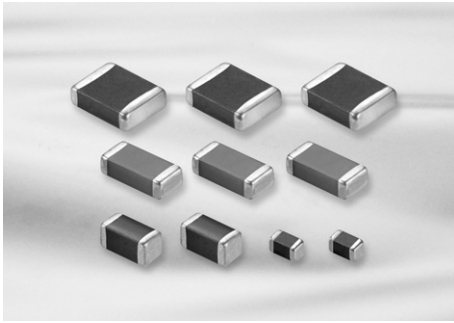


High Capacitance Capacitors



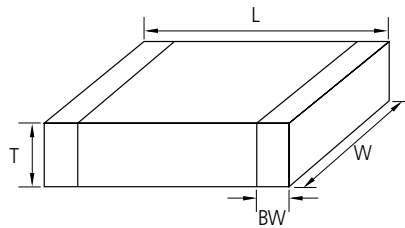
Feature

- 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
- ※ For using special purpose like Military, Medical, Aviation, Automobile device should be following a special specification.

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	0.2+0.15/-0.1
10	0603	1.60±0.10	0.80±0.10	0.50±0.05	5	0.30±0.20
				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
				1.25±0.10	F	
				1.25±0.15	Q	
31	1206	3.20±0.20	1.60±0.20	1.25±0.15	Y	0.50±0.30
				0.60±0.10	6	
				0.85±0.10	C	
				1.15±0.10	P	
32	1210	3.20±0.15	1.60±0.15	1.60±0.20	H	0.60±0.30
				1.60±0.20	H	
				0.85±0.10	C	
				0.90±0.10	9	
				1.80±0.20	U	
				2.00±0.20	I	
42	1808	3.20±0.20	2.50±0.20	2.50±0.20	J	0.80±0.30
				2.50±0.30	v	
43	1812	4.50±0.40	2.00±0.20	2.00±0.20	I	0.80±0.30
		4.50±0.40	3.20±0.30	3.20±0.30	L	0.80±0.30

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 (uF)									
		0.1	0.22	0.47	1	2.2	4.7	10	22	47	100
0402(1005)	4		■	■	■	■	■	■	■	■	■
	6.3		■	■	■	■	■	■	■	■	■
	10		■	■	■	■	■	■	■	■	■
	16		■	■	■	■	■	■	■	■	■
	25		■	■	■	■	■	■	■	■	■
0603(1608)	4			■	■	■	■	■	■	■	■
	6.3			■	■	■	■	■	■	■	■
	10			■	■	■	■	■	■	■	■
	16			■	■	■	■	■	■	■	■
	25			■	■	■	■	■	■	■	■
	50			■	■	■	■	■	■	■	■
0805(2012)	4				■	■	■	■	■	■	■
	6.3				■	■	■	■	■	■	■
	10				■	■	■	■	■	■	■
	16				■	■	■	■	■	■	■
	25				■	■	■	■	■	■	■
	50				■	■	■	■	■	■	■
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 (uF)								
			1	2.2	4.7	10	22	33	47		
0402(1005)	0.3	6.3	X6S								
		10									
		16									
0603(1608)	0.5	6.3									
		10									
		16									
		25									
0805(2012)	0.7	10									
		16									
		25									
	0.95	4								(Tmax=1.0)	
		6.3								(Tmax=1.0)	
10											
16											
25							X6S				
1206(3216)	0.7	10									
	0.95	6.3									
		10									
		16									
		25					X6S				
		50									
1210(3225)	0.95	16									
	2.0	25									
		35									
		50									

- Part Numbering System
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- Premium Capacitors for Automotive Applications
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- Application Manual for Surface Mounting



High Capacitance Table (X6S)

Size(mm)	Vr(V)	Capacitance (uF)									
		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							■	■	■	■

High Capacitance Table (X7R)

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

- Part Numbering System
- General Capacitors
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- Low ESL Capacitors
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- 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)
1	CL05A224KQ5NNN □	100×0.50	0.22 μF	6.3	±10%	0.55
2	CL05A224KR5NNN □		0.22 μF	4	±10%	0.55
3	CL05A224KA5NNN □		0.22 μF	25	±10%	0.55
4	CL05A224KO5NNN □		0.22 μF	16	±10%	0.55
5	CL05A224KP5NNN □		0.22 μF	10	±10%	0.55
6	CL05A334KA5NNN □		0.33 μF	25	±10%	0.55
7	CL05A334KQ5NNN □		0.33 μF	6.3	±10%	0.55
8	CL05A334KR5NNN □		0.33 μF	4	±10%	0.55
9	CL05A474KA5NNN □		0.47 μF	25	±10%	0.55
10	CL05A474KO5NNN □		0.47 μF	16	±10%	0.55
11	CL05A474KP5NNN □		0.47 μF	10	±10%	0.55
12	CL05A474KQ5NNN □		0.47 μF	6.3	±10%	0.55
13	CL05A474KR5NNN □		0.47 μF	4	±10%	0.55
14	CL05A105KA5NQN □		1 μF	25	±10%	0.60
15	CL05A105KO5NNN □		1 μF	16	±10%	0.55
16	CL05A105KO3LQN □		1 μF	16	±10%	0.33
17	CL05A105KP5NNN □		1 μF	10	±10%	0.55
18	CL05A105KP3LNN □		1 μF	10	±10%	0.33
19	CL05A105KQ5NNN □		1 μF	6.3	±10%	0.55
20	CL05A105KQ3LNN □		1 μF	6.3	±10%	0.33
21	CL05A105KR5NNN □		1 μF	4	±10%	0.55
22	CL05A105KR3LNN □		1 μF	4	±10%	0.33
23	CL05A225KO5NQN □		2.2 μF	16	±10%	0.60
24	CL05A225MP5NSN □		2.2 μF	10	±20%	0.57
25	CL05A225KP3LRN □		2.2 μF	10	±10%	0.33
26	CL05A225MQ5NNN □		2.2 μF	6.3	±20%	0.55
27	CL05A225KQ3LRN □		2.2 μF	6.3	±10%	0.33
28	CL05A225MR5NNN □		2.2 μF	4	±20%	0.55
29	CL05A225KR3LRN □		2.2 μF	4	±10%	0.33
30	CL05A475MP5NRN □		4.7 μF	10	±20%	0.65
31	CL05A475MQ5NRN □		4.7 μF	6.3	±20%	0.65
32	CL05A475MR5NRN □		4.7 μF	4	±20%	0.65
33	CL05A106MQ5NUN □		10 μF	6.3	±20%	0.70
34	CL05A106MR5NRN □		10 μF	4	±20%	0.65
1	CL10A474KB8NNN □	1.60×0.80	0.47 μF	50	±10%	0.90
2	CL10A474KA8NNN □		0.47 μF	25	±10%	0.90
3	CL10A474KP8NNN □		0.47 μF	10	±10%	0.90
4	CL10A474KQ8NNN □		0.47 μF	6.3	±10%	0.90
5	CL10A474KR8NNN □		0.47 μF	4	±10%	0.90
6	CL10A105KB8NNN □		1 μF	50	±10%	0.90
7	CL10A105KA85NN □		1 μF	25	±10%	0.55
8	CL10A105KA8NNN □		1 μF	25	±10%	0.90
9	CL10A105KO8NNN □		1 μF	16	±10%	0.90
10	CL10A105KO5LNN □		1 μF	16	±10%	0.55
11	CL10A105KP8NNN □		1 μF	10	±10%	0.90
12	CL10A105KP5LNN □		1 μF	10	±10%	0.55
13	CL10A105KQ8NNN □		1 μF	6.3	±10%	0.90
14	CL10A105KQ5LNN □		1 μF	6.3	±10%	0.55

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

- Part Numbering System
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Product Lineup (High Capacitance-X5R)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
15	CL10A105KR8N [□]	1.60×0.80	1 μF	4	±10%	0.90
16	CL10A105KR5L [□]		1 μF	4	±10%	0.55
17	CL10A225KA8N [□]		2.2 μF	25	±10%	0.90
18	CL10A105KA85N [□]		2.2 μF	25	±10%	0.55
19	CL10A225KO8N [□]		2.2 μF	16	±10%	0.90
20	CL10A225KO5L [□]		2.2 μF	16	±10%	0.55
21	CL10A225KP8N [□]		2.2 μF	10	±10%	0.90
22	CL10A225KP5L [□]		2.2 μF	10	±10%	0.55
23	CL10A225KQ8N [□]		2.2 μF	6.3	±10%	0.90
24	CL10A225KQ5L [□]		2.2 μF	6.3	±10%	0.55
25	CL10A225KR8N [□]		2.2 μF	4	±10%	0.90
26	CL10A225KR5L [□]		2.2 μF	4	±10%	0.55
27	CL10A335KQ8N [□]		3.3 μF	6.3	±10%	0.90
28	CL10A335KR8N [□]		3.3 μF	4	±10%	0.90
29	CL10A475KA8N [□]		4.7 μF	25	±10%	0.95
30	CL10A475KO8N [□]		4.7 μF	16	±10%	0.90
31	CL10A475KP8N [□]		4.7 μF	10	±10%	0.90
32	CL10A475KP5N [□]		4.7 μF	10	±10%	0.55
33	CL10A475KQ5L [□]		4.7 μF	6.3	±10%	0.55
34	CL10A475KQ8N [□]		4.7 μF	6.3	±10%	0.90
35	CL10A475KR5L [□]		4.7 μF	4	±10%	0.55
36	CL10A475KR8N [□]		4.7 μF	4	±10%	0.90
37	CL10A106MO8N [□]		10 μF	16	±20%	0.95
38	CL10A106MP8N [□]		10 μF	10	±20%	0.90
39	CL10A106KQ8N [□]		10 μF	6.3	±10%	0.90
40	CL10A106MQ5N [□]		10 μF	6.3	±10%	0.55
41	CL10A106KR8N [□]		10 μF	4	±10%	0.90
42	CL10A106MR5N [□]		10 μF	4	±10%	0.55
43	CL10A226MQ8N [□]		22 μF	6.3	±20%	1.00
44	CL10A226MR8N [□]		22 μF	4	±20%	1.00
1	CL21A105KBQ [□]	2.00×1.25	1 μF	50	±10%	1.40
2	CL21A105KAF [□]		1 μF	25	±10%	1.35
3	CL21A105KA6L [□]		1 μF	25	±10%	0.70
4	CL21A105KOF [□]		1 μF	16	±10%	1.35
5	CL21A105KO6L [□]		1 μF	16	±10%	0.70
6	CL21A105KQF [□]		1 μF	6.3	±10%	1.35
7	CL21A105KRF [□]		1 μF	4	±10%	1.35
8	CL21A225KBQ [□]		2.2 μF	50	±10%	1.40
9	CL21A225KAF [□]		2.2 μF	25	±10%	1.35
10	CL21A225KO6L [□]		2.2 μF	16	±10%	0.70
11	CL21A225KOF [□]		2.2 μF	16	±10%	1.35
12	CL21A225KPF [□]		2.2 μF	10	±10%	1.35
13	CL21A225KQF [□]		2.2 μF	6.3	±10%	1.35
14	CL21A225KRF [□]		2.2 μF	4	±10%	1.35
15	CL21A475KBQ [□]		4.7 μF	50	±10%	1.40
16	CL21A475KAQ [□]		4.7 μF	25	±10%	1.40
17	CL21A475KACL [□]		4.7 μF	25	±10%	0.95
18	CL21A475KOF [□]		4.7 μF	16	±10%	1.35
19	CL21A475KOC [□]		4.7 μF	16	±10%	0.70
20	CL21A475KPF [□]		4.7 μF	10	±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)
21	CL21A475KPCLNN □	2.00×1.25	4.7 μF	10	±10%	0.95
22	CL21A475KQFNNN □		4.7 μF	6.3	±10%	1.35
23	CL21A475KQCLNN □		4.7 μF	6.3	±10%	0.95
24	CL21A475KRFNNN □		4.7 μF	4	±10%	1.35
25	CL21A106KAYNNN □		10 μF	25	±10%	1.45
26	CL21A106KACLRN □		10 μF	25	±10%	0.95
27	CL21A106KOFNNN □		10 μF	16	±10%	1.35
28	CL21A106KOQNNN □		10 μF	16	±10%	1.40
29	CL21A106KOCLRN □		10 μF	16	±10%	0.70
30	CL21A106KPFNNN □		10 μF	10	±10%	1.35
31	CL21A106KPCLQN □		10 μF	10	±20%	0.95
32	CL21A106KQFNNN □		10 μF	6.3	±10%	1.35
33	CL21A106KQCLNN □		10 μF	6.3	±10%	0.95
34	CL21A475KRCLNN □		4.7 μF	4	±10%	0.95
35	CL21A106KRFNNN □		10 μF	4	±10%	1.35
36	CL21A106KRCLNN □		10 μF	4	±10%	0.95
37	CL21A226MPQNNN □		22 μF	10	±20%	1.40
38	CL21A226MPCLRN □		22 μF	10	±20%	0.95
39	CL21A226MQQNNN □		22 μF	6.3	±20%	1.40
40	CL21A226MQCLRN □		22 μF	6.3	±20%	0.95
41	CL21A226MRQNNN □		22 μF	4	±20%	1.40
42	CL21A226MRCLRN □		22 μF	4	±20%	0.95
43	CL21A336MQELNN □		33 μF	6.3	±20%	1.20
44	CL21A336MQ9LNN □		33 μF	6.3	±20%	1.00
45	CL21A336MRELNN □		33 μF	4	±20%	1.20
46	CL21A336MR9LNN □		33 μF	4	±20%	1.00
47	CL21A476MQYNNN □		47 μF	6.3	±20%	1.45
48	CL21A476MRYNNN □		47 μF	4.0	±20%	1.45
1	CL31A475KBHNNN □	3.20×1.60	4.7 μF	50	±10%	1.80
2	CL31A475KB9LNN □		4.7 μF	50	±10%	1.00
3	CL31A475KAHNNN □		4.7 μF	25	±10%	1.80
4	CL31A475KACLNN □		4.7 μF	25	±10%	0.95
5	CL31A475KOHNNN □		4.7 μF	16	±10%	1.80
6	CL31A475KOCLNN □		4.7 μF	16	±10%	0.95
7	CL31A475KPHNNN □		4.7 μF	10	±10%	1.80
8	CL31A475KQHNNN □		4.7 μF	6.3	±10%	1.80
9	CL31A475KRHNNN □		4.7 μF	4	±10%	1.80
10	CL31A106KBHNNN □		10 μF	50	±10%	1.80
11	CL31A106KAHNNN □		10 μF	25	±10%	1.80
12	CL31A106KACLNN □		10 μF	25	±10%	0.95
13	CL31A106KOHNNN □		10 μF	16	±10%	1.80
14	CL31A106KOCLNN □		10 μF	16	±10%	0.95
15	CL31A106KPHNNN □		10 μF	10	±10%	1.80
16	CL31A106KPCLNN □		10 μF	10	±10%	0.95
17	CL31A106KQHNNN □		10 μF	6.3	±10%	1.80
18	CL31A106KRHNNN □		10 μF	4	±10%	1.80
19	CL31A156KQHNNN □		15 μF	6.3	±10%	1.80
20	CL31A156KRHNNN □		15 μF	4	±10%	1.80
21	CL31A226KAHNNN □		22 μF	25	±10%	1.80
22	CL31A226KOHNNN □		22 μF	16	±10%	1.80

Part Numbering System

General Capacitors

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Array Type Capacitors

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Reliability Test Condition

Premium Capacitors for Automotive Applications

Packaging Specification

Application Manual for Surface Mounting

※ □ 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)	
23	CL31A226KOCCLNN □	3.20×1.60	22μF	16	±10%	0.95	
24	CL31A226KPHNNN □		22μF	10	±10%	1.80	
25	CL31A226KPCLNN □		22μF	10	±10%	0.95	
26	CL31A226KQHNNN □		22μF	6.3	±10%	1.80	
27	CL31A226KRHNNN □		22μF	4.0	±10%	1.80	
28	CL31A476MQHNNN □		47μF	6.3	±20%	1.80	
29	CL31A476MRHNNN □		47μF	4.0	±20%	1.80	
30	CL31A107MQHNNN □		100μF	6.3	±20%	1.80	
31	CL31A107MRHNNN □		100μF	4.0	±20%	1.80	
1	CL32A106KQCCLNN □		3.20×2.50	10μF	6.3	±10%	0.95
2	CL32A106KRCLNN □			10μF	4.0	±10%	0.95
3	CL32A106KBULNN □	10μF		50	±10%	2.00	
4	CL32A106KAJNNN □	10μF		25	±10%	2.70	
5	CL32A106KAULNN □	10μF		25	±10%	2.00	
6	CL32A106KOJNNN □	10μF		16	±10%	2.70	
7	CL32A106KPJNNN □	10μF		10	±10%	2.70	
8	CL32A226KAJNNN □	22μF		25	±10%	2.70	
9	CL32A226KOJNNN □	22μF		16	±10%	2.70	
10	CL32A226KOCCLNN □	22μF		16	±10%	0.95	
11	CL32A226KPJNNN □	22μF		10	±10%	2.70	
12	CL32A226KQJNNN □	22μF		6.3	±10%	2.70	
13	CL32A226MQCCLNN □	22μF		6.3	±20%	0.95	
14	CL32A226KRJNNN □	22μF		4.0	±10%	2.70	
15	CL32A226MRCLNN □	22μF		4.0	±20%	0.95	
16	CL32A476KPJNNN □	47μF		10	±10%	2.70	
17	CL32A476MQJNNN □	47μF		6.3	±20%	2.70	
18	CL32A476MRJNNN □	47μF		4.0	±20%	2.70	
19	CL32A107MPVNNN □	100μF		10	±20%	2.80	
20	CL32A107MQVNNN □	100μF		6.3	±20%	2.80	
21	CL32A107MRVNNN □	100μF		4.0	±20%	2.80	
1	CL43A476MQJNNN □	4.50×3.20	47μF	6.3	±20%	2.70	
2	CL43A476MRJNNN □		47μF	4.0	±20%	2.70	
3	CL43A107KQLNNN □		100μF	6.3	±20%	3.50	
4	CL43A107KRLNNN □		100μF	4.0	±20%	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	CL05X224KP5NNN □	1.00×0.50	0.22 μF	10	±10%	0.55
2	CL05X224KQ5NNN □		0.22 μF	6.3	±10%	0.55
3	CL05X224KR5NNN □		0.22 μF	4	±10%	0.55
4	CL05X474KP5NNN □		0.47 μF	10	±10%	0.55
5	CL05X474KQ5NNN □		0.47 μF	6.3	±10%	0.55
6	CL05X474KR5NNN □		0.47 μF	4	±10%	0.55
7	CL05X105KP5NNN □		1 μF	10	±10%	0.55
8	CL05X105MQ3LNN □		1 μF	6.3	±20%	0.33
9	CL05X105KQ5NNN □		1 μF	6.3	±10%	0.55
10	CL05X105MR3LNN □		1 μF	4	±20%	0.33
11	CL05X105KR5NNN □		1 μF	4	±10%	0.55
12	CL05X225MQ5NSN □		2.2 μF	6.3	±20%	0.57
13	CL05X225MR5NSN □		2.2 μF	4	±20%	0.57
1	CL10X474KA8NNN □	1.60×0.80	0.47 μF	25	±10%	0.90
2	CL10X474KO8NNN □		0.47 μF	16	±10%	0.90
3	CL10X474KP8NNN □		0.47 μF	10	±10%	0.90
4	CL10X474KQ8NNN □		0.47 μF	6.3	±10%	0.90
5	CL10X474KR8NNN □		0.47 μF	4	±10%	0.90
6	CL10X105KA8NNN □		1 μF	25	±10%	0.90
7	CL10X105KO8NNN □		1 μF	16	±10%	0.90
8	CL10X105KP8NNN □		1 μF	10	±10%	0.90
9	CL10X105KQ8NNN □		1 μF	6.3	±10%	0.90
10	CL10X105KR8NNN □		1 μF	4	±10%	0.90
11	CL10X225KA8NQN □		2.2 μF	25	±10%	0.90
12	CL10X225KO8NNN □		2.2 μF	16	±10%	0.90
13	CL10X225KP8NNN □		2.2 μF	10	±10%	0.90
14	CL10X225KQ8NNN □		2.2 μF	6.3	±10%	0.90
15	CL10X225KR8NNN □		2.2 μF	4	±10%	0.90
16	CL10X475KA8NQN □		4.7 μF	25	±10%	0.90
17	CL10X475KO8NQN □		4.7 μF	16	±10%	0.90
18	CL10X475KP5NNN □		4.7 μF	10	±10%	0.90
19	CL10X475KQ8NNN □		4.7 μF	6.3	±10%	0.90
20	CL10X475KR8NNN □		4.7 μF	4	±10%	0.90
21	CL10X106MP8NNN □		10 μF	10	±20%	0.90
22	CL10X106KQ8NNN □		10 μF	6.3	±10%	0.90
23	CL10X106KR8NNN □		10 μF	4	±10%	0.90
1	CL21X105KAFNNN □	2.00×1.25	1 μF	25	±10%	1.35
2	CL21X105KOFNNN □		1 μF	16	±10%	1.35
3	CL21X105KPFNNN □		1 μF	10	±10%	1.35
4	CL21X105KQFNNN □		1 μF	6.3	±10%	1.35
5	CL21X105KRFNNN □		1 μF	4	±10%	1.35
6	CL21X225KAFNNN □		2.2 μF	25	±10%	1.35
7	CL21X225KOFNNN □		2.2 μF	16	±10%	1.35
8	CL21X225KPFNNN □		2.2 μF	10	±10%	1.35
9	CL21X225KQFNNN □		2.2 μF	6.3	±10%	1.35
10	CL21X225KRFNNN □		2.2 μF	4	±10%	1.35
11	CL21X475KAQNNN □		4.7 μF	25	±10%	1.40
12	CL21X475KOFNNN □		4.7 μF	16	±10%	1.35
13	CL21X475KPFNNN □		4.7 μF	10	±10%	1.35
14	CL21X475KQFNNN □		4.7 μF	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 -X7R)

	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	CL21X106KPCLNN □		10μF	10	±10%	0.95	
20	CL21X106KPYNNN □		10μF	10	±10%	1.45	
21	CL21X106KQQNNN □		10μF	6.3	±10%	1.40	
22	CL21X106KRQNNN □		10μF	4	±10%	1.40	
23	CL21X106KRCLNN □		10μF	4	±10%	0.95	
24	CL21X226MQQNNN □		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	CL31X475KACLNN □			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	CL31X106KACLNN □	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	CL31X106KHNNN □	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	CL31X226KHNNN □	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	CL32X106KPJNNN □		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	CL32X226KPJNNN □		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%	2.70	
15	CL32X107MRVNNN □		100μF	4	±20%	2.70	

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

Product Lineup (High Capacitance -X7R)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL05B224KO5NNN □	1.00×0.50	0.22 μF	16	±10%	0.55
2	CL05B224KP5NNN □		0.22 μF	10	±10%	0.55
3	CL05B224KQ5NNN □		0.22 μF	6.3	±10%	0.55
1	CL10B474KA8NNN □	1.60×0.80	0.47 μF	25	±10%	0.90
2	CL10B474KO8NNN □		0.47 μF	16	±10%	0.90
3	CL10B474KP8NNN □		0.47 μF	10	±10%	0.90
4	CL10B474KQ8NNN □		0.47 μF	6.3	±10%	0.90
5	CL10B105KA8NNN □		1 μF	25	±10%	0.90
6	CL10B105KO8NNN □		1 μF	16	±10%	0.90
7	CL10B105KP8NNN □		1 μF	10	±10%	0.90
8	CL10B105KQ8NNN □		1 μF	6.3	±10%	0.90
9	CL10B225KP8NNN □		2.2 μF	10	±10%	0.90
10	CL10B225KQ8NNN □		2.2 μF	6.3	±10%	0.90
1	CL21B105KBFNNN □	2.00×1.25	1 μF	50	±10%	1.35
2	CL21B105KLFNNN □		1 μF	35	±10%	1.35
3	CL21B105KAFNNN □		1 μF	25	±10%	1.35
4	CL21B105KOFNNN □		1 μF	16	±10%	1.35
5	CL21B105KPFNNN □		1 μF	10	±10%	1.35
6	CL21B105KQFNNN □		1 μF	6.3	±10%	1.35
7	CL21B225KAFNNN □		2.2 μF	25	±10%	1.35
8	CL21B225KOFNNN □		2.2 μF	16	±10%	1.35
9	CL21B225KPFNNN □		2.2 μF	10	±10%	1.35
10	CL21B225KQFNNN □		2.2 μF	6.3	±10%	1.35
11	CL21B475KOFNFN □		4.7 μF	16	±10%	1.35
12	CL21B475KPFNNN □		4.7 μF	10	±10%	1.35
13	CL21B475KQQNNN □		4.7 μF	6.3	±10%	1.35
14	CL21B106KOQNNN □		10 μF	16	±10%	1.40
15	CL21B106KPQNNN □		10 μF	10	±10%	1.35
16	CL21B106KQQNNN □		10 μF	6.3	±10%	1.35
1	CL31B475KBHNNN □	3.20×1.60	4.7 μF	50	±10%	1.80
2	CL31B475KLHNNN □		4.7 μF	35	±10%	1.80
3	CL31B475KAHNNN □		4.7 μF	25	±10%	1.80
4	CL31B475KOHNNN □		4.7 μF	16	±10%	1.80
5	CL31B475KPHNNN □		4.7 μF	10	±10%	1.80
6	CL31B475KQHNNN □		4.7 μF	6.3	±10%	1.80
7	CL31B106KLHNNN □		10 μF	35	±10%	1.80
8	CL31B106KAHNNN □		10 μF	25	±10%	1.80
9	CL31B106KOHNNN □		10 μF	16	±10%	1.80
10	CL31B106KPHNNN □		10 μF	10	±10%	1.80
11	CL31B106KQHNNN □		10 μF	6.3	±10%	1.80
1	CL32B106KBJNNN □	3.20×2.50	10 μF	50	±10%	2.70
2	CL32B106KAJNNN □		10 μF	25	±10%	2.70
3	CL32B106KOJNNN □		10 μF	16	±10%	2.70
4	CL32B106KPINNN □		10 μF	10	±10%	2.70
5	CL32B106KQJNNN □		10 μF	6.3	±10%	2.70
6	CL32B226KAJNNN □		22 μF	25	±10%	2.70
7	CL32B226KOJNNN □		22 μF	16	±10%	2.70
8	CL32B226KPJNNN □		22 μF	10	±10%	2.70
9	CL32B226KQJNNN □		22 μF	6.3	±10%	2.70
10	CL32B476MQJNNN □		47 μF	6.3	±20%	2.70

※ □ 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 -Y5V)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)	
1	CL05F224ZO5NNN □	1.00×0.50	0.22μF	16	80%/-20%	0.55	
2	CL05F224ZP5NNN □		0.22μF	10	80%/-20%	0.55	
3	CL05F224ZQ5NNN □		0.22μF	6.3	80%/-20%	0.55	
4	CL05F474ZP5NNN □		0.47μF	10	80%/-20%	0.55	
5	CL05F474ZQ5NNN □		0.47μF	6.3	80%/-20%	0.55	
6	CL05F105ZQ5NNN □		1μF	6.3	80%/-20%	0.55	
1	CL10F474ZB8NNN □	1.60×0.80	0.47μF	50	80%/-20%	0.90	
2	CL10F474ZA8NNN □		0.47μF	25	80%/-20%	0.90	
3	CL10F474ZO8NNN □		0.47μF	16	80%/-20%	0.90	
4	CL10F474ZP8NNN □		0.47μF	10	80%/-20%	0.90	
5	CL10F105ZO8NNN □		1μF	16	80%/-20%	0.90	
6	CL10F105ZP8NNN □		1μF	10	80%/-20%	0.90	
7	CL10F225ZP8NNN □		2.2μF	10	80%/-20%	0.90	
8	CL10F225ZQ8NNN □		2.2μF	6.3	80%/-20%	0.90	
9	CL10F475ZQ8NNN □		4.7μF	6.3	80%/-20%	0.90	
1	CL21F105ZBFNNN □	2.00×1.25	1μF	50	80%/-20%	1.35	
2	CL21F105ZAFNNN □		1μF	25	80%/-20%	1.35	
3	CL21F105ZOFNNN □		1μF	16	80%/-20%	1.35	
4	CL21F225ZAFNNN □		2.2μF	25	80%/-20%	1.35	
5	CL21F225ZOFNNN □		2.2μF	16	80%/-20%	1.35	
6	CL21F475ZQFNNN □		4.7μF	6.3	80%/-20%	1.35	
1	CL21F475ZOFNNN □		4.7μF	16	80%/-20%	1.35	
2	CL21F475ZPFNNN □		4.7μF	10	80%/-20%	1.35	
3	CL21F106ZPFNNN □		10μF	10	80%/-20%	1.35	
4	CL21F106ZPCLNN □		10μF	10	80%/-20%	0.95	
5	CL21F106ZQFNNN □		10μF	6.3	80%/-20%	1.35	
6	CL21F106ZQCLNN □		10μF	6.3	80%/-20%	0.95	
1	CL31F475ZOHNNN □		3.20×1.60	4.7μF	16	80%/-20%	1.80
2	CL31F475ZPHNNN □			4.7μF	10	80%/-20%	1.80
3	CL31F475ZQHNNN □	4.7μF		6.3	80%/-20%	1.80	
4	CL31F106ZOHNNN □	10μF		16	80%/-20%	1.80	
5	CL31F106ZPHNNN □	10μF		10	80%/-20%	1.80	
6	CL31F106ZQHNNN □	10μF		6.3	80%/-20%	1.80	
7	CL31F226ZPHNNN □	22μF		10	80%/-20%	1.80	
8	CL31F226ZQHNNN □	22μF		6.3	80%/-20%	1.80	
1	CL32F106ZAHLNN □	3.20×2.50	10μF	25	80%/-20%	1.80	
2	CL32F106ZOELNN □		10μF	16	80%/-20%	2.00	
3	CL32F226ZPJNNN □		22μF	10	80%/-20%	2.70	
4	CL32F226ZPULNN □		22μF	10	80%/-20%	2.00	
5	CL32F476ZQJNNN □		47μF	6.3	80%/-20%	2.70	
6	CL32F107ZQJNNN □		100μF	6.3	80%/-20%	2.70	

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