FERRITE MULTILAYER CHIP INDUCTOR

FEATURES

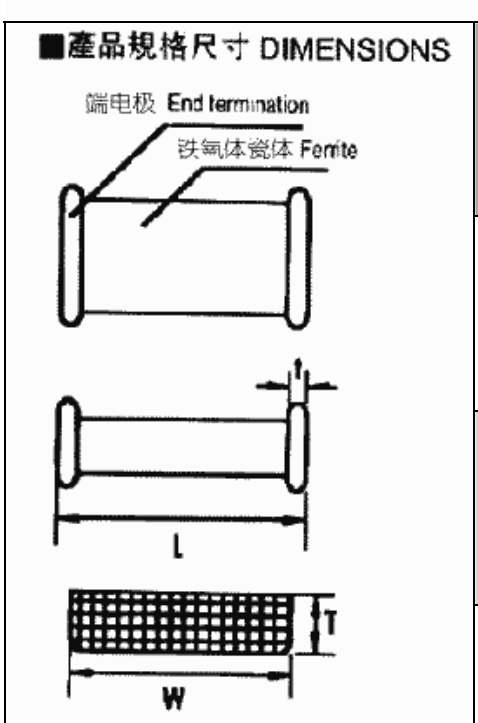
- Miniature
- No cross coupling between inductors due to low magnetic shield.
- No lead, ideal for high density SMT installation, with no directionality.
- Superior solder ability and resistance to soldering heat.
- Ideal for wave or reflow soldering.

HOW TO ORDER

CMI	160808	V	56N	M	T

Product Code	Dimension		Material Code	(μH) Nominal inductance	Tolerance		Packaging Style	
CMI	160808	1.6x0.8x0.8	V	56N=0.056	J	±5%	B	Bulk
	201209	2.0x1.2x0.9	U	2R2=2.2	K	±10%	T	Tape &Reel
	201212	2.0x1.2x1.2	J	270=27	M	±20%		

DIMENSIONS



SIZE	Length	Width	Thickness	Termination Width
160808	1.6±0.15 (0.063±0.06)	0.8±0.15 (0.31±0.06)	0.8±0.15 (0.31±0.06)	0.3±0.2 (0.0.12±0.008)
201209 201212	2.0+0.3/-0.1 (0.79±0.12/-0.1)	1.25±0.2 (0.049±0.008)	0.8±0.2 (0.33±0.008) 1.25±0.2 (0.049±0.008)	0.5±0.3 (0.020±0.012)
321611	3.2±0.2 (0.126±0.008)	1.6±0.2 (0.063±0.008)	1.1±0.3 (0.043±0.012)	0.5±0.3 (0.020±0.012)

FERRITE MULTILAYER CHIP INDUCTOR

PRODUCT SERIES

160808 SERIES

Part No.	Inductance (μH)	Q Min.	L,Q Test Frequency (MHz)	Self-Resonant Frequency Min. Nominal (MHz)	DC Resistance Max. Nominal (Ω)	Rated Current Max. (mA)
CMI160808V47N	0.047±20%	25	50	260	0.30	50
CMI160808V68N	0.068±20%	25	50	250	0.30	50
CMI160808V82N	0.082±20%	25	50	245	0.30	50
CMI160808VR10	0.10±20%or±10%	25	25	240	0.50	50
CMI160808VR12	0.12±20%or±10%	25	25	205	0.50	50
CMI160808VR15	0.15±20%or±10%	25	25	180	0.60	50
CMI160808VR18	0.18±20%or±10%	25	25	165	0.60	50
CMI160808VR22	0.22±20%or±10%	25	25	150	0.80	50
CMI160808VR27	0.27±20%or±10%	25	25	136	0.80	50
CMI160808VR33	0.33±20%or±10%	25	25	125	0.80	35
CMI160808VR39	0.39±20%or±10%	25	25	110	0.85	35
CMI160808VR47	0.47±20%or±10%	25	25	105	1.00	35
CMI160808VR56	0.56±20%or±10%	25	25	95	1.35	35
CMI160808VR68	0.68±20%or±10%	25	25	90	1.55	35
CMI160808VR82	0.82±20%or±10%	25	25	85	1.70	35
CMI160808U1R0	1.0±20%or±10%	15	10	75	2.10	25
CMI160808U1R2	1.2±20%or±10%	15	10	65	0.60	25
CMI160808U1R5	1.5±20%or±10%	15	10	60	0.80	25
CMI160808U1R8	1.8±20%or±10%	20	10	55	0.95	25
CMI160808U2R2	2.2±20%or±10%	20	10	50	1.15	15
CMI160808U2R7	2.7±20%or±10%	20	10	45	1.35	15
CMI160808U3R3	3.3±20%or±10%	20	10	40	1.55	15
CMI160808U3R9	3.9±20%or±10%	20	10	35	1.70	15
CMI160808U4R7	4.7±20%or±10%	20	10	33	2.10	15

201209、201212 SERIES

Part No.	Inductance (μH)	Q Min.	L,Q Test Frequency (MHz)	Self-Resonant Frequency Min. Nominal (MHz)		DC Resistance Max. Nominal (Ω)		Rated Current Max. (mA)
CMI201209V47N	0.047±20%	35	50	320	400	0.20	0.11	300
CMI201209V68N	0.068±20%	35	50	280	350	0.20	0.11	300
CMI201209V82N	0.082±20%	35	50	255	320	0.20	0.11	300
CMI201209VR10	0.10±20%or±10%	35	25	235	300	0.30	0.16	250
CMI201209VR12	0.12±20%or±10%	35	25	220	280	0.30	0.16	250
CMI201209VR15	0.15±20%or±10%	35	25	200	250	0.40	0.21	250
CMI201209VR18	0.18±20%or±10%	35	25	185	230	0.40	0.21	250
CMI201209VR22	0.22±20%or±10%	35	25	170	220	0.50	0.26	250
CMI201209VR27	0.27±20%or±10%	35	25	150	280	0.50	0.26	250
CMI201209VR33	0.33±20%or±10%	35	25	145	180	0.55	0.31	250
CMI201209VR39	0.39±20%or±10%	35	25	135	170	0.65	0.36	200
CMI201209VR47	0.47±20%or±10%	35	25	125	160	0.65	0.36	200
CMI201209VR56	0.56±20%or±10%	35	25	115	150	0.75	0.41	150
CMI201209VR68	0.68±20%or±10%	35	25	105	135	0.80	0.46	150
CMI201209VR82	0.82±20%or±10%	35	25	100	125	1.00	0.56	150
CMI201209U1R0	1.0±20%or±10%	25	10	75	105	0.40	0.21	50
CMI201209U1R2	1.2±20%or±10%	25	10	65	95	0.50	0.26	50
CMI201209U1R5	1.5±20%or±10%	30	10	60	85	0.50	0.26	50
CMI201212U1R8	1.8±20%or±10%	30	10	55	78	0.60	0.31	50
CMI201212U2R2	2.2±20%or±10%	30	10	50	70	0.65	0.36	30
CMI201212U2R7	2.7±20%or±10%	30	10	45	64	0.75	0.41	30
CMI201212U3R3	3.3±20%or±10%	40	10	41	58	0.80	0.46	30
CMI201212U3R9	3.9±20%or±10%	40	10	38	53	0.90	0.51	30
CMI201212U4R7	4.7±20%or±10%	40	10	35	58	1.00	0.56	30
CMI201212X5R6	5.6±20%or±10%	25	4	32	44	0.90	0.51	15
CMI201212X6R8	6.8±20%or±10%	25	4	29	40	1.00	0.356	15
CMI201212X8R2	8.2±20%or±10%	25	4	26	36	1.10	0.61	15
CMI201212X100	10.0±20%or±10%	20	2	24	33	1.15	0.66	15
CMI201212X120	12.0±20%or±10%	20	2	22	30	1.25	0.71	15
CMI201212J150	15.0±20%or±10%	20	1	19	27	0.80	0.46	5
CMI201212J180	18.0±20%or±10%	20	1	18	25	0.90	0.51	5
CMI201212J220	22.0±20%or±10%	20	1	16	22	1.10	0.61	5

FERRITE MULTILAYER CHIP INDUCTOR

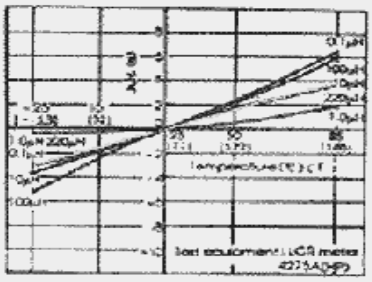
321611 SERIES

Part No.	Inductance (μH)	Q Min.	L,Q Test Frequency (MHz)	Self-Resonant Frequency Min. Nominal(MHz)		DC Resistance Max. Nominal(Ω)		Rated Current Max. (mA)
CMI321611V47N	0.047±20%	40	50	320	400	0.15	0.08	300
CMI321611V68N	0.068±20%	40	50	280	330	0.25	0.13	300
CMI321611VR10	0.10±20%or±10%	40	25	235	280	0.25	0.13	250
CMI321611VR12	0.12±20%or±10%	40	25	220	260	0.30	0.18	250
CMI321611VR15	0.15±20%or±10%	40	25	200	240	0.30	0.18	250
CMI321611VR18	0.18±20%or±10%	40	25	185	220	0.40	0.23	250
CMI321611VR22	0.22±20%or±10%	40	25	170	200	0.40	0.23	250
CMI321611VR27	0.27±20%or±10%	40	25	150	180	0.50	0.28	250
CMI321611VR33	0.33±20%or±10%	40	25	145	170	0.60	0.28	250
CMI321611VR39	0.39±20%or±10%	40	25	135	160	0.50	0.34	200
CMI321611VR47	0.47±20%or±10%	40	25	125	145	0.60	0.28	200
CMI321611VR56	0.56±20%or±10%	40	25	115	135	0.70	0.34	150
CMI321611VR68	0.68±20%or±10%	40	25	105	125	0.80	0.39	150
CMI321611VR82	0.82±20%or±10%	40	25	100	115	0.90	0.44	150
CMI321611U1R0	1.0±20%or±10%	40	10	75	90	0.40	0.39	100
CMI321611U1R2	1.2±20%or±10%	40	10	65	80	0.50	0.44	100
CMI321611U1R5	1.5±20%or±10%	40	10	60	70	0.50	0.50	50
CMI321611U1R8	1.8±20%or±10%	40	10	55	66	0.50	0.23	50
CMI321611U2R2	2.2±20%or±10%	40	10	50	58	0.60	0.28	50
CMI321611U2R7	2.7±20%or±10%	40	10	45	53	0.60	0.28	50
CMI321611U3R3	3.3±20%or±10%	40	10	41	49	0.70	0.28	50
CMI321611U3R9	3.9±20%or±10%	40	10	38	45	0.80	0.34	50
CMI321611U4R7	4.7±20%or±10%	40	10	35	41	0.90	0.34	50
CMI321611U5R6	5.6±20%or±10%	40	4	32	38	0.70	0.39	25
CMI321611U6R8	6.8±20%or±10%	40	4	29	34	0.80	0.44	25
CMI321611U8R2	8.2±20%or±10%	40	4	26	31	0.90	0.50	25
CMI321611X100	10.0±20%or±10%	25	2	24	28	1.00	0.55	25
CMI321611X120	12.0±20%or±10%	25	2	22	26	1.05	0.60	15
CMI321611X150	15.0±20%or±10%	25	1	19	23	0.70	0.39	5
CMI321611X180	18.0±20%or±10%	25	1	18	21	0.70	0.39	5
CMI321611X220	22.0±20%or±10%	25	1	16	19	0.90	0.50	5
CMI321611X270	27.0±20%or±10%	25	1	14	17	0.90	0.50	5
CMI321611X330	33.0±20%or±10%	25	0.4	13	16	1.05	0.60	5

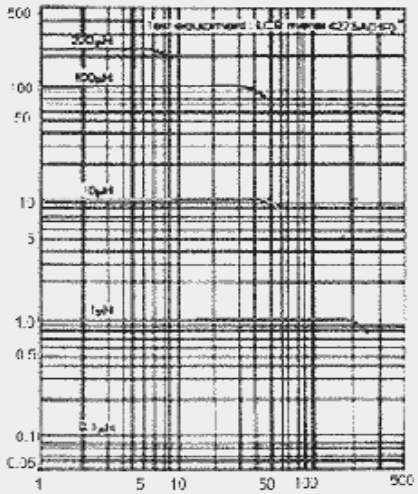
TYPICAL CHARACTERISTICS

CMI201209,CMI201212 SERIES

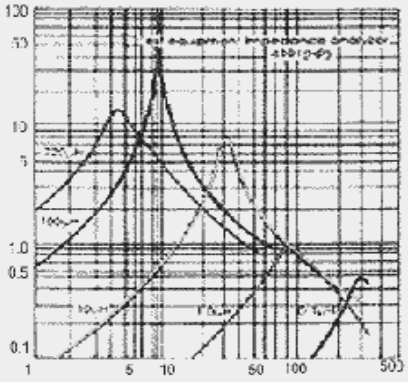
电感量温度特性 Inductance VS. Temperature



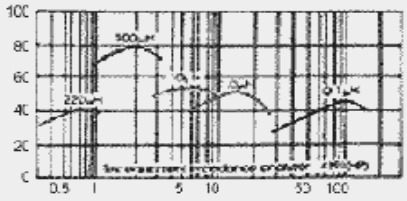
电感直流偏特性 Inductance VS. DC Bias



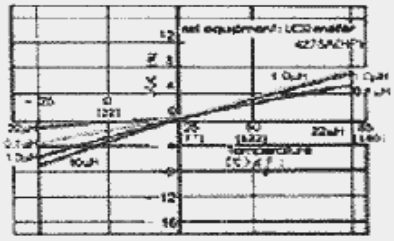
阻抗频率特性 Impedance VS Frequency



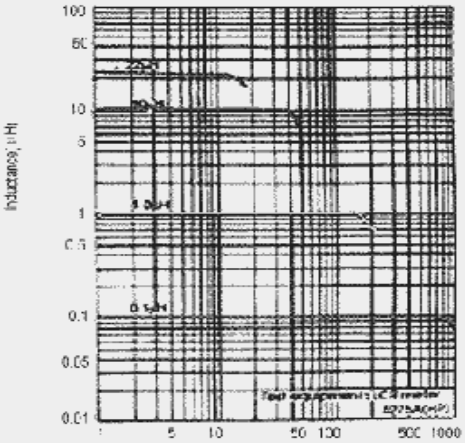
Q值频率特性 Q Value VS. Frequency



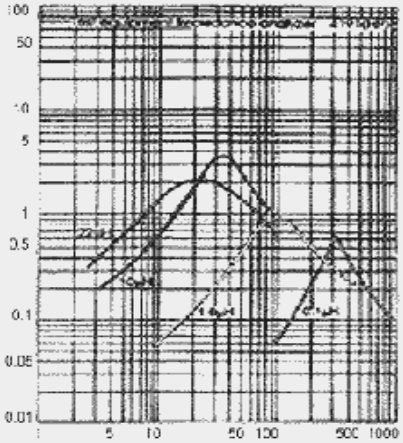
电感量温度特性 Inductance VS. Temperature



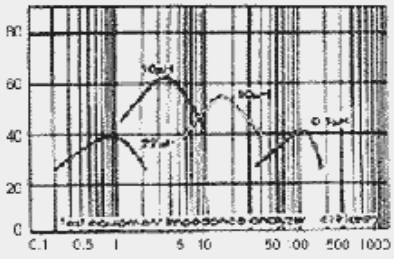
电感量直流偏特性能 Inductance VS. DC Bias



阻抗频率特性 Impedance VS Frequency

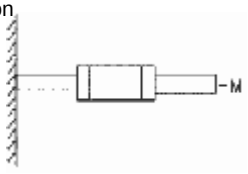


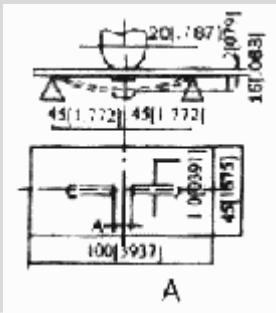
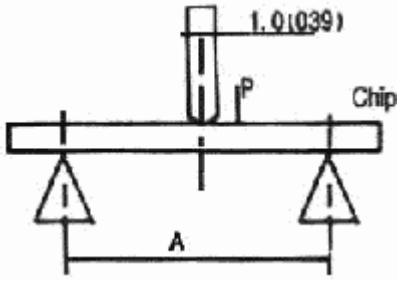
Q值频率特性 Q Value VS Frequency



FERRITE MULTILAYER CHIP INDUCTOR

RELIABILITY TEST CONDITIONS

<table>
<tr><th>Item</th><th>Specifications</th><th>Test Methods</th></tr>
<tr><td>Temperature
Operating Ranges</td><td>-25°C~+85°C</td><td></td></tr>
<tr><td>Storage
Temperature Range</td><td>-40°C+85°C
-0°C~+60°C (Tape & Reel)</td><td></td></tr>
<tr><td>Solder ability</td><td>More than 90% of termination Should be covered with new solder</td><td>Preheat: 120°C+150°C for 60s
Solder sn: pb=63:73
Temperature: 230°C±5°C
Flux: rosin
Duration: 3±1s</td></tr>
<tr><td>Resistance to Soldering heat</td><td>More than 75% of termination Should be covered with solder</td><td>Preheat: 120°C+150°C for 60s
Solder sn: pb=63:73
Temperature: 300°C±5°C
Flux: rosin
Duration: 10±0.5s</td></tr>
<tr><td>Terminal Strength</td><td>The terminal and body should be no damage</td><td>Applied specified pull strength
in axial direction
<table><tr><th>Size</th><th>Pull Strength (N)(kg)</th><th>Time</th></tr><tr><td>1608</td><td>5.9(0.6)</td><td>30±5</td></tr><tr><td>2012</td><td>9.8(1.0)</td><td>30±5</td></tr><tr><td>3216</td><td>9.8(1.0)</td><td>30±5</td></tr></table>  </td></tr>
<tr><td>Flexure Strength</td><td>No mechanical damage should be noticed</td><td>When the board curve to
2mm(0.079 inches)

0.7(0.028) (1608
1.0(0.039) (2012
2.0(0.039) (3216
Dimensions in mm (inches)
  </td></tr>
<tr><td>Bending Strength</td><td>The ferrite body should not be damaged</td><td>Applied specified pull strength in axial direction
<table><tr><th>Size</th><th>A(mm) (inches)</th><th>Pn (kg)</th></tr><tr><td>1608</td><td>100(.039)</td><td>4.9(0.5)</td></tr><tr><td>2012</td><td>1.40(.055)</td><td>9.8(1.0)</td></tr><tr><td>3216</td><td>2.0(0.079)</td><td>9.8(1.0)</td></tr></table>  </td></tr>
<tr><td>Thermal Shock
(Temperature Cycling)</td><td>No mechanical damage should be noticed inductance and Q value should be within ±10% and ±30% of the value respectively.</td><td>Temperature:-25°C~+85°C 5 cycles 30 min for each</td></tr>
<tr><td></td><td rowspan="5"></td><td></td></tr>
<tr><td>Humidity Resistance</td><td>Placed at 60°C 90%RH applied DC 200mA for 500hrs and measured at ambient temperature</td></tr>
<tr><td>Drop</td><td>Drop 10 times on a concrete floor from a height of 1m</td></tr>
<tr><td>Vibration</td><td>Frequency:10~50Hz
Amplitude modulation:1.55mm
Direction and time: X、Y and z direction for 2hrs each</td></tr>
<tr><td>Solubility
Resistance</td><td>Solvent: trichloroethylene
Cleaning: Ultrasonic washer
Duration:3min</td></tr>
</table>