	50	±10%	1.0
8	CL31B103KBCNND □			10nF	50	±10%	1.0
9	CL31B223KBCNND □			22nF	50	±10%	1.0
10	CL31B473KBCNND □	47nF		50	±10%	1.0	
11	CL31B683KBCNND □	68nF		50	±10%	1.0	
12	CL31B104KBCNND □	100nF		50	±10%	1.0	
13	CL31B104KACNND □	100nF		25	±10%	1.0	
14	CL31B224KBCNND □	220nF		50	±10%	1.0	
15	CL31B224KAFNND □	220nF		25	±10%	1.4	
16	CL31B474KBHND □	470nF		50	±10%	1.8	
17	CL31B474KAFNND □	470nF		25	±10%	1.4	
18	CL31B474KOCNND □	470nF		16	±10%	1.0	
19	CL31B684KBHND □	680nF		50	±10%	1.8	
20	CL31B684KAHND □	680nF		25	±10%	1.8	
21	CL31B105KBHND □	1μF		50	±10%	1.8	
22	CL31B105KAHND □	1μF		25	±10%	1.8	
23	CL31B105KOFNND □	1μF		16	±10%	1.4	
24	CL31B225KBHND □	2.2μF		50	±10%	1.8	
25	CL31B225KAHND □	2.2μF		25	±10%	1.8	
26	CL31B225KOHND □	2.2μF		16	±10%	1.8	
27	CL31B225KPFNND □	2.2μF		10	±10%	1.4	
1	CL32B104KBFNND □	3.20 × 2.50		100nF	50	±10%	1.45
2	CL32B224KBFNND □		220nF	50	±10%	1.45	
3	CL32B105KBHND □		1μF	50	±10%	1.8	
4	CL32B105KAFNND □		1μF	25	±10%	1.45	

※ □mark means packaging code. If you want to learn the code or quantity in detail, please see p80.
 ※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

Product Lineup (General Capacitors-X7R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
5	CL32B225KBJNND □	3.20 × 2.50	2.2μF	50	±10%	2.7
6	CL32B225KAINND □		2.2μF	25	±10%	2.2
7	CL32B474KBFNND □		470nF	50	±10%	1.45
8	CL32B474KAFNND □		470nF	25	±10%	1.45
9	CL32B475KQINND □		4.7μF	16	±10%	2.2
1	CL43B224KBFNND □		4.50 × 3.20	220nF	50	±10%
2	CL43B474KBFNND □	470nF		50	±10%	1.45
3	CL43B684KBFNND □	680nF		50	±10%	1.45
4	CL43B105KBFNND □	1μF		50	±10%	1.45
5	CL43B106KALNND □	10μF		25	±10%	3.5
6	CL43B226KPNND □	22μF		10	±10%	2.7
1	CL55B475KBJNND □	5.70 × 5.00	4.7μF	50	±10%	2.7

Product Lineup (General Capacitors-X5R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL05A223K05NND □	1.00 × 0.50	22nF	16	±10%	0.55
2	CL05A104KA5NND □		100nF	25	±10%	0.55
3	CL05A104K05NND □		100nF	16	±10%	0.55
4	CL05A104KP5NND □		100nF	10	±10%	0.55
5	CL05A104KQ5NND □		100nF	6.3	±10%	0.55
6	CL05A475M05NUN □		4.7μF	16	±20%	0.70

※ □mark means packaging code. If you want to learn the code or quantity in detail, please see p80.
 ※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.

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

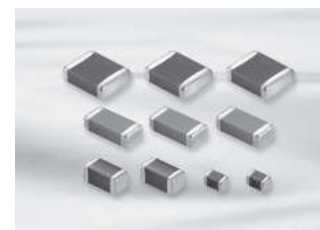
Application Manual for Surface Mounting

Product Lineup (General Capacitors-Y5V)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL05F103ZB5N0NN □	1.00×0.50	10nF	50	+80/-20%	0.55
2	CL05F103ZO5N0NN □		10nF	16	+80/-20%	0.55
3	CL05F223ZA5N0NN □		22nF	25	+80/-20%	0.55
4	CL05F223ZO5N0NN □		22nF	16	+80/-20%	0.55
5	CL05F473ZO5N0NN □		47nF	16	+80/-20%	0.55
6	CL05F683ZO5N0NN □		68nF	16	+80/-20%	0.55
7	CL05F104ZO5N0NN □		100nF	16	+80/-20%	0.55
1	CL10F103ZB8N0NN □	1.60×0.80	10nF	50	+80/-20%	0.9
2	CL10F223ZB8N0NN □		22nF	50	+80/-20%	0.9
3	CL10F473ZB8N0NN □		47nF	50	+80/-20%	0.9
4	CL10F473ZA8N0NN □		47nF	25	+80/-20%	0.9
5	CL10F473ZO8N0NN □		47nF	16	+80/-20%	0.9
6	CL10F683ZB8N0NN □		68nF	50	+80/-20%	0.9
7	CL10F104ZB8N0NN □		100nF	50	+80/-20%	0.9
8	CL10F104ZA8N0NN □		100nF	25	+80/-20%	0.9
9	CL10F224ZB8N0NN □		220nF	50	+80/-20%	0.9
10	CL10F224ZA8N0NN □		220nF	25	+80/-20%	0.9
11	CL10F225ZP8N0NN □		2.2μF	10	+80/-20%	0.9
12	CL10F225ZQ8N0NN □	2.2μF	6.3	+80/-20%	0.9	
1	CL21F103ZBANN □	2.00×1.25	10nF	50	+80/-20%	0.75
2	CL21F223ZBANN □		22nF	50	+80/-20%	0.75
3	CL21F473ZBANN □		47nF	50	+80/-20%	0.75
4	CL21F683ZBANN □		68nF	50	+80/-20%	0.75
5	CL21F104ZBANN □		100nF	50	+80/-20%	0.75
6	CL21F104ZBCN0NN □		100nF	50	+80/-20%	0.95
7	CL21F224ZBCN0NN □		220nF	50	+80/-20%	0.95
8	CL21F224ZBFN0NN □		220nF	50	+80/-20%	1.35
9	CL21F224ZOANN □		220nF	16	+80/-20%	0.75
10	CL21F474ZACN0NN □		470nF	25	+80/-20%	0.95
11	CL21F474ZBFN0NN □		470nF	50	+80/-20%	1.35
12	CL21F684ZAFN0NN □		680nF	25	+80/-20%	1.35
13	CL21F684ZOANN □		680nF	16	+80/-20%	0.75
14	CL21F225ZAFN0NN □		2.2μF	25	+80/-20%	1.35
15	CL21F225ZOFN0NN □		2.2μF	16	+80/-20%	1.35
1	CL31F103ZBCN0NN □	3.20×1.60	10nF	50	+80/-20%	1.0
2	CL31F104ZBCN0NN □		100nF	50	+80/-20%	1.0
3	CL31F224ZBCN0NN □		220nF	50	+80/-20%	1.0
4	CL31F474ZBCN0NN □		470nF	50	+80/-20%	1.0
5	CL31F105ZBFN0NN □		1μF	50	+80/-20%	1.4
6	CL31F105ZAFN0NN □		1μF	25	+80/-20%	1.4
7	CL31F105ZOCN0NN □		1μF	16	+80/-20%	1.0
8	CL31F225ZAFN0NN □		2.2μF	25	+80/-20%	1.4
9	CL31F225ZOCN0NN □		2.2μF	16	+80/-20%	1.0
1	CL32F475ZAHN0NN □	3.20×2.50	4.7μF	25	+80/-20%	1.8

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

※ For parts of higher capacitance than those above listed, refer to the product lineup of 'High Capacitance' subcategory.



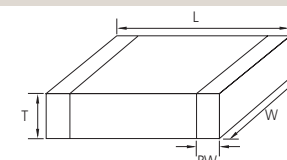
Feature

- Wide selection of size : from 0402 to 1812
- Highly reliable tolerance and high speed automatic chip placement on PCBs
- Wide capacitance range
- Highly reliable performance
- Highly resistant termination metal
- Tape & reel for surface mount assembly

Application

- Desktop PC, Note PC, HHP, DC-DC Converter, DSC
- LCD TV, LCD Monitor

Structure and Dimensions



Size Code	EIA Code	Dimension(mm)				
		L	W	T	Thickness Code	BW
05	0402	1.00±0.05	0.50±0.05	0.50±0.05	5	0.25±0.10
10	0603	1.60±0.10	0.80±0.10	0.50+0.0/-0.1(*)	5	0.30±0.20
		1.60±0.10	0.80±0.10	0.80±0.10	8	
21	0805	2.00±0.10	1.25±0.10	0.85±0.10	C	0.5+0.2/-0.3
		2.00±0.10	1.25±0.10	1.15±0.10	M	
		2.00±0.10	1.25±0.10	1.25±0.10	F	
		2.00±0.15	1.25±0.15	1.25±0.15	Q	
		2.00±0.20	1.25±0.20	1.25±0.20	Y	
		3.20±0.20	1.60±0.20	0.60±0.10(*)	6	
31	1206	3.20±0.15	1.60±0.15	0.85±0.15	C	0.50±0.30
		3.20±0.20	1.60±0.20	0.85±0.10(*)	C	
		3.20±0.20	1.60±0.20	1.15±0.10(*)	P	
		3.20±0.15	1.60±0.15	1.25±0.15	F	
		3.20±0.20	1.60±0.20	1.60±0.20	H	
		3.20±0.30	2.50±0.20	0.85±0.10(*)	C	
32	1210	3.20±0.30	2.50±0.20	0.90±0.10(*)	9	0.60±0.30
		3.20±0.30	2.50±0.20	1.60±0.20	H	
		3.20±0.30	2.50±0.20	1.80±0.20(*)	U	
		3.20±0.30	2.50±0.20	2.00±0.20	I	
		3.20±0.30	2.50±0.20	2.50±0.20	J	
		3.20±0.40	2.50±0.30	2.50±0.30	V	
42	1808	4.50±0.40	2.00±0.20	1.25±0.20	F	0.80±0.30
		4.50±0.40	2.00±0.20	1.40±0.20	G	
		4.50±0.40	2.00±0.20	2.00±0.20	I	
43	1812	4.50±0.40	3.20±0.30	1.25±0.20	F	0.80±0.30
		4.50±0.40	3.20±0.30	2.50±0.20	J	
		4.50±0.40	3.20±0.30	3.20±0.30	L	
55	2220	5.70±0.40	5.00±0.40	2.50±0.20	J	1.00±0.30
		5.70±0.40	5.00±0.40	3.20±0.30	L	

※ * Mark is only applicable to "L" code , 12th code in part number.

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

High Capacitance Table (X5R)

Size(mm)	Vr(V)	Capacitance (μF)															
		0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	220					
0402(1005)	4											15					
	6.3																
	10																
	16																
	25																
0603(1608)	4																
	6.3																
	10																
	16																
	25																
0805(2012)	4																
	6.3																
	10																
	16																
	25																
1206(3216)	6.3																
	10																
	16																
	25																
	50																
1210(3225)	6.3																
	10																
	16																
	25																

High Capacitance Table_Low Profile (X5R)

Size(mm)	Tmax (mm)	Vr(V)	Capacitance (μF)						
			1	2.2	4.7	10	22	47	
0402(1005)	0.33	6.3	X6S						
		10							
		16							
0603(1608)	0.5	6.3							
		10							
		16							
0805(2012)	0.7	10							
		16							
		25							
0805(2012)	0.85	25							
		4							(Tmax=1.0)
	0.95	6.3							(Tmax=1.0)
		10							
		16							
		25						X6S	
1206(3216)	0.7	10							
		6.3							
	0.95	10							
		16							
		25						X6S	
		50						(Tmax=1.0)	(Tmax=1.0)
1210(3225)	0.95	100						(Tmax=1.0)	
		16							
		25							
1210(3225)	2.0	35							
		50							
		50							

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

High Capacitance Table (X6S)

Size(mm)	Vr(V)	Capacitance (μF)										
		0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
0402(1005)	4	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
0603(1608)	4	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	16	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	25	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
0805(2012)	4	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	16	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	25	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
1206(3216)	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	16	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	25	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
1210(3225)	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	16	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	25	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	

High Capacitance Table (X7R)

Size(mm)	Vr(V)	Capacitance (μF)										
		0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
0402(1005)	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	16	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
0603(1608)	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	16	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	25	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	50	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
0805(2012)	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	16	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	25	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	35	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	50	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
1206(3216)	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	16	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	25	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	35	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
1210(3225)	6.3	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	10	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	16	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	25	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	
	50	0.1	0.22	0.47	1	2.2	4.7	10	22	47	100	

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

High Capacitance Table (Y5V)

Size(mm)	Vr(V)	Capacitance (μF)								
		0.1	0.22	0.47	1	2.2	4.7	10	22	47
0402(1005)	6.3									
	10									
	16									
	25									
0603(1608)	6.3									
	10									
	16									
	25									
	50									
0805(2012)	6.3									
	10									
	16									
	25									
	50									
1206(3216)	10									
	16									
	25									
	50				(Tmax=1.35)					
1210(3225)	6.3									
	10								(Tmax=2.7)	
	16								(Tmax=2.0)	
	25								(Tmax=1.2)	
	35								(Tmax=1.8)	
	50								(Tmax=1.5)	

High Capacitance Table -Low Profile (Y5V)

Size(mm)	Vr(V)	Capacitance (μF)					
		1	2.2	4.7	10	22	47
0805(2012)	6.3						
	10						

Product Lineup (High Capacitance-X5R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL05A224KQ5NNN □	1.00 × 0.50	0.22μF	6.3	±10%	0.55
2	CL05A224KR5NNN □		0.22μF	4	±10%	0.55
3	CL05A224KA5NNN □		0.22μF	25	±10%	0.55
4	CL05A224KQ5NNN □		0.22μF	16	±10%	0.55
5	CL05A224KP5NNN □		0.22μF	10	±10%	0.55
6	CL05A334MA5NNN □		0.33μF	25	±20%	0.55
7	CL05A334KQ5NNN □		0.33μF	6.3	±10%	0.55
8	CL05A334KR5NNN □		0.33μF	4	±10%	0.55
9	CL05A474KA5NNN □		0.47μF	25	±10%	0.55
10	CL05A474KQ5NNN □		0.47μF	16	±10%	0.55
11	CL05A474KP5NNN □		0.47μF	10	±10%	0.55
12	CL05A474KQ5NNN □		0.47μF	6.3	±10%	0.55
13	CL05A474KR5NNN □		0.47μF	4	±10%	0.55
14	CL05A105KA5NQ □		1μF	25	±10%	0.60
15	CL05A105KQ5NNN □		1μF	16	±10%	0.55
16	CL05A105KQ3LQ □		1μF	16	±10%	0.33
17	CL05A105KP5NNN □		1μF	10	±10%	0.55
18	CL05A105KP3LNN □		1μF	10	±10%	0.33
19	CL05A105KQ5NNN □		1μF	6.3	±10%	0.55
20	CL05A105KQ3LNN □		1μF	6.3	±10%	0.33
21	CL05A105KR5NNN □		1μF	4	±10%	0.55
22	CL05A105KR3LNN □		1μF	4	±10%	0.33
23	CL05A225MA5NUN □		2.2μF	25	±20%	0.70
24	CL05A225KQ5NQ □		2.2μF	16	±10%	0.60
25	CL05A225MP5NS □		2.2μF	10	±20%	0.57
26	CL05A225KP3LRN □		2.2μF	10	±10%	0.33
27	CL05A225MQ5NUN □		2.2μF	6.3	±20%	0.55
28	CL05A225KQ3LRN □		2.2μF	6.3	±10%	0.33
29	CL05A225MR5NUN □		2.2μF	4	±20%	0.55
30	CL05A225KR3LRN □		2.2μF	4	±10%	0.33
31	CL05A475MO5NUN □		4.7μF	16	±20%	0.70
32	CL05A475MP5NRR □		4.7μF	10	±20%	0.65
33	CL05A475MQ5NRR □		4.7μF	6.3	±20%	0.65
34	CL05A475MR5NRR □		4.7μF	4	±20%	0.65
35	CL05A106MP5NUN □		10μF	10	±20%	0.70
36	CL05A106MQ5NUN □		10μF	6.3	±20%	0.70
37	CL05A106MR5NRR □		10μF	4	±20%	0.65
38	CL05A156MR5NUN □		15μF	4	±20%	0.70
1	CL10A474KB8NNN □	1.60 × 0.80	0.47μF	50	±10%	0.90
2	CL10A474KA8NNN □		0.47μF	25	±10%	0.90
3	CL10A474KP8NNN □		0.47μF	10	±10%	0.90
4	CL10A474KQ8NNN □		0.47μF	6.3	±10%	0.90
5	CL10A474KR8NNN □		0.47μF	4	±10%	0.90
6	CL10A105KB8NNN □		1μF	50	±10%	0.90
7	CL10A105KA5LNN □		1μF	25	±10%	0.50
8	CL10A105KA8NNN □		1μF	25	±10%	0.90
9	CL10A105KQ8NNN □		1μF	16	±10%	0.90
10	CL10A105KQ5LNN □		1μF	16	±10%	0.50
11	CL10A105KP8NNN □		1μF	10	±10%	0.90
12	CL10A105KP5LNN □		1μF	10	±10%	0.50
13	CL10A105KQ8NNN □		1μF	6.3	±10%	0.90
14	CL10A105KQ5LNN □		1μF	6.3	±10%	0.50

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

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

Product Lineup (High Capacitance-X5R)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)	
15	CL10A105KR8NND □	1.60×0.80	1μF	4	±10%	0.90	
16	CL10A105KR5LND □		1μF	4	±10%	0.50	
17	CL10A105KA5LND □		1μF	25	±10%	0.50	
18	CL10A225KA8NND □		2.2μF	25	±10%	0.90	
19	CL10A225KA5LND □		2.2μF	25	±10%	0.50	
20	CL10A225KO8NND □		2.2μF	16	±10%	0.90	
21	CL10A225KO5LND □		2.2μF	16	±10%	0.50	
22	CL10A225KP8NND □		2.2μF	10	±10%	0.90	
23	CL10A225KP5LND □		2.2μF	10	±10%	0.50	
24	CL10A225KQ8NND □		2.2μF	6.3	±10%	0.90	
25	CL10A225KQ5LND □		2.2μF	6.3	±10%	0.50	
26	CL10A225KR8NND □		2.2μF	4	±10%	0.90	
27	CL10A225KR5LND □		2.2μF	4	±10%	0.50	
28	CL10A335KQ8NND □		3.3μF	6.3	±10%	0.90	
29	CL10A335KR8NND □		3.3μF	4	±10%	0.90	
30	CL10A475KA8NQN □		4.7μF	25	±10%	0.95	
31	CL10A475KO8NND □		4.7μF	16	±10%	0.90	
32	CL10A475KP8NND □		4.7μF	10	±10%	0.90	
33	CL10A475KP5LND □		4.7μF	10	±10%	0.50	
34	CL10A475KQ5LND □		4.7μF	6.3	±10%	0.50	
35	CL10A475KQ8NND □		4.7μF	6.3	±10%	0.90	
36	CL10A475KR5LND □		4.7μF	4	±10%	0.50	
37	CL10A475KR8NND □		4.7μF	4	±10%	0.90	
38	CL10A106KR8NND □		10μF	4	±10%	0.90	
39	CL10A106MR5LRN □		10μF	4	±20%	0.50	
40	CL10A106KQ8NND □		10μF	6.3	±10%	0.90	
41	CL10A106MQ5LRN □		10μF	6.3	±20%	0.50	
42	CL10A106MP8NND □		10μF	10	±20%	0.90	
43	CL10A106MO8NQN □		10μF	16	±20%	0.95	
44	CL10A106MA8NRN □		10μF	25	±20%	1.00	
45	CL10A226MR8NRN □		22μF	4	±20%	1.00	
46	CL10A226MQ8NRN □		22μF	6.3	±20%	1.00	
47	CL10A226MP8NRN □		22μF	10	±20%	1.00	
48	CL10A226MP8NUN □		22μF	10	±20%	1.05	
49	CL10A476MR8NZN □		47μF	4	±20%	1.10	
1	CL21A105KBQNNN □		2.00×1.25	1μF	50	±10%	1.40
2	CL21A105KAFNNN □			1μF	25	±10%	1.35
3	CL21A105KA6LNN □			1μF	25	±10%	0.70
4	CL21A105KOFNNN □			1μF	16	±10%	1.35
5	CL21A105KO6LNN □			1μF	16	±10%	0.70
6	CL21A105KQFNNN □			1μF	6.3	±10%	1.35
7	CL21A105KRFNNN □			1μF	4	±10%	1.35
8	CL21A225KBQNNN □			2.2μF	50	±10%	1.40
9	CL21A225KAFNNN □			2.2μF	25	±10%	1.35
10	CL21A225KO6LNN □			2.2μF	16	±10%	0.70
11	CL21A225KOFNNN □			2.2μF	16	±10%	1.35
12	CL21A225KPFNNN □			2.2μF	10	±10%	1.35
13	CL21A225KQFNNN □			2.2μF	6.3	±10%	1.35
14	CL21A225KRFNNN □			2.2μF	4	±10%	1.35
15	CL21A475KBQNNN □	4.7μF		50	±10%	1.40	
16	CL21A475KAQNNN □	4.7μF		25	±10%	1.40	
17	CL21A475KACLNN □	4.7μF		25	±10%	0.95	
18	CL21A475KOFNNN □	4.7μF		16	±10%	1.35	

※ □ mark means packaging code. If you want to learn the code or quantity in detail, please see p 80.

Product Lineup (High Capacitance-X5R)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)	
19	CL21A475KOCLNN □	2.00×1.25	4.7μF	16	±10%	0.95	
20	CL21A475KPFNNN □		4.7μF	10	±10%	1.35	
21	CL21A475KPCLNN □		4.7μF	10	±10%	0.95	
22	CL21A475KQFNNN □		4.7μF	6.3	±10%	1.35	
23	CL21A475KQCLNN □		4.7μF	6.3	±10%	0.95	
24	CL21A475KRFNNN □		4.7μF	4	±10%	1.35	
25	CL21A475KRCLNN □		4.7μF	4	±10%	0.95	
26	CL21A106KAYNNN □		10μF	25	±10%	1.45	
27	CL21A106KACLNN □		10μF	25	±10%	0.95	
28	CL21A106KA7LQN □		10μF	25	±10%	0.80	
29	CL21A106KOFNNN □		10μF	16	±10%	1.35	
30	CL21A106KQNNN □		10μF	16	±10%	1.40	
31	CL21A106KQCLNN □		10μF	16	±10%	0.95	
32	CL21A106KQCL3R □		10μF	16	±10%	0.95	
33	CL21A106KPFNNN □		10μF	10	±10%	1.35	
34	CL21A106KPCLQN □		10μF	10	±10%	0.95	
35	CL21A106KQFNNN □		10μF	6.3	±10%	1.35	
36	CL21A106KQCLNN □		10μF	6.3	±10%	0.95	
37	CL21A106KRFNNN □		10μF	4	±10%	1.35	
38	CL21A106KRCLNN □		10μF	4	±10%	0.95	
39	CL21A226MAQNNN □		22μF	25	±20%	1.40	
40	CL21A226MPQNNN □		22μF	10	±20%	1.40	
41	CL21A226MPCLRN □		22μF	10	±20%	0.95	
42	CL21A226MQQNNN □		22μF	6.3	±20%	1.40	
43	CL21A226MQCLRN □		22μF	6.3	±20%	0.95	
44	CL21A226MRQNNN □		22μF	4	±20%	1.40	
45	CL21A226MRCLRN □		22μF	4	±20%	0.95	
46	CL21A336MQELNN □		33μF	6.3	±20%	1.20	
47	CL21A336MQ9LNN □		33μF	6.3	±20%	1.00	
48	CL21A336MRELNN □		33μF	4	±20%	1.20	
49	CL21A336MR9LNN □		33μF	4	±20%	1.00	
50	CL21A476MQYNNN □		47μF	6.3	±20%	1.45	
51	CL21A476MRYYNN □		47μF	4	±20%	1.45	
52	CL21A476MQ9LRN □		47μF	6.3	±20%	1.00	
1	CL31A225KC9LNN □		3.20×1.60	2.2μF	100	±10%	1.00
2	CL31A475KBHNNN □			4.7μF	50	±10%	1.80
3	CL31A475KB9LNN □			4.7μF	50	±10%	1.00
4	CL31A475KAHNNN □			4.7μF	25	±10%	1.80
5	CL31A475KACLNN □			4.7μF	25	±10%	0.95
6	CL31A475KOHNNN □			4.7μF	16	±10%	1.80
7	CL31A475KOCLNN □	4.7μF		16	±10%	0.95	
8	CL31A475KPFNNN □	4.7μF		10	±10%	1.80	
9	CL31A475KQHNNN □	4.7μF		6.3	±10%	1.80	
10	CL31A475KRHNNN □	4.7μF		4	±10%	1.80	
11	CL31A106KBHNNN □	10μF		50	±10%	1.80	
12	CL31A106KAHNNN □	10μF		25	±10%	1.80	
13	CL31A106KACLNN □	10μF		25	±10%	0.95	
14	CL31A106KOHNNN □	10μF		16	±10%	1.80	
15	CL31A106KOCLNN □	10μF		16	±10%	0.95	
16	CL31A106KPFNNN □	10μF		10	±10%	1.80	
17	CL31A106KPCLNN □	10μF		10	±10%	0.95	
18	CL31A106KQHNNN □	10μF		6.3	±10%	1.80	
19	CL31A106KRHNNN □	10μF		4	±10%	1.80	
20	CL31A156KQHNNN □	15μF		6.3	±10%	1.80	

※ □ mark means packaging code. If you want to learn the code or quantity in detail, please see p 80.

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

Product Lineup (High Capacitance-X5R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)	
21	CL31A156KRHNNN □	3.20 × 1.60	15 μ F	4	±10%	1.80	
22	CL31A226KAHNNN □		22 μ F	25	±10%	1.80	
23	CL31A226KOHNNN □		22 μ F	16	±10%	1.80	
24	CL31A226KOCLENN □		22 μ F	16	±10%	0.95	
25	CL31A226KPHNNN □		22 μ F	10	±10%	1.80	
26	CL31A226KPCLENN □		22 μ F	10	±10%	0.95	
27	CL31A226KQHNNN □		22 μ F	6.3	±10%	1.80	
28	CL31A226KRHNNN □		22 μ F	4	±10%	1.80	
29	CL31A476MQHNNN □		47 μ F	6.3	±20%	1.80	
30	CL31A476MRHNNN □		47 μ F	4	±20%	1.80	
31	CL31A107MQHNNN □		100 μ F	6.3	±20%	1.80	
32	CL31A107MRHNNN □		100 μ F	4	±20%	1.80	
33	CL31A107MPHNNN □		100 μ F	10	±20%	1.80	
1	CL32A106KQCLENN □		3.20 × 2.50	10 μ F	6.3	±10%	0.95
2	CL32A106KRCLNN □			10 μ F	4	±10%	0.95
3	CL32A106KBULNN □			10 μ F	50	±10%	2.00
4	CL32A106KAJNNN □	10 μ F		25	±10%	2.70	
5	CL32A106KAULNN □	10 μ F		25	±10%	2.00	
6	CL32A106KOJNNN □	10 μ F		16	±10%	2.70	
7	CL32A106KPJNNN □	10 μ F		10	±10%	2.70	
8	CL32A226KAJNNN □	22 μ F		25	±10%	2.70	
9	CL32A226KOJNNN □	22 μ F		16	±10%	2.70	
10	CL32A226KOCLENN □	22 μ F		16	±10%	0.95	
11	CL32A226KPJNNN □	22 μ F		10	±10%	2.70	
12	CL32A226KQJNNN □	22 μ F		6.3	±10%	2.70	
13	CL32A226MQCLENN □	22 μ F		6.3	±20%	0.95	
14	CL32A226KRJNNN □	22 μ F		4	±10%	2.70	
15	CL32A226MRCLNN □	22 μ F		4	±20%	0.95	
16	CL32A476KOJNNN □	47 μ F		16	±10%	2.70	
17	CL32A476KPJNNN □	47 μ F		10	±10%	2.70	
18	CL32A476MQJNNN □	47 μ F		6.3	±20%	2.70	
19	CL32A476MRJNNN □	47 μ F		4	±20%	2.70	
20	CL32A107MPVNNN □	100 μ F		10	±20%	2.80	
21	CL32A107MQVNNN □	100 μ F		6.3	±20%	2.80	
22	CL32A107MRVNNN □	100 μ F		4	±20%	2.80	
23	CL32A157MQVNNN □	150 μ F		6.3	±20%	2.80	
24	CL32A227MQVNNN □	220 μ F		6.3	±20%	2.80	
1	CL43A476MQJNNN □	4.50 × 3.20	47 μ F	6.3	±20%	2.70	
2	CL43A476MRJNNN □		47 μ F	4	±20%	2.70	
3	CL43A107KQJNNN □		100 μ F	6.3	±10%	3.50	
4	CL43A107KRLNNN □		100 μ F	4	±10%	3.50	

※ □mark means packaging code. If you want to learn the code or quantity in detail, please see p 80.

Product Lineup (High Capacitance-X6S)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL05X224KP5N NN □	1.00 × 0.50	0.22 μ F	10	±10%	0.55
2	CL05X224KQ5N NN □		0.22 μ F	6.3	±10%	0.55
3	CL05X224KR5N NN □		0.22 μ F	4	±10%	0.55
4	CL05X474KP5N NN □		0.47 μ F	10	±10%	0.55
5	CL05X474KQ5N NN □		0.47 μ F	6.3	±10%	0.55
6	CL05X474KR5N NN □		0.47 μ F	4	±10%	0.55
7	CL05X105KP5N NN □		1 μ F	10	±10%	0.55
8	CL05X105MQ3L NN □		1 μ F	6.3	±20%	0.33
9	CL05X105KQ5N NN □		1 μ F	6.3	±10%	0.55
10	CL05X105MR3L NN □		1 μ F	4	±20%	0.33
11	CL05X105KR5N NN □		1 μ F	4	±10%	0.55
12	CL05X225MQ5NSN □		2.2 μ F	6.3	±20%	0.57
13	CL05X225MR5NSN □		2.2 μ F	4	±20%	0.57
1	CL10X474KA8N NN □	1.60 × 0.80	0.47 μ F	25	±10%	0.90
2	CL10X474KO8N NN □		0.47 μ F	16	±10%	0.90
3	CL10X474KP8N NN □		0.47 μ F	10	±10%	0.90
4	CL10X474KQ8N NN □		0.47 μ F	6.3	±10%	0.90
5	CL10X474KR8N NN □		0.47 μ F	4	±10%	0.90
6	CL10X105KA8N NN □		1 μ F	25	±10%	0.90
7	CL10X105KQ8N NN □		1 μ F	16	±10%	0.90
8	CL10X105KP8N NN □		1 μ F	10	±10%	0.90
9	CL10X105KQ8N NN □		1 μ F	6.3	±10%	0.90
10	CL10X105KR8N NN □		1 μ F	4	±10%	0.90
11	CL10X225KO8N NN □		2.2 μ F	16	±10%	0.90
12	CL10X225KP8N NN □		2.2 μ F	10	±10%	0.90
13	CL10X225KQ8N NN □		2.2 μ F	6.3	±10%	0.90
14	CL10X225KR8N NN □		2.2 μ F	4	±10%	0.90
15	CL10X475KA8NQ □		4.7 μ F	25	±10%	0.95
16	CL10X475KQ8NQ □		4.7 μ F	16	±10%	0.95
17	CL10X475KP5N NN □		4.7 μ F	10	±10%	0.90
18	CL10X475KQ8N NN □		4.7 μ F	6.3	±10%	0.90
19	CL10X475KR8N NN □		4.7 μ F	4	±10%	0.90
20	CL10X106MP8N NN □		10 μ F	10	±20%	0.90
21	CL10X106KQ8N NN □		10 μ F	6.3	±10%	0.90
22	CL10X106KR8N NN □		10 μ F	4	±10%	0.90
1	CL21X105KAFN NN □	2.00 × 1.25	1 μ F	25	±10%	1.35
2	CL21X105KOFN NN □		1 μ F	16	±10%	1.35
3	CL21X105KPFN NN □		1 μ F	10	±10%	1.35
4	CL21X105KQFN NN □		1 μ F	6.3	±10%	1.35
5	CL21X105KRFN NN □		1 μ F	4	±10%	1.35
6	CL21X225KAFN NN □		2.2 μ F	25	±10%	1.35
7	CL21X225KOFN NN □		2.2 μ F	16	±10%	1.35
8	CL21X225KPFN NN □		2.2 μ F	10	±10%	1.35
9	CL21X225KQFN NN □		2.2 μ F	6.3	±10%	1.35
10	CL21X225KRFN NN □		2.2 μ F	4	±10%	1.35
11	CL21X475KAQNN □		4.7 μ F	25	±10%	1.40
12	CL21X475KOFNN □		4.7 μ F	16	±10%	1.35
13	CL21X475KPFN NN □		4.7 μ F	10	±10%	1.35
14	CL21X475KQFN NN □		4.7 μ F	6.3	±10%	1.35

※ □mark means packaging code. If you want to learn the code or quantity in detail, please see p 80.

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

Product Lineup (High Capacitance -X6S)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)	
15	CL21X475KRFNNN □	2.00×1.25	4.7µF	4	±10%	1.35	
16	CL21X106KACLRN □		10µF	25	±10%	0.95	
17	CL21X106KAYNNN □		10µF	25	±10%	1.45	
18	CL21X106KOYNNN □		10µF	16	±10%	1.45	
19	CL21X106KPCLRN □		10µF	10	±10%	0.95	
20	CL21X106KPYNNN □		10µF	10	±10%	1.45	
21	CL21X106KQNNN □		10µF	6.3	±10%	1.40	
22	CL21X106KRQNNN □		10µF	4	±10%	1.40	
23	CL21X106KRCLNN □		10µF	4	±10%	0.95	
24	CL21X226MQNNN □		22µF	6.3	±20%	1.40	
25	CL21X226MRQNNN □		22µF	4	±20%	1.40	
26	CL21X476MRYNNN □		47µF	4	±20%	1.45	
1	CL31X475KAHNNN □		3.20×1.60	4.7µF	25	±10%	1.80
2	CL31X475KACLRN □			4.7µF	25	±10%	0.95
3	CL31X475KOHNNN □			4.7µF	16	±10%	1.80
4	CL31X475KPHNNN □			4.7µF	10	±10%	1.80
5	CL31X475MQHNNN □			4.7µF	6.3	±20%	1.80
6	CL31X475KRHNNN □			4.7µF	4	±10%	1.80
7	CL31X106KACLRN □			10µF	25	±10%	0.95
8	CL31X106KAHNNN □			10µF	25	±10%	1.80
9	CL31X106KOHNNN □			10µF	16	±10%	1.80
10	CL31X106KPHNNN □			10µF	10	±10%	1.80
11	CL31X106KQHNNN □			10µF	6.3	±10%	1.80
12	CL31X106KRHNNN □			10µF	4	±10%	1.80
13	CL31X226KOHNNN □			22µF	16	±10%	1.80
14	CL31X226KPHNNN □			22µF	10	±10%	1.80
15	CL31X226KQHNNN □	22µF		6.3	±10%	1.80	
16	CL31X226KRHNNN □	22µF		4	±10%	1.80	
17	CL31X107MQHNNN □	100µF		6.3	±20%	1.80	
18	CL31X107MRHNNN □	100µF		4	±20%	1.80	
1	CL32X106KAUNNN □	3.20×2.50		10µF	25	±10%	2.00
2	CL32X106KOJNNN □			10µF	16	±10%	2.70
3	CL32X106KPNJNN □			10µF	10	±10%	2.70
4	CL32X106KQJNNN □			10µF	6.3	±10%	2.70
5	CL32X106KRJNNN □			10µF	4	±10%	2.70
6	CL32X226KAJNNN □			22µF	25	±10%	2.70
7	CL32X226KOJNNN □			22µF	16	±10%	2.70
8	CL32X226KPNJNN □			22µF	10	±10%	2.70
9	CL32X226KQJNNN □		22µF	6.3	±10%	2.70	
10	CL32X226KRJNNN □		22µF	4	±10%	2.70	
11	CL32X476MPJNNN □		47µF	10	±20%	2.70	
12	CL32X476KQJNNN □		47µF	6.3	±10%	2.70	
13	CL32X476KRJNNN □		47µF	4	±10%	2.70	
14	CL32X107MQVNNN □		100µF	6.3	±20%	2.80	
15	CL32X107MRVNNN □		100µF	4	±20%	2.80	

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

Product Lineup (High Capacitance -X7R, X7S)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)	
1	CL05B224KO5NNN □	1.00×0.50	0.22µF	16	±10%	0.55	
2	CL05B224KP5NNN □		0.22µF	10	±10%	0.55	
3	CL05B224KQ5NNN □		0.22µF	6.3	±10%	0.55	
4	CL05B474KP5NNN □		0.47µF	10	±10%	0.55	
5	CL05B105KQ5NQ □		1µF	6.3	±10%	0.60	
1	CL05Y474KP5NNN □	1.00×0.50	0.47µF	10	±10%	0.55	
1	CL10B474KA8NNN □		1.60×0.80	0.47µF	25	±10%	0.90
2	CL10B474KO8NNN □			0.47µF	16	±10%	0.90
3	CL10B474KP8NNN □			0.47µF	10	±10%	0.90
4	CL10B474KQ8NNN □			0.47µF	6.3	±10%	0.90
5	CL10B105KA8NNN □	1µF		25	±10%	0.90	
6	CL10B105KQ8NNN □	1µF		16	±10%	0.90	
7	CL10B105KP8NNN □	1µF		10	±10%	0.90	
8	CL10B105KQ8NNN □	1µF		6.3	±10%	0.90	
9	CL10B225KP8NNN □	2.2µF		10	±10%	0.90	
10	CL10B225KQ8NNN □	2.2µF		6.3	±10%	0.90	
11	CL10B106MQ8NRR □	10µF		6.3	±20%	1.00	
1	CL21B105KBFNNN □	2.00×1.25	1µF	50	±10%	1.35	
2	CL21B105KLFNNN □		1µF	35	±10%	1.35	
3	CL21B105KAFNNN □		1µF	25	±10%	1.35	
4	CL21B105KOFNNN □		1µF	16	±10%	1.35	
5	CL21B105KPFNNN □		1µF	10	±10%	1.35	
6	CL21B105KQFNNN □		1µF	6.3	±10%	1.35	
7	CL21B225KAFNNN □		2.2µF	25	±10%	1.35	
8	CL21B225KQFNNN □		2.2µF	16	±10%	1.35	
9	CL21B225KPFNNN □		2.2µF	10	±10%	1.35	
10	CL21B225KQFNNN □		2.2µF	6.3	±10%	1.35	
11	CL21B475KOFNFN □		4.7µF	16	±10%	1.35	
12	CL21B475KPFNFN □		4.7µF	10	±10%	1.35	
13	CL21B475KQNNN □		4.7µF	6.3	±10%	1.40	
14	CL21B106KAYNNN □		10µF	25	±10%	1.45	
15	CL21B106KQNNN □		10µF	16	±10%	1.40	
16	CL21B106KPNNN □		10µF	10	±10%	1.40	
17	CL21B106KQNNN □		10µF	6.3	±10%	1.40	
18	CL21B226MQQNN □		22µF	6.3	±20%	1.40	
1	CL31B475KBHNNN □	3.20×1.60	4.7µF	50	±10%	1.80	
2	CL31B475KLHNNN □		4.7µF	35	±10%	1.80	
3	CL31B475KAHNNN □		4.7µF	25	±10%	1.80	
4	CL31B475KOHNNN □		4.7µF	16	±10%	1.80	
5	CL31B475KPHNNN □		4.7µF	10	±10%	1.80	
6	CL31B106KBHNS □		4.7µF	6.3	±10%	1.80	
7	CL31B106KLHNNN □		10µF	35	±10%	1.80	
8	CL31B106KAHNNN □		10µF	25	±10%	1.80	
9	CL31B106KOHNNN □		10µF	16	±10%	1.80	
10	CL31B106KPHNNN □		10µF	10	±10%	1.80	
11	CL31B106KQHNNN □		10µF	6.3	±10%	1.80	
12	CL31B226KPHNNN □		22µF	10	±10%	1.80	
1	CL32B106KBJNNN □	3.20×2.50	10µF	50	±10%	2.70	
2	CL32B106KAJNNN □		10µF	25	±10%	2.70	
3	CL32B106KOJNNN □		10µF	16	±10%	2.70	
4	CL32B106KPIJNN □		10µF	10	±10%	2.20	
5	CL32B106KQJNNN □		10µF	6.3	±10%	2.70	
6	CL32B226KAJNNN □		22µF	25	±10%	2.70	
7	CL32B226KOJNNN □		22µF	16	±10%	2.70	
8	CL32B226KPIJNN □		22µF	10	±10%	2.70	
9	CL32B226KQJNNN □		22µF	6.3	±10%	2.70	
10	CL32B476MQJNNN □		47µF	6.3	±20%	2.70	
11	CL32B476MPJNNN □		47µF	10	±20%	2.70	

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Medium-High Voltage Capacitors

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