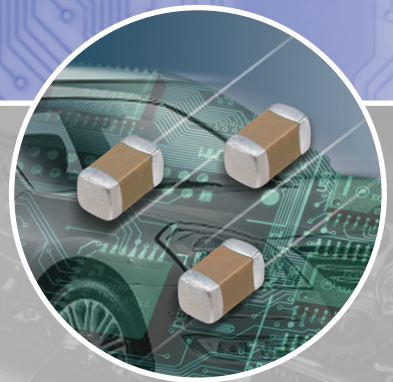


Premium Capacitors for Automotive Applications



SAMSUNG
ELECTRO-MECHANICS

SAMSUNG

[illegible]

★
Class I

Symbol	EIA Code	Operation Temperature Range(°C)	Temperature Coefficient Range(ppm/°C)
C	C0G	-55 ~ +125	0 ±30

Class II

Symbol	EIA Code	Operation Temperature Range(°C)	Capacitance Change (ΔC %)
B	X7R	-55 ~ +125	0 ±15

★★
Capacitance Tolerance

Code	Capacitance Tolerance	TC	Capacitance Step	Rated Capacitance
C	± 0.25 pF	C0G	Under 5 pF	E-12 series ★
D	± 0.5 pF	C0G	6.0 to 9.0 pF	E-12 series ★
J	± 5 %	C0G	Over 10 pF	E-12 series
K	± 10%	X7R	Under 0.01 μF	E-3 series
			Over 0.01 μF	E-6 series
M	± 20%	X7R	Under 0.01 μF	E-3 series
			Over 0.01 μF	E-6 series

★E-24 series is also available

Series	Capacitance Step											
E-3	1.0				2.2				4.7			
E-6	1.0		1.5		2.2		3.3		4.7		6.8	
E-12	1.0	1.2	1.5	1.8	2.2	2.7	3.3	3.9	4.7	5.6	6.8	8.2
E-24	1.0	1.1	1.2	1.3	2.2	2.4	2.7	3.0	4.7	5.1	5.6	6.2
	1.5	1.6	1.8	2.0	3.3	3.6	3.9	4.3	6.8	7.5	8.2	9.1

★★★

Size	Code	Thickness(mm)	Spec(mm) ★
0402(1005)	5	0.50	±0.05
0603(1608)	8	0.80	±0.10
0805(2012)	6	0.60	±0.10
	C	0.85	±0.10
	F	1.25	±0.10
	Q	1.25	±0.15
1206(3216)	C	0.85	±0.15
	P	1.15	±0.10
	H	1.60	±0.20

Part Numbering
System

General
Capacitors

High Capacitance
Capacitors

Super Small Size
Capacitors

Medium-High
Voltage Capacitors

Array Type
Capacitors

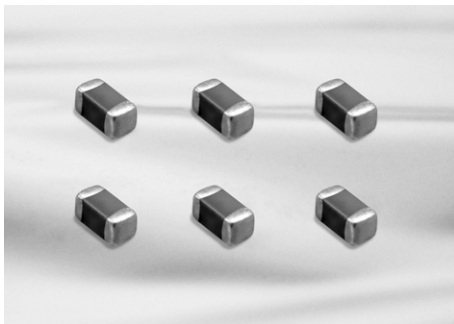
Low ESL
Capacitors

Reliability Test
Condition

Premium Capacitors
for Automotive
Applications

Packaging
Specification

Application Manual
for Surface Mounting



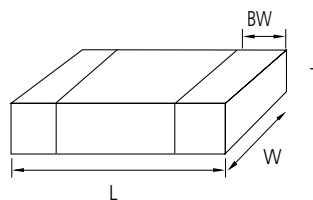
Feature

- Automotive products are manufactured in state of the art facilities recommended for registration to ISO/TS 16949:2002.
- Automotive products meet AEC-Q-200 requirements.
- Automotive products are RoHS compliant.
- Samsung terminations are suitable for all flow and reflow soldering systems. (10/21/31 size type only)
- Automotive products meet JEDEC-020-D requirements.
- COG dielectric components contain BME and copper terminations with a Ni/Sn plated overcoat.
- X7R dielectric components have BME and soft terminations with a Ni/Sn plated overcoat.

Application

- Automotive Electronic Equipment
(Powertrain, Safety, Body & Chassis, Convenience, Infotainment)

Structure and Dimensions



Code	EIA Code	Dimension(mm)			
		L	W	T	BW
05	0402	1.00 ± 0.05	0.50 ± 0.05	$0.50 (\pm 0.05)$	0.25 ± 0.10
10	0603	1.60 ± 0.10	0.80 ± 0.10	$0.80 (\pm 0.10)$	0.3 ± 0.2
21	0805	2.00 ± 0.10	1.25 ± 0.10	$0.60 (\pm 0.10)$	$0.5+0.2/-0.3$
				$0.85 (\pm 0.10)$	
				$1.25 (\pm 0.10)$	
		2.00 ± 0.15	1.25 ± 0.15	$1.25 (\pm 0.15)$	
31	1206	3.20 ± 0.20	1.60 ± 0.20	$0.85 (\pm 0.15)$	0.5 ± 0.3
				$1.15 (\pm 0.10)$	
				$1.60 (\pm 0.20)$	

Automotive Capacitors Table (C0G, X7R)

TC	Size(mm)	Thickness (mm)	Vr	Capacitance (pF)			Capacitance (nF)						
				100	220	470	1	2.2	4.7	10	22	47	100
COG	0402(1005)	0.50	50										
			100										
	0603(1608)	0.80	50										
			100		271								
	0805(2012)	0.60	50										
		0.85											
		1.25	100										

TC	Size(mm)	Thickness (mm)	Vr	Capacitance (nF)						Capacitance (μF)			
				10	22	47	100	220	470	1	2.2	4.7	10
X7R	0402(1005)	0.50	10										
			16										
			25										
			50										
	0603(1608)	0.80	10										
			16										
			25										
			50										
			100										
	0805(2012)	1.25	10										
		0.85											
		1.25	16										
		0.60											
		0.85	25										
		1.25											
		0.60											
		0.85	50										
		1.25											
		0.60											
		0.85	100										
		1.25											
	1206(3216)	1.60	10										
		1.15											
		1.60	16										
		0.85											
		1.15	25										
		1.60											
		0.85											
		1.15	50										
		1.60											

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 (Automotive Capacitors_COG)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL05C4R7CB51PN □	1.00×0.50	4.7pF	50	±0.25pF	0.55
2	CL05C4R7CC51PN □		4.7pF	100	±0.25pF	0.55
3	CL05C6R8DB51PN □		6.8pF	50	±0.5pF	0.55
4	CL05C6R8DC51PN □		6.8pF	100	±0.5pF	0.55
5	CL05C100JB51PN □		10pF	50	±5%	0.55
6	CL05C100JC51PN □		10pF	100	±5%	0.55
7	CL05C120JB51PN □		12pF	50	±5%	0.55
8	CL05C120JC51PN □		12pF	100	±5%	0.55
9	CL05C150JB51PN □		15pF	50	±5%	0.55
10	CL05C150JC51PN □		15pF	100	±5%	0.55
11	CL05C180JB51PN □		18pF	50	±5%	0.55
12	CL05C180JC51PN □		18pF	100	±5%	0.55
13	CL05C220JB51PN □		22pF	50	±5%	0.55
14	CL05C220JC51PN □		22pF	100	±5%	0.55
15	CL05C270JB51PN □		27pF	50	±5%	0.55
16	CL05C270JC51PN □		27pF	100	±5%	0.55
17	CL05C330JB51PN □		33pF	50	±5%	0.55
18	CL05C330JC51PN □		33pF	100	±5%	0.55
19	CL05C390JB51PN □		39pF	50	±5%	0.55
20	CL05C390JC51PN □		39pF	100	±5%	0.55
21	CL05C470JB51PN □		47pF	50	±5%	0.55
22	CL05C470JC51PN □		47pF	100	±5%	0.55
23	CL05C560JB51PN □		56pF	50	±5%	0.55
24	CL05C560JC51PN □		56pF	100	±5%	0.55
25	CL05C680JB51PN □		68pF	50	±5%	0.55
26	CL05C680JC51PN □		68pF	100	±5%	0.55
27	CL05C820JB51PN □		82pF	50	±5%	0.55
28	CL05C820JC51PN □		82pF	100	±5%	0.55
29	CL05C101JB51PN □		100pF	50	±5%	0.55
30	CL05C101JC51PN □		100pF	100	±5%	0.55
31	CL05C121JB51PN □		120pF	50	±5%	0.55
32	CL05C151JB51PN □		150pF	50	±5%	0.55
33	CL05C221JB51PN □		220pF	50	±5%	0.55
1	CL10C4R7CB81PN □	1.60×0.80	4.7pF	50	±0.25pF	0.90
2	CL10C4R7CC81PN □		4.7pF	100	±0.25pF	0.90
3	CL10C6R8DB81PN □		6.8pF	50	±0.5pF	0.90
4	CL10C6R8DC81PN □		6.8pF	100	±0.5pF	0.90
5	CL10C100JB81PN □		10pF	50	±5%	0.90
6	CL10C100JC81PN □		10pF	100	±5%	0.90
7	CL10C120JB81PN □		12pF	50	±5%	0.90
8	CL10C120JC81PN □		12pF	100	±5%	0.90
9	CL10C150JB81PN □		15pF	50	±5%	0.90
10	CL10C150JC81PN □		15pF	100	±5%	0.90
11	CL10C180JB81PN □		18pF	50	±5%	0.90
12	CL10C180JC81PN □		18pF	100	±5%	0.90
13	CL10C220JB81PN □		22pF	50	±5%	0.90
14	CL10C220JC81PN □		22pF	100	±5%	0.90
15	CL10C270JB81PN □		27pF	50	±5%	0.90
16	CL10C270JC81PN □		27pF	100	±5%	0.90
17	CL10C330JB81PN □		33pF	50	±5%	0.90

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

Product Lineup (Automotive Capacitors_COG)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
18	CL10C330JC81PN □	1.60 × 0.80	33 pF	100	±5%	0.90
19	CL10C390JB81PN □		39 pF	50	±5%	0.90
20	CL10C390JC81PN □		39 pF	100	±5%	0.90
21	CL10C470JB81PN □		47 pF	50	±5%	0.90
22	CL10C470JC81PN □		47 pF	100	±5%	0.90
23	CL10C560JB81PN □		56 pF	50	±5%	0.90
24	CL10C560JC81PN □		56 pF	100	±5%	0.90
25	CL10C680JB81PN □		68 pF	50	±5%	0.90
26	CL10C680JC81PN □		68 pF	100	±5%	0.90
27	CL10C820JB81PN □		82 pF	50	±5%	0.90
28	CL10C820JC81PN □		82 pF	100	±5%	0.90
29	CL10C101JB81PN □		100 pF	50	±5%	0.90
30	CL10C101JC81PN □		100 pF	100	±5%	0.90
31	CL10C121JB81PN □		120 pF	50	±5%	0.90
32	CL10C151JB81PN □		150 pF	50	±5%	0.90
33	CL10C221JB81PN □		220 pF	50	±5%	0.90
34	CL10C221JC81PN □		220 pF	100	±5%	0.90
35	CL10C271JB81PN □		270 pF	50	±5%	0.90
36	CL10C331JB81PN □		330 pF	50	±5%	0.90
37	CL10C391JB81PN □		390 pF	50	±5%	0.90
38	CL10C471JB81PN □		470 pF	50	±5%	0.90
39	CL10C561JB81PN □		560 pF	50	±5%	0.90
40	CL10C681JB81PN □		680 pF	50	±5%	0.90
41	CL10C821JB81PN □		820 pF	50	±5%	0.90
42	CL10C102JB81PN □		1.0 nF	50	±5%	0.90
1	CL21C100JB61PN □	2.00 × 1.25	10 pF	50	±5%	0.70
2	CL21C100JC61PN □		10 pF	100	±5%	0.70
3	CL21C120JB61PN □		12 pF	50	±5%	0.70
4	CL21C120JC61PN □		12 pF	100	±5%	0.70
5	CL21C150JB61PN □		15 pF	50	±5%	0.70
6	CL21C150JC61PN □		15 pF	100	±5%	0.70
7	CL21C180JB61PN □		18 pF	50	±5%	0.70
8	CL21C180JC61PN □		18 pF	100	±5%	0.70
9	CL21C220JB61PN □		22 pF	50	±5%	0.70
10	CL21C220JC61PN □		22 pF	100	±5%	0.70
11	CL21C270JB61PN □		27 pF	100	±5%	0.70
12	CL21C330JB61PN □		33 pF	50	±5%	0.70
13	CL21C330JC61PN □		33 pF	100	±5%	0.70
14	CL21C390JB61PN □		39 pF	50	±5%	0.70
15	CL21C390JC61PN □		39 pF	100	±5%	0.70
16	CL21C470JB61PN □		47 pF	50	±5%	0.70
17	CL21C470JC61PN □		47 pF	100	±5%	0.70
18	CL21C560JB61PN □		56 pF	50	±5%	0.70
19	CL21C560JC61PN □		56 pF	100	±5%	0.70
20	CL21C680JB61PN □		68 pF	50	±5%	0.70
21	CL21C680JC61PN □		68 pF	100	±5%	0.70
22	CL21C820JB61PN □		82 pF	50	±5%	0.70
23	CL21C820JC61PN □		82 pF	100	±5%	0.70
24	CL21C101JB61PN □		100 pF	50	±5%	0.70
25	CL21C101JC61PN □		100 pF	100	±5%	0.70

※ □ 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 (Automotive Capacitors_COG)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
26	CL21C121JB61PN □	2.00×1.25	120pF	50	±5%	0.70
27	CL21C121JC61PN □		120pF	100	±5%	0.70
28	CL21C151JB61PN □		150pF	50	±5%	0.70
29	CL21C151JC61PN □		150pF	100	±5%	0.70
30	CL21C221JB61PN □		220pF	50	±5%	0.70
31	CL21C221JC61PN □		220pF	100	±5%	0.70
32	CL21C271JB61PN □		270pF	50	±5%	0.70
33	CL21C271JC61PN □		270pF	100	±5%	0.70
34	CL21C331JB61PN □		330pF	50	±5%	0.70
35	CL21C331JC61PN □		330pF	100	±5%	0.70
36	CL21C471JBC1PN □		470pF	50	±5%	0.95
37	CL21C471JCC1PN □		470pF	100	±5%	0.95
38	CL21C561JBC1PN □		560pF	50	±5%	0.95
39	CL21C561JCC1PN □		560pF	100	±5%	0.95
40	CL21C681JBC1PN □		680pF	50	±5%	0.95
41	CL21C681JCC1PN □		680pF	100	±5%	0.95
42	CL21C821JBC1PN □		820pF	50	±5%	0.95
43	CL21C821JCC1PN □		820pF	100	±5%	0.95
44	CL21C102JBF1PN □		1.0nF	50	±5%	1.35
45	CL21C102JBC1PN □		1.0nF	50	±5%	0.95
46	CL21C102JCF1PN □		1.0nF	100	±5%	1.35
47	CL21C102JCC1PN □		1.0nF	100	±5%	0.95
48	CL21C122JBF1PN □		1.2nF	50	±5%	1.35
49	CL21C122JBC1PN □		1.2nF	50	±5%	0.95
50	CL21C152JBF1PN □		1.5nF	50	±5%	1.35
51	CL21C152JBC1PN □		1.5nF	50	±5%	0.95
52	CL21C182JBF1PN □		1.8nF	50	±5%	1.35
53	CL21C182JBC1PN □		1.8nF	50	±5%	0.95
54	CL21C222JBF1PN □		2.2nF	50	±5%	1.35
55	CL21C222JBC1PN □		2.2nF	50	±5%	0.95
56	CL21C272JBF1PN □		2.7nF	50	±5%	1.35
57	CL21C272JBC1PN □		2.7nF	50	±5%	0.95
58	CL21C332JBF1PN □		3.3nF	50	±5%	1.35
59	CL21C332JBC1PN □		3.3nF	50	±5%	0.95
60	CL21C392JBF1PN □		3.9nF	50	±5%	1.35
61	CL21C392JBC1PN □		3.9nF	50	±5%	0.95
62	CL21C472JBF1PN □		4.7nF	50	±5%	1.35
63	CL21C472JBC1PN □		4.7nF	50	±5%	0.95
64	CL21C562JBF1PN □		5.6nF	50	±5%	1.35
65	CL21C562JBC1PN □		5.6nF	50	±5%	0.95
66	CL21C682JBF1PN □		6.8nF	50	±5%	1.35
67	CL21C822JBF1PN □		8.2nF	50	±5%	1.35
68	CL21C103JBF1PN □		10nF	50	±5%	1.35

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

Product Lineup (Automotive Capacitors_X7R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL05B331KB5VPN □	1.00 × 0.50	330pF	50	±10%	0.55
2	CL05B471KB5VPN □		470pF	50	±10%	0.55
3	CL05B681KB5VPN □		680pF	50	±10%	0.55
4	CL05B102KA5VPN □		1.0nF	25	±10%	0.55
5	CL05B102KB5VPN □		1.0nF	50	±10%	0.55
6	CL05B152KA5VPN □		1.5nF	25	±10%	0.55
7	CL05B152KB5VPN □		1.5nF	50	±10%	0.55
8	CL05B222KA5VPN □		2.2nF	25	±10%	0.55
9	CL05B222KB5VPN □		2.2nF	50	±10%	0.55
10	CL05B332KA5VPN □		3.3nF	25	±10%	0.55
11	CL05B332KB5VPN □		3.3nF	50	±10%	0.55
12	CL05B472KA5VPN □		4.7nF	25	±10%	0.55
13	CL05B472KB5VPN □		4.7nF	50	±10%	0.55
14	CL05B682KA5VPN □		6.8nF	25	±10%	0.55
15	CL05B682KB5VPN □		6.8nF	50	±10%	0.55
16	CL05B103KA5VPN □		10nF	25	±10%	0.55
17	CL05B103KB5VPN □		10nF	50	±10%	0.55
18	CL05B153KA5VPN □		15nF	25	±10%	0.55
19	CL05B153KB5VPN □		15nF	50	±10%	0.55
20	CL05B223KA5VPN □		22nF	25	±10%	0.55
21	CL05B223KB5VPN □		22nF	50	±10%	0.55
22	CL05B333KO5VPN □		33nF	16	±10%	0.55
23	CL05B473KO5VPN □		47nF	16	±10%	0.55
24	CL05B683KO5VPN □		68nF	16	±10%	0.55
25	CL05B104KO5VPN □		100nF	16	±10%	0.55

※ □ 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 (Automotive Capacitors_X7R)

	Part Number	Size L×W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL10B221KC8WPN □	1.60×0.80	220pF	100	±10%	0.90
2	CL10B331KC8WPN □		330pF	100	±10%	0.90
3	CL10B471KC8WPN □		470pF	100	±10%	0.90
4	CL10B681KC8WPN □		680pF	100	±10%	0.90
5	CL10B102KB8WPN □		1.0nF	50	±10%	0.90
6	CL10B102KC8WPN □		1.0nF	100	±10%	0.90
7	CL10B152KB8WPN □		1.5nF	50	±10%	0.90
8	CL10B152KC8WPN □		1.5nF	100	±10%	0.90
9	CL10B222KB8WPN □		2.2nF	50	±10%	0.90
10	CL10B222KC8WPN □		2.2nF	100	±10%	0.90
11	CL10B332KB8WPN □		3.3nF	50	±10%	0.90
12	CL10B332KC8WPN □		3.3nF	100	±10%	0.90
13	CL10B472KB8WPN □		4.7nF	50	±10%	0.90
14	CL10B472KC8WPN □		4.7nF	100	±10%	0.90
15	CL10B682KB8WPN □		6.8nF	50	±10%	0.90
16	CL10B682KC8WPN □		6.8nF	100	±10%	0.90
17	CL10B103KB8WPN □		10nF	50	±10%	0.90
18	CL10B103KC8WPN □		10nF	100	±10%	0.90
19	CL10B153KB8WPN □		15nF	50	±10%	0.90
20	CL10B223KB8WPN □		22nF	50	±10%	0.90
21	CL10B333KA8WPN □		33nF	25	±10%	0.90
22	CL10B333KB8WPN □		33nF	50	±10%	0.90
23	CL10B473KA8WPN □		47nF	25	±10%	0.90
24	CL10B473KB8WPN □		47nF	50	±10%	0.90
25	CL10B683KA8WPN □		68nF	25	±10%	0.90
26	CL10B683KB8WPN □		68nF	50	±10%	0.90
27	CL10B104KA8WPN □		100nF	25	±10%	0.90
28	CL10B104KB8WPN □		100nF	50	±10%	0.90
29	CL10B154KO8VPN □		150nF	16	±10%	0.90
30	CL10B154KA8VPN □		150nF	25	±10%	0.90
31	CL10B224KO8VPN □		220nF	16	±10%	0.90
32	CL10B224KA8VPN □		220nF	25	±10%	0.90
33	CL10B334KO8VPN □		330nF	16	±10%	0.90
34	CL10B334KA8VPN □		330nF	25	±10%	0.90
35	CL10B474KO8VPN □		470nF	16	±10%	0.90
36	CL10B474KA8VPN □		470nF	25	±10%	0.90
37	CL10B684KO8VPN □		680nF	16	±10%	0.90
38	CL10B105KO8VPN □		1.0μF	16	±10%	0.90

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

Product Lineup (Automotive Capacitors_X7R)

	Part Number	Size L × W (mm)	Capacitance	Rated Voltage (Vdc)	Capacitance Tolerance	Thickness Max. (mm)
1	CL21B102KC6WPN □	2.00 × 1.25	1.0nF	100	±10%	0.70
2	CL21B152KC6WPN □		1.5nF	100	±10%	0.70
3	CL21B222KC6WPN □		2.2nF	100	±10%	0.70
4	CL21B332KC6WPN □		3.3nF	100	±10%	0.70
5	CL21B472KC6WPN □		4.7nF	100	±10%	0.70
6	CL21B682KC6WPN □		6.8nF	100	±10%	0.70
7	CL21B103KC6WPN □		10nF	100	±10%	0.70
8	CL21B153KC6WPN □		15nF	100	±10%	0.70
9	CL21B223KC6WPN □		22nF	100	±10%	0.70
10	CL21B333KCCWPN □		33nF	100	±10%	0.95
11	CL21B473KCCWPN □		47nF	100	±10%	0.95
12	CL21B683KCCWPN □		68nF	100	±10%	0.95
13	CL21B104KBFWPN □		100nF	50	±10%	1.35
14	CL21B104KBCWPN □		100nF	50	±10%	0.95
15	CL21B104KCFWPN □		100nF	100	±10%	1.35
16	CL21B104KCCWPN □		100nF	100	±10%	0.95
17	CL21B154KAFVFN □		150nF	25	±10%	1.35
18	CL21B154KBFVFN □		150nF	50	±10%	1.35
19	CL21B224KAFVFN □		220nF	25	±10%	1.35
20	CL21B224KBFVFN □		220nF	50	±10%	1.35
21	CL21B334KAFVFN □		330nF	25	±10%	1.35
22	CL21B334KBFVFN □		330nF	50	±10%	1.35
23	CL21B474KOFVFN □		470nF	16	±10%	1.35
24	CL21B474KAFVFN □		470nF	25	±10%	1.35
25	CL21B474KBFVFN □		470nF	50	±10%	1.35
26	CL21B684KOFVFN □		680nF	16	±10%	1.35
27	CL21B684KAFVFN □		680nF	25	±10%	1.35
28	CL21B105KOFVFN □		1.0μF	16	±10%	1.35
29	CL21B105KAFVFN □		1.0μF	25	±10%	1.35
30	CL21B225KPFVFN □		2.2μF	10	±10%	1.35
31	CL21B225KOFVFN □		2.2μF	16	±10%	1.35
32	CL21B335KPQVFN □		3.3μF	10	±10%	1.40
33	CL21B475KPQVFN □		4.7μF	10	±10%	1.40
1	CL31B104KBPWPN □	3.20 × 1.60	100nF	50	±10%	1.25
2	CL31B104KBCVFN □		100nF	50	±10%	1.00
3	CL31B154KBPWPN □		150nF	50	±10%	1.25
4	CL31B224KBPWPN □		220nF	50	±10%	1.25
5	CL31B334KBHWPN □		330nF	50	±10%	1.80
6	CL31B474KBHWPN □		470nF	50	±10%	1.80
7	CL31B684KBHWPN □		680nF	50	±10%	1.80
8	CL31B105KAPWPN □		1.0μF	25	±10%	1.25
9	CL31B105KBHWPN □		1.0μF	50	±10%	1.80
10	CL31B155KAHVFN □		1.5μF	25	±10%	1.80
11	CL31B155KBHVFN □		1.5μF	50	±10%	1.80
12	CL31B225KOHVFN □		2.2μF	16	±10%	1.80
13	CL31B225KAHVFN □		2.2μF	25	±10%	1.80
14	CL31B225KBHVFN □		2.2μF	50	±10%	1.80
15	CL31B335KOHVFN □		3.3μF	16	±10%	1.80
16	CL31B335KAHVFN □		3.3μF	25	±10%	1.80
17	CL31B475KOHVFN □		4.7μF	16	±10%	1.80
18	CL31B475KAHVFN □		4.7μF	25	±10%	1.80

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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