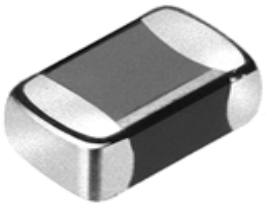
Chilisin Electronics Singapore Pte Ltd

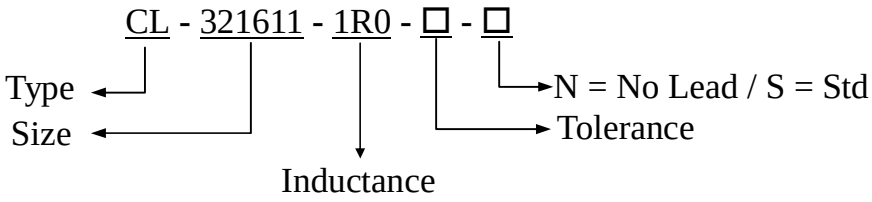
SMD Multi-Layers Chip Inductors, CL Series



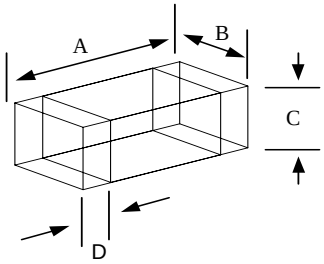
Feature:

Our range of Multilayer Chip Inductors offers magnetic shielding, and various sizes.
Which are specially designs for Electronics products, which are compact and highly dense with component.
Its offer minimum flux leakage thus eliminating cross talk.
Its has a full range for application in Computers, DVD, Hard Disk, CD ROM, wireless Telephone and related products.

Ordering Code:



Dimension in mm:



Part Number	A	B	C	D	Inductance
CL-160808 (0603)	1.6 ± 0.15 (0.063±0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.80 ± 0.15 (0.031 ± 0.006)	0.3 ± 0.2 (0.012±0.008)	0.47uH to 22uH
CL-201209 (0805)	2.00 ± 0.2 (0.079±0.0008)	1.25 ± 0.2 (0.049 ± 0.008)	0.90 ± 0.2 (0.035 ± 0.008)	0.5 ± 0.3 (0.020±0.012)	0.18uH to 0.39uH
CL-201212 (0805)	2.00 ± 0.2 (0.079±0.0008)	1.25 ± 0.2 (0.049 ± 0.008)	1.25 ± 0.2 (0.049 ± 0.008)	0.5 ± 0.3 (0.020±0.012)	0.47uH to 33uH
CL-321606 (1206)	3.20 ± 0.2 (0.126±0.008)	1.60 ± 0.2 (0.063 ± 0.008)	0.60 ± 0.2 (0.024 ± 0.008)	0.5 ± 0.3 (0.020±0.012)	0.22uH to 0.33uH
CL-321611 (1206)	3.20 ± 0.2 (0.126±0.008)	1.60 ± 0.2 (0.063 ± 0.008)	1.10 ± 0.2 (0.043 ± 0.008)	0.5 ± 0.3 (0.020±0.012)	0.39uH to 33.0uH

⇒ **General Component Specification**
⇒ **Tape and Reel**

19, Woodlands Industrial Park E1 #03-07 Singapore 757719
Tel : 65 - 68921191 Fax : 65 - 67606760

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Electrical Characteristics:

Part Number	Inductance µH	Q min	Test Freq. MHz	SRF MHz Min	DCR Ω Max	IDC mA Max
CL-160808-R47 M	0.47 ± 20%	15	25	105	1.35	35
CL-160808-R56 M	0.56 ± 20%	15	25	95	1.55	35
CL-160808-R68 M	0.68 ± 20%	15	25	90	1.70	35
CL-160808-R82 M	0.82 ± 20%	15	25	85	2.10	35
CL-160808-1R0 □	1.0 ± 20% ± 10%	35	10	75	0.60	25
CL-160808-1R2 □	1.2 ± 20% ± 10%	35	10	65	0.80	25
CL-160808-1R5 □	1.5 ± 20% ±10%	35	10	60	0.80	25
CL-160808-1R8 □	1.8 ± 20% ± 10%	35	10	55	0.95	25
CL-160808-2R2 □	2.2 ± 20% ±10%	35	10	50	1.15	15
CL-160808-2R7 □	2.7 ± 20% ±10%	35	10	45	1.35	15
CL-160808-3R3 □	3.3 ± 20% ± 10%	35	10	40	1.55	15
CL-160808-3R9 □	3.9 ± 20% ± 10%	35	10	35	1.70	15
CL-160808-4R7 □	4.7 ± 20% ±10%	35	10	33	2.10	15
CL-160808-5R6 □	5.6 ± 20% ± 10%	35	4	22	1.55	5
CL-160808-6R8 □	6.8 ± 20% ±10%	35	4	20	1.70	5
CL-160808-8R2 □	8.2 ± 20% ±10%	35	4	18	2.10	5
CL-160808-100 □	10.0 ± 20% ±10%	30	2	17	1.85	3
CL-160808-120 □	12.0 ± 20% ±10%	30	2	15	2.10	3
CL-160808-150 □	15.0 ± 20% ±10%	20	1	14	1.70	1
CL-160808-180 □	18.0 ± 20% ±10%	20	1	13	1.85	1
CL-160808-220 □	22.0 ± 20% ±10%	20	1	11	2.10	1

Tolerance: J = ± 5% , K = ± 10% , M = ±20%

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Part Number	Inductance µH	Q min	Test Freq. MHz	SRF MHz Min	DCR Ω Max	IDC mA Max
CL-201209-R18 M	0.18 ± 20%	20	25	185	0.4	250
CL-201209-R22 M	0.22 ± 20%	20	25	170	0.5	250
CL-201209-R27 M	0.27 ± 20%	20	25	150	0.5	250
CL-201209-R33 M	0.33 ± 20%	20	25	145	0.55	250
CL-201209-R39 M	0.39 ± 20%	25	25	135	0.65	200
CL-201209-1R0 ☐	1.0 ± 20% ±10%	45	10	75	0.4	50
CL-201209-1R2 ☐	1.2 ± 20% ±10%	45	10	65	0.5	50
CL-201209-1R5 ☐	1.5 ± 20% ±10%	45	10	60	0.5	50
CL-201209-1R8 ☐	1.8 ± 20% ±10%	45	10	55	0.6	50
CL-201209-2R2 ☐	2.2 ± 20% ±10%	45	10	50	0.65	30
CL-201212-R47 M	0.47 ± 20%	25	25	125	0.65	200
CL-201212-R56 M	0.56 ± 20%	25	25	115	0.75	150
CL-201212-R68 M	0.68 ± 20%	25	25	105	0.8	150
CL-201212-R82 M	0.82 ± 20%	25	25	100	1.0	150
CL-201212-3R3 ☐	3.3 ± 20% ± 10%	45	10	41	0.8	30
CL-201212-3R9 ☐	3.9 ± 20% ± 10%	45	10	38	0.9	30
CL-201212-4R7 ☐	4.7 ± 20% ±10%	45	10	35	1.0	30
CL-201212-5R6 ☐	5.6 ± 20% ± 10%	50	4	32	0.9	15
CL-201212-6R8 ☐	6.8 ± 20% ±10%	50	4	29	1.0	15
CL-201212-8R2 ☐	8.2 ± 20% ±10%	50	4	26	1.1	15
CL-201212-100 ☐	10.0 ± 20% ±10%	50	2	24	1.15	15
CL-201212-120 ☐	12.0 ± 20% ±10%	50	2	22	1.25	15
CL-201212-150 ☐	15.0 ± 20% ±10%	30	1	19	0.8	5
CL-201212-180 ☐	18.0 ± 20% ±10%	30	1	18	0.9	5
CL-201212-220 ☐	22.0 ± 20% ±10%	30	1	16	1.1	5
CL-201212-270 ☐	27.0 ± 20% ±10%	30	1	14	1.15	4
CL-201212-330 ☐	33.0 ± 20% ±10%	30	0.4	13	1.25	4

Tolerance: J = ± 5% , K = ± 10% , M = ±20%

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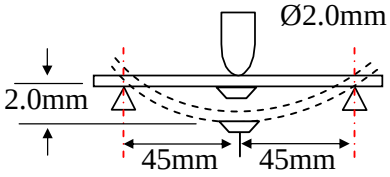
Part Number	Inductance μH	Q min	Test Freq. MHz	SRF MHz Min	DCR Ω Max	IDC mA Max
CL-321606-R22 ☐	0.22 ± 20%	20	25	170	0.5	250
CL-321606-R27 ☐	0.27 ± 20%	20	25	150	0.5	250
CL-321606-R33 ☐	0.33 ± 20%	20	25	145	0.55	250
CL-321611-R39 ☐	0.39 ± 20%	25	25	135	0.65	200
CL-321611-R47 ☐	0.47 ± 20%	10	45	75	0.4	50
CL-321611-R56 ☐	0.56 ± 20%	45	10	65	0.5	50
CL-321611-R68 ☐	0.68± 20%	45	10	60	0.5	50
CL-321611-R82 ☐	0.82 ± 20%	45	10	55	0.6	50
CL-321611-1R0 ☐	1.0 ± 20%±10%	45	10	55	0.6	50
CL-321611-1R2 ☐	1.2 ± 20% ±10%	25	10	60	0.75	100
CL-321611-1R5 ☐	1.5 ± 20% ±10%	30	10	55	0.65	50
CL-321611-1R8 ☐	1.8 ± 20% ±10%	30	10	50	0.75	50
CL-321611-2R2 ☐	2.2 ± 20% ±10%	30	10	45	0.85	50
CL-321611-2R7 ☐	2.7 ± 20% ±10%	30	10	40	0.95	50
CL-321611-3R3 ☐	3.3 ± 20% ±10%	30	10	38	1.05	50
CL-321611-3R9 ☐	3.9 ± 20% ±10%	30	10	36	1.15	50
CL-321611-4R7 ☐	4.7 ± 20% ±10%	30	10	33	1.35	50
CL-321611-5R6 ☐	5.6 ± 20% ±10%	30	4	22	0.95	25
CL-321611-6R8 ☐	6.8 ± 20% ±10%	30	4	20	1.05	25
CL-321611-8R2 ☐	8.2 ± 20% ±10%	30	4	18	1.15	25
CL-321611-100 ☐	10.0 ± 20% ±10%	30	2	17	1.35	25
CL-321611-120 ☐	12.0± 20% ±10%	30	2	15	1.85	15
CL-321611-150 ☐	15.0± 20% ±10%	30	1	14	0.85	5
CL-321611-180 ☐	18.0± 20% ±10%	30	1	13	1.05	5
CL-321611-220 ☐	22.0± 20% ±10%	30	1	11	1.15	5
CL-321611-270 ☐	27.0± 20% ±10%	30	1	10	1.25	5
CL-321611-330 ☐	33.0± 20% ±10%	30	0.4	9	1.65	5

Tolerance: J = ± 5% , K = ± 10% , M = ±20%

Reliability Test (Mechanical Performances):

No.	Item	Specification	Test Condition
1.	Solderability	More than 90% of the terminal Electrode shall be coved with fresh solder	Pre heat = 150°C Pre heat Time = 1 minute Solder = Sn/Ag3.0/Cu0.5 (Pb –Free) Solder Temperature = 245°C ± 5°C Immersion Time = 4 ± 1 Sec
2.	Resistance to Soldering Heat	The chips shall not crack. More than 75% of the terminal Electrode Shall be cover with solder	Pre Heat = 150°C Pre heat Time = 1 minute Solder = Sn/Ag3.0/Cu0.5 (Pb –Free) Solder Temperature = 260°C ± 5°C Immersion Time = 10 ± 1 Sec
3.	Bending Strength	The Ferrite and Terminal Electrode shall not be damage When force are applied per test Condition on the right	Test device shall be solder to substrate Substrate Dimension = 100mmx40mmx1.6mm Deflection = 2.0mm Duration = 30Sec.  For 1005 Substrate size 100mmx40mmx0.8mm
4.	Vibration		Test Device shall be soldered on the substrate Oscillation Freq.= 10 to 55 to 10Hz for 1 min Amplitude = 1.5mm Time = 2hrs for each axis (X,Y&Z) total 6 hrs

Reliability Test (Environmental Performances):

<table>
<tr><th>No.</th><th>Item</th><th>Specification</th><th>Test Condition</th></tr>
<tr><td>5.</td><td>Temperature Cycle</td><td rowspan="4">Appearance No damage
Impedance within ±20%
Of the initial value</td><td>One Cycle
<table>
<tr><th>Step</th><th>Temperate</th><th>Time (min)</th></tr>
<tr><td>1</td><td>-55℃</td><td>30</td></tr>
<tr><td>2</td><td>25℃</td><td>3</td></tr>
<tr><td>3</td><td>125℃</td><td>30</td></tr>
<tr><td>4</td><td>25℃</td><td>3</td></tr>
</table>
Total 100 Cycles
Measured after exposure in room condition = 24hrs</td></tr>
<tr><td>6</td><td>Humidity
Resistance</td><td>Temperature: +40℃ ± 2℃
Humidity: 90% to 95%
Time 1000 ± 12 Hours
Measured after exposure in room condition = 24hrs</td></tr>
<tr><td>7</td><td>High Temperature
Resistance</td><td>Temperature = 125℃ ± 3℃
Relative Humidity = 0%
Applied Current = Rated Current as state
Time = 1000 hrs ± 12 hrs
Measure after exposure in room Condition = 24hrs</td></tr>
<tr><td>8.</td><td>Low Temperature
Resistance</td><td>Temperature = -55℃ ± 3℃
Relative Humidity = 0%
Time = 1000 hrs ± 12 hrs
Measure after exposure in room Condition = 24hrs</td></tr>
</table>

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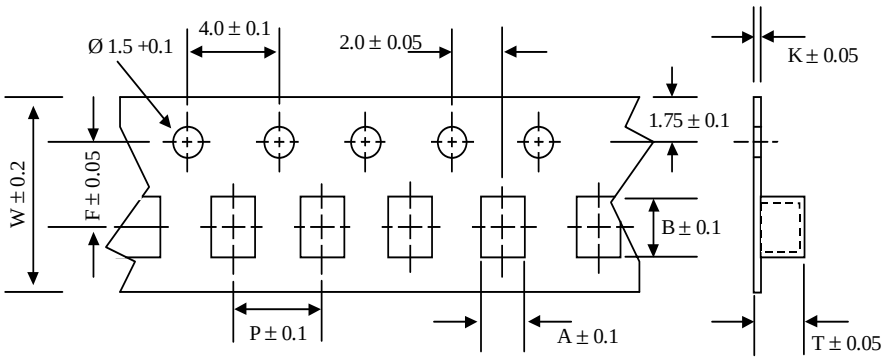
Packaging:

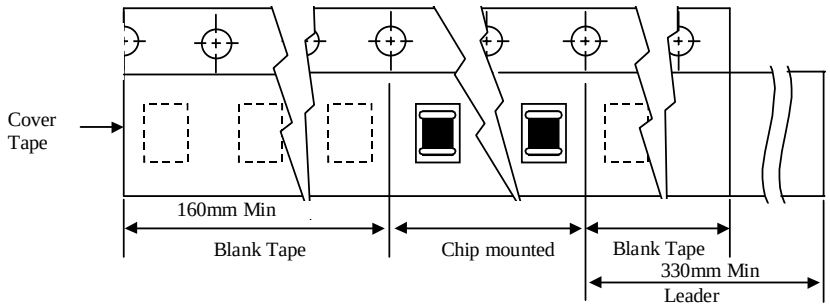
Tape Dimensions:



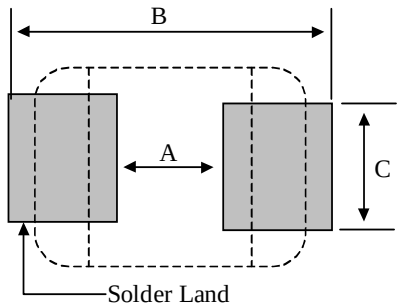
Type	A	B	T	W	P	F	K
CL-160808	1.14	1.75	1.15	8.0	4.0	3.5	0.2
CL-201209	1.54	2.32	1.15	8.0	4.0	3.5	0.2
CL-201212	1.54	2.32	1.35	8.0	4.0	3.5	0.2
CL-321611	1.94	3.54	1.29	8.0	4.0	3.5	0.2

Tape Material:

Carrier Tape: Polystyrene
Cover Type : Polyethylene

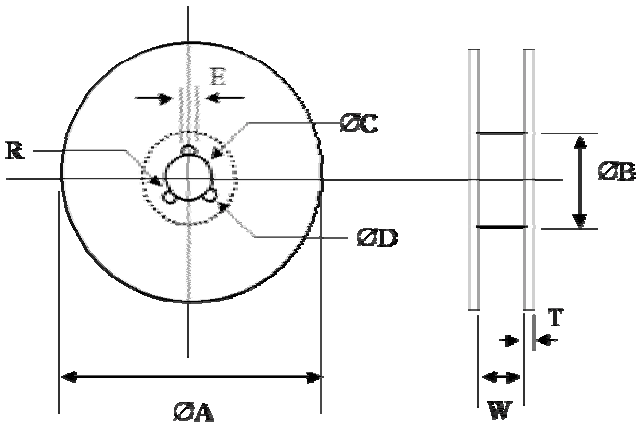


Recommended Pattern



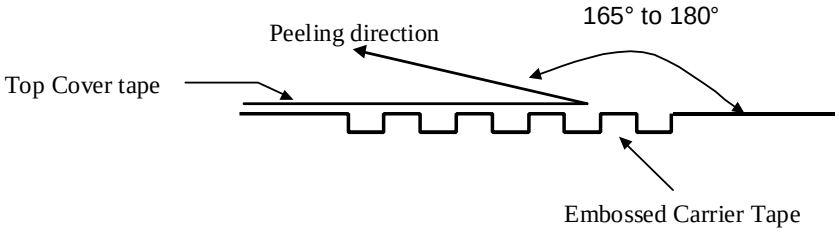
Type	A	B	C
CL-1608	0.8	2.4 ~ 3.4	0.6
CL-2012	1.2	3.0 ~ 4.0	1.0
CL-3216	2.0	4.2 ~ 5.2	1.2

Reel Dimensions:



ØA	ØB	ØC	ØD	E	W	T	R
178 ±2	60 ± 1	13.0 ± 0.5	21.0 ± 0.8	2.0 ± 0.5	10.0 ± 1.0	2.0 ± 0.5	1.0

Tape peeling:



Recommended Soldering profile: