

Premium Capacitors for Automotive Applications

CL	10	B	104	K	B	8	W	P	N	C
1	2	3	4	5	6	7	8	9	10	11

1 SERIES CODE

CL = Multilayer Ceramic Capacitors

2 SIZE CODE

Code	inch(mm)	Code	inch(mm)	Code	inch(mm)
05	0402(1005)	21	0805(2012)	32	1210(3225)
10	0603(1608)	31	1206(3216)		

3 DIELECTRIC CODE

Class I

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

Class II

Symbol	EIA Code	Operation Temperature Range(°C)	Capacitance Change(%)
B	X7R	-55 ~ +125	±15
Y	X7S	-55 ~ +125	±22

4 CAPACITANCE CODE

Capacitance expressed in pF. 2 significant digits plus number of zeros.

example) 106=10 × 10⁶=10,000,000pF

For Values <10pF, Letter R denotes decimal point

example) 1R5 =1.5pF

5 TOLERANCE CODE

Capacitance Tolerance

Code	Capacitance Tolerance	TC	Capacitance series	Remark
C	±0.25pF	COG	E-12 series*	under 5pF
D	±0.5pF	COG	E-12 series*	5pF < Cp < 10pF
J	±5%	COG	E-12 series	≥ 10pF
K	±10%	X7R/X7S	E-6 series	
M	±20%	X7R/X7S	E-6 series	

* E-24 series is also available

※This code has only typical specifications. Please refer to individual specifications.

Series	Capacitance Step											
	1.0			2.2				4.7				
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

6 RATED VOLTAGE CODE

Q = 6.3V P = 10V O = 16V A = 25V B = 50V C = 100V

7 THICKNESS CODE

(Unit:mm)

Size mm(inch)	Code	Thickness*	Tolerance
1005(0402)	5	0.50	±0.05
1608(0603)	8	0.80	±0.10
2012(0805)	6	0.60	±0.10
	C	0.85	±0.10
	F	1.25	±0.10
	Q	1.25	±0.15
3216(1206)	C	0.85	±0.15
	P	1.15	±0.10
	H	1.60	±0.20
3225(1210)	I	2.00	±0.20
	J	2.50	±0.20

* In case of Higher Bending Strength , ESD protection capacitors, Please refer to individual specifications.

※ This code has only typical specifications. Please refer to individual specifications.

8 DESIGN CODE

Code	Inner electrode	Termination	Plating material	Design
1	Ni	Cu	Ni_Sn 100%	Standard
V	Ni	Cu/Metal Epoxy	Ni_Sn 100%	Standard
W	Ni	Cu/Metal Epoxy	Ni_Sn 100%	Open Mode
X	Ni	Cu/Metal Epoxy	Ni_Sn 100%	Float Mode

※ This code has only typical specifications. Please refer to individual specifications.

9 PRODUCT CODE OR SIZE CONTROL CODE

P = Automotive product meet AEC-Q200.

10 CONTROL CODE

N = Standard J = Higher Bending Strength E = ESD Protection

11 PACKAGING CODE

Code	Type	Code	Type
C	Cardbord Tape, 7" reel	E	Embossed Tape, 7" reel
D/L	Cardbord Tape, 13" reel (Quantity option)	F	Embossed Tape, 13" reel

※ If you want to learn to the code or quantity in detail, please see page 148.

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General Automotive Capacitors

Feature

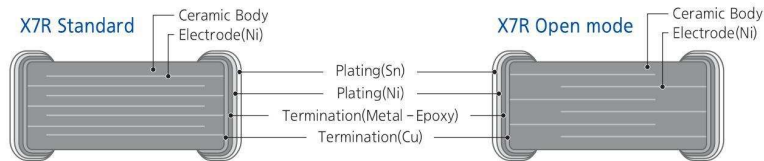
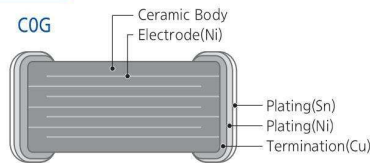
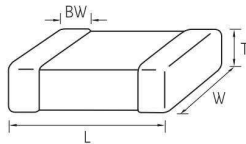


- Automotive products are manufactured in state of the art facilities recommend for registration to ISO / TS 16949 : 2002.
- Automotive products meet AEC – Q200 requirements.
- Automotive products are RoHS compliant.
- Automotive products meet JEDEC – 020 – D requirements.
- X7R dielectric components have BME and metal – epoxy terminations with a Ni / Sn plated overcoat.
- COG dielectric components contain BME and copper terminations with a Ni / Sn plated overcoat.
- Size 0603 / 0805 / 1206 is suitable for flow and reflow soldering.
- Size 0402 and smaller (≤ 0402) and 1210 and bigger (≥ 1210) is suitable for reflow soldering.

Application

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

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	0.80±0.10	8	0.30±0.20
21	0805	2.00±0.10	1.25±0.10	0.60±0.10	C	0.50±0.20/-0.30
				0.85±0.10		
				1.25±0.10		
31	1206	3.20±0.15	1.60±0.15	1.25±0.15	Q	0.50±0.30
				0.85±0.15		
				1.15±0.10		
32	1210	3.20±0.20	1.60±0.20	1.60±0.20	H	0.50±0.30
				2.00±0.20		
32	1210	3.20±0.30	2.50±0.20	2.00±0.20	I	0.60±0.30
				2.50±0.20		

Automotive Capacitance Table (COG)

Size inch (mm)	Thickness (mm)	Rated Voltage (Vdc)	Capacitance										
			pF					nF					
			10	22	47	100	220	470	1.0	2.2	4.7	10	22
0402 (1005)	0.50	50	[shaded]										
		100	[shaded]										
0603 (1608)	0.80	50	[shaded]										
		100	[shaded]										
0805 (2012)	0.60 0.85 1.25	50	[shaded]										
		100	[shaded]										
		100	[shaded]										

Automotive Capacitance Table (X7R)

Size inch (mm)	Thickness (mm)	Rated Voltage (Vdc)	Capacitance													
			nF					uF								
			10	22	47	100	220	470	1.0	2.2	4.7	10	22			
0402 (1005)	0.50	10														
		16														
		25														
		50														
0603 (1608)	0.80	10														
		16														
		25														
		50														
		100														
0805 (2012)	1.25	10														
	0.85	16														
	1.25															
	0.60	25														
	0.85															
	1.25															
	0.60	50														
	0.85															
	1.25															
	0.60															
	0.85	100														
	1.25															
0.60																
1206 (3216)	1.60	10														
	1.15	16														
	1.60															
	0.85	25														
	1.15															
	1.60															
	0.85	50														
	1.15															
	1.60															
	0.85															
	1.15	100														
1210 (3225)	2.50	10														
	2.50	16														
	2.50	25														
	2.50	50														

General Automotive Capacitors

Product Line Up (Automotive Capacitors – COG)

■ Size : 1.00 X 0.50mm (inch : 0402)

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number		
0.55mm	50Vdc	4.7pF	±0.25pF	CL05C4R7CB51PN□		
		6.8pF	±0.5pF	CL05C6R8DB51PN□		
		10pF	±5%	CL05C100JB51PN□		
		12pF	±5%	CL05C120JB51PN□		
		15pF	±5%	CL05C150JB51PN□		
		18pF	±5%	CL05C180JB51PN□		
		22pF	±5%	CL05C220JB51PN□		
		33pF	±5%	CL05C330JB51PN□		
		39pF	±5%	CL05C390JB51PN□		
		47pF	±5%	CL05C470JB51PN□		
		56pF	±5%	CL05C560JB51PN□		
		68pF	±5%	CL05C680JB51PN□		
		82pF	±5%	CL05C820JB51PN□		
		100pF	±5%	CL05C101JB51PN□		
		120pF	±5%	CL05C121JB51PN□		
		150pF	±5%	CL05C151JB51PN□		
		180pF	±5%	CL05C181JB51PN□		
		220pF	±5%	CL05C221JB51PN□		
		100Vdc	100Vdc	4.7pF	±0.25pF	CL05C4R7CC51PN□
				6.8pF	±0.5pF	CL05C6R8DC51PN□
				10pF	±5%	CL05C100JC51PN□
				12pF	±5%	CL05C120JC51PN□
15pF	±5%			CL05C150JC51PN□		
18pF	±5%			CL05C180JC51PN□		
22pF	±5%			CL05C220JC51PN□		
27pF	±5%			CL05C270JC51PN□		
33pF	±5%			CL05C330JC51PN□		
39pF	±5%			CL05C390JC51PN□		
47pF	±5%			CL05C470JC51PN□		
56pF	±5%			CL05C560JC51PN□		
68pF	±5%			CL05C680JC51PN□		
82pF	±5%			CL05C820JC51PN□		
100pF	±5%	CL05C101JC51PN□				

■ Size : 1.60 X 0.80mm (inch : 0603)

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number			
0.90mm	50Vdc	4.7pF	±0.25pF	CL10C4R7CB81PN□			
		6.8pF	±0.5pF	CL10C6R8DB81PN□			
		10pF	±5%	CL10C100JB81PN□			
		12pF	±5%	CL10C120JB81PN□			
		15pF	±5%	CL10C150JB81PN□			
		18pF	±5%	CL10C180JB81PN□			
		22pF	±5%	CL10C220JB81PN□			
		27pF	±5%	CL10C270JB81PN□			
		33pF	±5%	CL10C330JB81PN□			
		39pF	±5%	CL10C390JB81PN□			
		47pF	±5%	CL10C470JB81PN□			
		56pF	±5%	CL10C560JB81PN□			
		68pF	±5%	CL10C680JB81PN□			
		82pF	±5%	CL10C820JB81PN□			
		100pF	±5%	CL10C101JB81PN□			
		120pF	±5%	CL10C121JB81PN□			
		150pF	±5%	CL10C151JB81PN□			
		180pF	±5%	CL10C181JB81PN□			
		220pF	±5%	CL10C221JB81PN□			
		100Vdc	100Vdc	270pF	±5%	CL10C271JB81PN□	
				330pF	±5%	CL10C331JB81PN□	
				390pF	±5%	CL10C391JB81PN□	
	470pF			±5%	CL10C471JB81PN□		
	560pF			±5%	CL10C561JB81PN□		
	680pF			±5%	CL10C681JB81PN□		
	820pF			±5%	CL10C821JB81PN□		
	1.0nF			±5%	CL10C102JB81PN□		
	100Vdc			100Vdc	4.7pF	±0.25pF	CL10C4R7CC81PN□
					6.8pF	±0.5pF	CL10C6R8DC81PN□
					10pF	±5%	CL10C100JC81PN□
					12pF	±5%	CL10C120JC81PN□
					15pF	±5%	CL10C150JC81PN□
					18pF	±5%	CL10C180JC81PN□
					22pF	±5%	CL10C220JC81PN□
					27pF	±5%	CL10C270JC81PN□
					33pF	±5%	CL10C330JC81PN□
					39pF	±5%	CL10C390JC81PN□
					47pF	±5%	CL10C470JC81PN□
					56pF	±5%	CL10C560JC81PN□
		68pF	±5%		CL10C680JC81PN□		
		82pF	±5%		CL10C820JC81PN□		
		100pF	±5%		CL10C101JC81PN□		
120pF		±5%	CL10C121JC81PN□				
150pF		±5%	CL10C151JC81PN□				
180pF		±5%	CL10C181JC81PN□				
220pF		±5%	CL10C221JC81PN□				

※ □ mark means packaging code. If you want to learn the code or quantity in detail, please see p.148
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Product Line Up (Automotive Capacitors – COG)

■ Size : 2.00 X 1.25mm (inch : 0805)

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number	Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number	
0.70mm	50Vdc	10pF	±5%	CL21C100JB61PN □	0.95mm	100Vdc	470pF	±5%	CL21C471JCC1PN □	
		12pF	±5%	CL21C120JB61PN □			560pF	±5%	CL21C561JCC1PN □	
		15pF	±5%	CL21C150JB61PN □			680pF	±5%	CL21C681JCC1PN □	
		18pF	±5%	CL21C180JB61PN □			820pF	±5%	CL21C821JCC1PN □	
		22pF	±5%	CL21C220JB61PN □			1.0nF	±5%	CL21C102JCC1PN □	
		27pF	±5%	CL21C270JB61PN □			1.35mm	50Vdc	1.0nF	±5%
		33pF	±5%	CL21C330JB61PN □	1.2nF	±5%			CL21C122JBF1PN □	
		39pF	±5%	CL21C390JB61PN □	1.5nF	±5%			CL21C152JBF1PN □	
		47pF	±5%	CL21C470JB61PN □	1.8nF	±5%			CL21C182JBF1PN □	
		56pF	±5%	CL21C560JB61PN □	2.2nF	±5%			CL21C222JBF1PN □	
		68pF	±5%	CL21C680JB61PN □	2.7nF	±5%			CL21C272JBF1PN □	
		82pF	±5%	CL21C820JB61PN □	3.3nF	±5%			CL21C332JBF1PN □	
		100pF	±5%	CL21C101JB61PN □	3.9nF	±5%			CL21C392JBF1PN □	
		120pF	±5%	CL21C121JB61PN □	4.7nF	±5%			CL21C472JBF1PN □	
		150pF	±5%	CL21C151JB61PN □	5.6nF	±5%			CL21C562JBF1PN □	
		180pF	±5%	CL21C181JB61PN □	6.8nF	±5%			CL21C682JBF1PN □	
		220pF	±5%	CL21C221JB61PN □	8.2nF	±5%			CL21C822JBF1PN □	
		270pF	±5%	CL21C271JB61PN □	10nF	±5%			CL21C103JBF1PN □	
	330pF	±5%	CL21C331JB61PN □	100Vdc	1.0nF	±5%			CL21C102JCF1PN □	
	390pF	±5%	CL21C391JB61PN □							
	100Vdc	100Vdc	10pF	±5%	CL21C100JC61PN □					
			12pF	±5%	CL21C120JC61PN □					
			15pF	±5%	CL21C150JC61PN □					
			18pF	±5%	CL21C180JC61PN □					
			22pF	±5%	CL21C220JC61PN □					
			27pF	±5%	CL21C270JC61PN □					
			33pF	±5%	CL21C330JC61PN □					
			39pF	±5%	CL21C390JC61PN □					
			47pF	±5%	CL21C470JC61PN □					
			56pF	±5%	CL21C560JC61PN □					
			68pF	±5%	CL21C680JC61PN □					
			82pF	±5%	CL21C820JC61PN □					
			100pF	±5%	CL21C101JC61PN □					
			120pF	±5%	CL21C121JC61PN □					
			150pF	±5%	CL21C151JC61PN □					
			180pF	±5%	CL21C181JC61PN □					
220pF			±5%	CL21C221JC61PN □						
270pF			±5%	CL21C271JC61PN □						
330pF	±5%	CL21C331JC61PN □								
390pF	±5%	CL21C391JC61PN □								
0.95mm	50Vdc	470pF	±5%	CL21C471JBC1PN □						
		560pF	±5%	CL21C561JBC1PN □						
		680pF	±5%	CL21C681JBC1PN □						
		820pF	±5%	CL21C821JBC1PN □						
		1.0nF	±5%	CL21C102JBC1PN □						
		1.2nF	±5%	CL21C122JBC1PN □						
		1.5nF	±5%	CL21C152JBC1PN □						
		1.8nF	±5%	CL21C182JBC1PN □						
		2.2nF	±5%	CL21C222JBC1PN □						
		2.7nF	±5%	CL21C272JBC1PN □						
		3.3nF	±5%	CL21C332JBC1PN □						
		3.9nF	±5%	CL21C392JBC1PN □						
4.7nF	±5%	CL21C472JBC1PN □								
5.6nF	±5%	CL21C562JBC1PN □								

※ □ mark means packaging code. If you want to learn the code or quantity in detail, please see p.148
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General Automotive Capacitors

Product Line Up (Automotive Capacitors – X7R)

■ Size : 1.00 X 0.50mm (inch : 0402)

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number	
0.55mm	10Vdc	100nF	±10%	CL05B104KP5VPN □	
		16Vdc	1.0nF	±10%	CL05B102K05VPN □
			1.5nF	±10%	CL05B152K05VPN □
			2.2nF	±10%	CL05B222K05VPN □
			3.3nF	±10%	CL05B332K05VPN □
			4.7nF	±10%	CL05B472K05VPN □
			6.8nF	±10%	CL05B682K05VPN □
			10nF	±10%	CL05B103K05VPN □
			15nF	±10%	CL05B153K05VPN □
			22nF	±10%	CL05B223K05VPN □
			33nF	±10%	CL05B333K05VPN □
			47nF	±10%	CL05B473K05VPN □
			68nF	±10%	CL05B683K05VPN □
			100nF	±10%	CL05B104K05VPN □
	25Vdc	1.0nF	±10%	CL05B102KA5VPN □	
		1.5nF	±10%	CL05B152KA5VPN □	
		2.2nF	±10%	CL05B222KA5VPN □	
		3.3nF	±10%	CL05B332KA5VPN □	
		4.7nF	±10%	CL05B472KA5VPN □	
		6.8nF	±10%	CL05B682KA5VPN □	
		10nF	±10%	CL05B103KA5VPN □	
		15nF	±10%	CL05B153KA5VPN □	
		22nF	±10%	CL05B223KA5VPN □	
		33nF	±10%	CL05B333KA5VPN □	
		47nF	±10%	CL05B473KA5VPN □	
		50Vdc	330pF	±10%	CL05B331KB5VPN □
			470pF	±10%	CL05B471KB5VPN □
			560pF	±10%	CL05B561KB5VPN □
	680pF		±10%	CL05B681KB5VPN □	
	1.0nF		±10%	CL05B102KB5VPN □	
	1.5nF		±10%	CL05B152KB5VPN □	
	2.2nF		±10%	CL05B222KB5VPN □	
	3.3nF		±10%	CL05B332KB5VPN □	
	4.7nF		±10%	CL05B472KB5VPN □	
	6.8nF		±10%	CL05B682KB5VPN □	
	10nF		±10%	CL05B103KB5VPN □	
	15nF		±10%	CL05B153KB5VPN □	
	22nF		±10%	CL05B223KB5VPN □	
	33nF		±10%	CL05B333KB5VPN □	
	47nF	±10%	CL05B473KB5VPN □		

■ Size : 1.60 X 0.80mm (inch : 0603)

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number		
0.90mm	10Vdc	1.0uF	±10%	CL10B105KP8VPN □		
		16Vdc	47nF	±10%	CL10B473K08WPN □	
			68nF	±10%	CL10B683K08WPN □	
			100nF	±10%	CL10B104K08WPN □	
			150nF	±10%	CL10B154K08WPN □	
			220nF	±10%	CL10B224K08WPN □	
			330nF	±10%	CL10B334K08WPN □	
			470nF	±10%	CL10B474K08WPN □	
			680nF	±10%	CL10B684K08WPN □	
			1.0uF	±10%	CL10B105K08WPN □	
			25Vdc	1.0nF	±10%	CL10B102KA8WPN □
				1.5nF	±10%	CL10B152KA8WPN □
				2.2nF	±10%	CL10B222KA8WPN □
				3.3nF	±10%	CL10B332KA8WPN □
				4.7nF	±10%	CL10B472KA8WPN □
				6.8nF	±10%	CL10B682KA8WPN □
				10nF	±10%	CL10B103KA8WPN □
	15nF	±10%		CL10B153KA8WPN □		
	22nF	±10%		CL10B223KA8WPN □		
	33nF	±10%		CL10B333KA8WPN □		
	47nF	±10%		CL10B473KA8WPN □		
	68nF	±10%		CL10B683KA8WPN □		
	100nF	±10%		CL10B104KA8WPN □		
	150nF	±10%		CL10B154KA8WPN □		
	220nF	±10%		CL10B224KA8WPN □		
	330nF	±10%		CL10B334KA8WPN □		
	470nF	±10%	CL10B474KA8WPN □			
	50Vdc	470pF	±10%	CL10B471KB8WPN □		
		1.0nF	±10%	CL10B102KB8WPN □		
		1.5nF	±10%	CL10B152KB8WPN □		
		2.2nF	±10%	CL10B222KB8WPN □		
		3.3nF	±10%	CL10B332KB8WPN □		
		4.7nF	±10%	CL10B472KB8WPN □		
		6.8nF	±10%	CL10B682KB8WPN □		
		10nF	±10%	CL10B103KB8WPN □		
		15nF	±10%	CL10B153KB8WPN □		
		22nF	±10%	CL10B223KB8WPN □		
		33nF	±10%	CL10B333KB8WPN □		
		47nF	±10%	CL10B473KB8WPN □		
		68nF	±10%	CL10B683KB8WPN □		
		100nF	±10%	CL10B104KB8WPN □		
		150nF	±10%	CL10B154KB8WPN □		
		220nF	±10%	CL10B224KB8WPN □		
		100Vdc	220pF	±10%	CL10B221KC8WPN □	
	330pF		±10%	CL10B331KC8WPN □		
	470pF		±10%	CL10B471KC8WPN □		
	680pF		±10%	CL10B681KC8WPN □		
	1.0nF		±10%	CL10B102KC8WPN □		
	1.5nF		±10%	CL10B152KC8WPN □		

※ □ mark means packaging code. If you want to learn the code or quantity in detail, please see p.148
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Product Line Up (Automotive Capacitors – X7R)

■ Size : 1.60 X 0.80mm (inch : 0603)

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number
0.90mm	100Vdc	2.2nF	±10%	CL10B222KC8WPN □
		3.3nF	±10%	CL10B332KC8WPN □
		4.7nF	±10%	CL10B472KC8WPN □
		6.8nF	±10%	CL10B682KC8WPN □
		10nF	±10%	CL10B103KC8WPN □
		15nF	±10%	CL10B153KC8WPN □
		22nF	±10%	CL10B223KC8WPN □
		33nF	±10%	CL10B333KC8WPN □
		47nF	±10%	CL10B473KC8WPN □

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number		
0.90mm	50Vdc	100nF	±10%	CL21B104KBFVPN □		
		150nF	±10%	CL21B154KBFVPN □		
		220nF	±10%	CL21B224KBFVPN □		
		330nF	±10%	CL21B334KBFVPN □		
		470nF	±10%	CL21B474KBFVPN □		
		680nF	±10%	CL21B684KBFVPN □		
		1.0uF	±10%	CL21B105KBFVPN □		
		100Vdc	100nF	±10%	CL21B104KCFWPN □	
		1.40mm	10Vdc	4.7uF	±10%	CL21B475KQVQPN □
			16Vdc	4.7uF	±10%	CL21B475KQVQPN □

■ Size : 2.00 X 1.25mm (inch : 0805)

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number	
0.70mm	50Vdc	1.0nF	±10%	CL21B102KB6WPN □	
		2.2nF	±10%	CL21B222KB6WPN □	
		4.7nF	±10%	CL21B472KB6WPN □	
		10nF	±10%	CL21B103KB6WPN □	
		15nF	±10%	CL21B153KB6WPN □	
		22nF	±10%	CL21B223KB6WPN □	
		100Vdc	1.0nF	±10%	CL21B102KC6WPN □
			2.2nF	±10%	CL21B222KC6WPN □
			4.7nF	±10%	CL21B472KC6WPN □
			10nF	±10%	CL21B103KC6WPN □
15nF	±10%		CL21B153KC6WPN □		
22nF	±10%		CL21B223KC6WPN □		
0.95mm	16Vdc	100nF	±10%	CL21B104KOCWPN □	
		47nF	±10%	CL21B473KACWPN □	
		68nF	±10%	CL21B683KACWPN □	
		100nF	±10%	CL21B104KACWPN □	
	25Vdc	33nF	±10%	CL21B333KBCWPN □	
		47nF	±10%	CL21B473KBCWPN □	
		68nF	±10%	CL21B683KBCWPN □	
		100nF	±10%	CL21B104KBCWPN □	
	50Vdc	33nF	±10%	CL21B333KCCWPN □	
		47nF	±10%	CL21B473KCCWPN □	
		68nF	±10%	CL21B683KCCWPN □	
		100nF	±10%	CL21B104KCCWPN □	
1.35mm	10Vdc	1.0uF	±10%	CL21B105KPFVPN □	
		2.2uF	±10%	CL21B225KPFVPN □	
	16Vdc	150nF	±10%	CL21B154KOFVPN □	
		220nF	±10%	CL21B224KOFVPN □	
		330nF	±10%	CL21B334KOFVPN □	
		470nF	±10%	CL21B474KOFVPN □	
		680nF	±10%	CL21B684KOFVPN □	
		1.0uF	±10%	CL21B105KOFVPN □	
		2.2uF	±10%	CL21B225KOFVPN □	
		25Vdc	150nF	±10%	CL21B154KAFVPN □
	220nF		±10%	CL21B224KAFVPN □	
	330nF		±10%	CL21B334KAFVPN □	
	470nF		±10%	CL21B474KAFVPN □	
	680nF		±10%	CL21B684KAFVPN □	
1.0uF	±10%		CL21B105KAFVPN □		
		2.2uF	±10%	CL21B225KAFVPN □	

■ Size : 3.20 X 1.60mm (inch : 1206)

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number	
1.00mm	25Vdc	220nF	±10%	CL31B224KACWPN □	
		330nF	±10%	CL31B334KACWPN □	
		470nF	±10%	CL31B474KACWPN □	
	50Vdc	100nF	±10%	CL31B104KBCWPN □	
		100Vdc	100nF	±10%	CL31B104KCCWPN □
		1.25mm	16Vdc	1.0uF	±10%
25Vdc	680nF		±10%	CL31B684KAPWPN □	
	1.0uF		±10%	CL31B105KAPWPN □	
	50Vdc		100nF	±10%	CL31B104KBPWPN □
150nF			±10%	CL31B154KBPWPN □	
220nF			±10%	CL31B224KBPWPN □	
100Vdc	100nF	±10%	CL31B104KCPWPN □		
	150nF	±10%	CL31B154KCPWPN □		
	220nF	±10%	CL31B224KCPWPN □		
	1.80mm	10Vdc	4.7uF	±10%	CL31B475KPHVPN □
			10uF	±10%	CL31B106KPHVPN □
		16Vdc	2.2uF	±10%	CL31B225KOHVPN □
4.7uF			±10%	CL31B475KOHVPN □	
10uF			±10%	CL31B106KOHVPN □	
25Vdc		2.2uF	±10%	CL31B225KAHVPN □	
	4.7uF	±10%	CL31B475KAHVPN □		
	10uF	±10%	CL31B106KAHVPN □		
	50Vdc	330nF	±10%	CL31B334KBHWPVN □	
		470nF	±10%	CL31B474KBHWPVN □	
		680nF	±10%	CL31B684KBHWPVN □	
1.0uF		±10%	CL31B105KBHWPVN □		
2.2uF		±10%	CL31B225KBHWPVN □		
4.7uF		±10%	CL31B475KBHWPVN □		

■ Size : 3.20 X 2.50mm (inch : 1210)

Thickness Max.	Rated Voltage	Capacitance	Capacitance Tolerance	Part Number
2.70mm	10Vdc	22uF	±10%	CL32B226KJVPVN □
	16Vdc	22uF	±10%	CL32B226KJVPVN □
	25Vdc	4.7uF	±10%	CL32B475KAJVPVN □
	50Vdc	4.7uF	±10%	CL32B475KJVPVN □

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