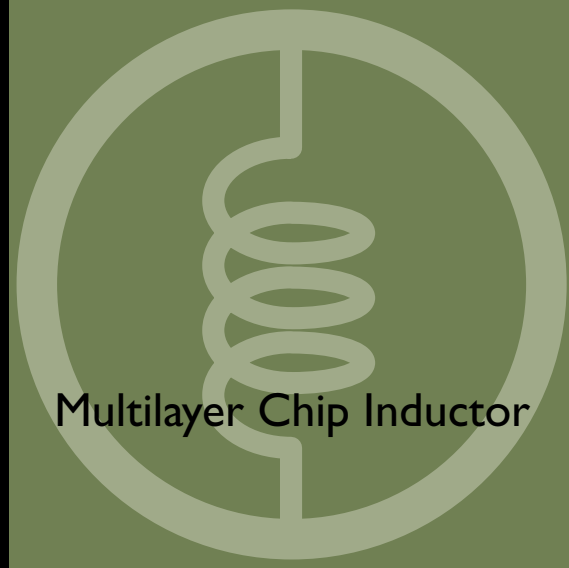


# CL Series

## Multilayer Chip Inductor



### APPLICATIONS

For Main Board, CD-ROM, Hard Disk Driver;

Wireless Phone, Pager and other related devices.

### OUTLINE

YAGEO multilayer chip inductor is formed without a wound wire and has a closed magnetic circuit formed by simultaneous forming of alternative layers of ferrite paste and conductor paste.

However this multilayer chip inductor results in magnetic shielding the absence of leakage flux makes it most suitable for high density mounting.

### FEATURES

These components are standard SMD parts and specially designed for flow and reflow soldering.

Specially designed for surface mounting equipment, available in various size which allows them to wide rang of application and usage.

### PACKAGING QUANTITY

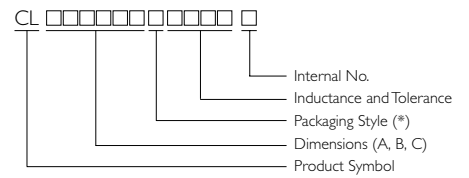
TYPE	BULK	CHIP/REEL
CL160808	√	4000
CL201209	√	4000
CL201212	√	3000
CL321611	√	3000

### SHAPES AND DIMENSIONS

TYPE	A	B	C	D
CL160808	1.6±0.15	0.80±0.15	0.8±0.15	0.3±0.2
CL201209	2.0±0.20	1.25±0.20	0.9±0.20	0.5±0.3
CL201212	2.0±0.20	1.25±0.20	1.25±0.20	0.5±0.3
CL321611	3.2±0.20	1.60±0.20	1.10±0.20	0.5±0.3

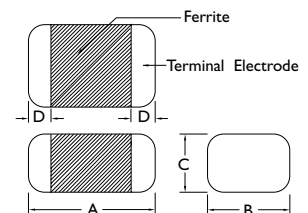


### PRODUCT IDENTIFICATION



\* B: Bulk; T: Tape and Reel

Dimensions : mm





## ELECTRICAL CHARACTERISTICS : CLI60808 (0603) SERIES

PART NO.	Inductance ( $\mu$ H)	Q Min.	LQ Test Frequency (MHz)	Self Resonant Frequency (MHz) Min.	DC Resistance RDC ( $\Omega$ ) Max.	Rate Current IDC (mA) Max.
CLI60808 □ 47NM	0.047 $\pm$ 20%	10	50	260	0.30	50
CLI60808 □ 68NM	0.068 $\pm$ 20%	10	50	250	0.30	50
CLI60808 □ 82NM	0.082 $\pm$ 20%	10	50	245	0.30	50
CLI60808 □ R10 □	0.10 $\pm$ 20 or 10%	15	25	240	0.50	50
CLI60808 □ R12 □	0.12 $\pm$ 20 or 10%	15	25	205	0.50	50
CLI60808 □ R15 □	0.15 $\pm$ 20 or 10%	15	25	180	0.60	50
CLI60808 □ R18 □	0.18 $\pm$ 20 or 10%	15	25	165	0.60	50
CLI60808 □ R22 □	0.22 $\pm$ 20 or 10%	15	25	150	0.80	50
CLI60808 □ R27 □	0.27 $\pm$ 20 or 10%	15	25	136	0.80	50
CLI60808 □ R33 □	0.33 $\pm$ 20 or 10%	15	25	125	0.85	35
CLI60808 □ R39 □	0.39 $\pm$ 20 or 10%	15	25	110	1.00	35
CLI60808 □ R47 □	0.47 $\pm$ 20 or 10%	15	25	105	1.35	35
CLI60808 □ R56 □	0.56 $\pm$ 20 or 10%	15	25	95	1.55	35
CLI60808 □ R68 □	0.68 $\pm$ 20 or 10%	15	25	90	1.70	35
CLI60808 □ R82 □	0.82 $\pm$ 20 or 10%	15	25	85	2.10	35
CLI60808 □ 1R0 □	1.0 $\pm$ 20 or 10%	35	10	75	0.60	25
CLI60808 □ 1R2 □	1.2 $\pm$ 20 or 10%	35	10	65	0.80	25
CLI60808 □ 1R5 □	1.5 $\pm$ 20 or 10%	35	10	60	0.80	25
CLI60808 □ 1R8 □	1.8 $\pm$ 20 or 10%	35	10	55	0.95	25
CLI60808 □ 2R2 □	2.2 $\pm$ 20 or 10%	35	10	50	1.15	15
CLI60808 □ 2R7 □	2.7 $\pm$ 20 or 10%	35	10	45	1.35	15
CLI60808 □ 3R3 □	3.3 $\pm$ 20 or 10%	35	10	40	1.55	15
CLI60808 □ 3R9 □	3.9 $\pm$ 20 or 10%	35	10	35	1.70	15
CLI60808 □ 4R7 □	4.7 $\pm$ 20 or 10%	35	10	33	2.10	15
CLI60808 □ 5R6 □	5.6 $\pm$ 20 or 10%	35	4	22	1.55	5
CLI60808 □ 6R8 □	6.8 $\pm$ 20 or 10%	35	4	20	1.70	5
CLI60808 □ 8R2 □	8.2 $\pm$ 20 or 10%	35	4	18	2.10	5
CLI60808 □ 100 □	10 $\pm$ 20 or 10%	30	2	17	1.85	3
CLI60808 □ 120 □	12 $\pm$ 20 or 10%	30	2	15	2.10	3
CLI60808 □ 150 □	15 $\pm$ 20 or 10%	20	1	14	1.70	1
CLI60808 □ 180 □	18 $\pm$ 20 or 10%	20	1	13	1.85	1
CLI60808 □ 220 □	22 $\pm$ 20 or 10%	20	1	11	2.10	1

**ELECTRICAL CHARACTERISTICS : CL201209, CL201212 (0805) SERIES**

<b>PART NO.</b>	<b>Inductance (μH)</b>	<b>Q Min.</b>	<b>LQ Test Frequency (MHz)</b>	<b>Self Resonant Frequency (MHz) Min.</b>	<b>DC Resistance RDC (Ω) Max.</b>	<b>Rate Current IDC (mA) Max.</b>
CL201209 □ 47NM	0.047±20%	15	50	320	0.20	300
CL201209 □ 68NM	0.068±20%	15	50	280	0.20	300
CL201209 □ 82NM	0.082±20%	15	50	255	0.20	300
CL201209 □ R10 □	0.10±20 or 10%	20	25	235	0.30	250
CL201209 □ R12 □	0.12±20 or 10%	20	25	220	0.30	250
CL201209 □ R15 □	0.15±20 or 10%	20	25	200	0.40	250
CL201209 □ R18 □	0.18±20 or 10%	20	25	185	0.40	250
CL201209 □ R22 □	0.22±20 or 10%	20	25	170	0.50	250
CL201209 □ R27 □	0.27±20 or 10%	20	25	150	0.50	250
CL201209 □ R33 □	0.33±20 or 10%	20	25	145	0.55	250
CL201209 □ R39 □	0.39±20 or 10%	25	25	135	0.65	200
CL201209 □ R47 □	0.47±20 or 10%	25	25	125	0.65	200
CL201209 □ R56 □	0.56±20 or 10%	25	25	115	0.75	150
CL201209 □ R68 □	0.68±20 or 10%	25	25	105	0.80	150
CL201209 □ R82 □	0.82±20 or 10%	25	25	100	1.00	150
CL201209 □ 1R0 □	1.0±20 or 10%	40	10	75	0.40	50
CL201209 □ 1R2 □	1.2±20 or 10%	40	10	65	0.50	50
CL201209 □ 1R5 □	1.5±20 or 10%	40	10	60	0.50	50
CL201209 □ 1R8 □	1.8±20 or 10%	40	10	55	0.60	50
CL201209 □ 2R2 □	2.2±20 or 10%	40	10	50	0.65	30
CL201212 □ 2R7 □	2.7±20 or 10%	40	10	45	0.75	30
CL201212 □ 3R3 □	3.3±20 or 10%	40	10	41	0.80	30
CL201212 □ 3R9 □	3.9±20 or 10%	40	10	38	0.90	30
CL201212 □ 4R7 □	4.7±20 or 10%	40	10	35	1.00	30
CL201212 □ 5R6 □	5.6±20 or 10%	45	4	32	0.90	15
CL201212 □ 6R8 □	6.8±20 or 10%	45	4	29	1.00	15
CL201212 □ 8R2 □	8.2±20 or 10%	45	4	26	1.10	15
CL201212 □ 100 □	10±20 or 10%	45	2	24	1.15	15
CL201212 □ 120 □	12±20 or 10%	45	2	22	1.25	15
CL201212 □ 150 □	15±20 or 10%	30	1	19	0.80	5
CL201212 □ 180 □	18±20 or 10%	30	1	18	0.90	5
CL201212 □ 220 □	22±20 or 10%	30	1	16	1.10	5
CL201212 □ 270 □	27±20 or 10%	30	1	14	1.15	5
CL201212 □ 330 □	33±20 or 10%	30	0.4	13	1.25	5
CL201212 □ 390 □	39±20 or 10%	35	2	8.0	2.90	4
CL201212 □ 470 □	47±20 or 10%	35	2	7.5	3.00	4
CL201212 □ 560 □	56±20 or 10%	35	2	7.0	3.10	4
CL201212 □ 680 □	68±20 or 10%	25	1	6.5	2.90	2
CL201212 □ 820 □	82±20 or 10%	25	1	6.0	3.00	2
CL201212 □ 101 □	100±20 or 10%	25	1	5.5	3.10	2



Note :

**ELECTRICAL CHARACTERISTICS : CL321611, CL322513 (1206) SERIES**

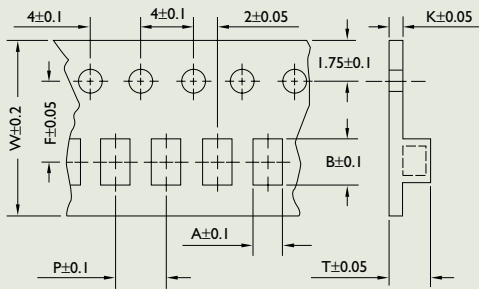
PART NO.	Inductance ( $\mu$ H)	Q Min.	LQ Test Frequency (MHz)	Self Resonant Frequency (MHz) Min.	DC Resistance RDC ( $\Omega$ ) Max.	Rate Current IDC (mA) Max.
CL321611 □ 47NM	0.047 $\pm$ 20%	20	50	320	0.15	300
CL321611 □ 68NM	0.068 $\pm$ 20%	20	50	280	0.25	300
CL321611 □ R10 □	0.10 $\pm$ 20 or 10%	20	25	235	0.25	250
CL321611 □ R12 □	0.12 $\pm$ 20 or 10%	20	25	220	0.30	250
CL321611 □ R15 □	0.15 $\pm$ 20 or 10%	20	25	200	0.30	250
CL321611 □ R18 □	0.18 $\pm$ 20 or 10%	20	25	185	0.40	250
CL321611 □ R22 □	0.22 $\pm$ 20 or 10%	20	25	170	0.40	250
CL321611 □ R27 □	0.27 $\pm$ 20 or 10%	20	25	150	0.50	250
CL321611 □ R33 □	0.33 $\pm$ 20 or 10%	20	25	145	0.60	250
CL321611 □ R39 □	0.39 $\pm$ 20 or 10%	25	25	135	0.50	200
CL321611 □ R47 □	0.47 $\pm$ 20 or 10%	25	25	125	0.60	200
CL321611 □ R56 □	0.56 $\pm$ 20 or 10%	25	25	115	0.70	150
CL321611 □ R68 □	0.68 $\pm$ 20 or 10%	25	25	105	0.80	150
CL321611 □ R82 □	0.82 $\pm$ 20 or 10%	25	25	100	0.90	150
CL321611 □ 1R0 □	1.0 $\pm$ 20 or 10%	40	10	110	0.40	100
CL321611 □ 1R2 □	1.2 $\pm$ 20 or 10%	40	10	100	0.50	100
CL321611 □ 1R5 □	1.5 $\pm$ 20 or 10%	40	10	90	0.50	80
CL321611 □ 1R8 □	1.8 $\pm$ 20 or 10%	40	10	80	0.50	70
CL321611 □ 2R2 □	2.2 $\pm$ 20 or 10%	40	10	70	0.60	60
CL321611 □ 2R7 □	2.7 $\pm$ 20 or 10%	40	10	70	0.60	60
CL321611 □ 3R3 □	3.3 $\pm$ 20 or 10%	40	10	60	0.70	60
CL321611 □ 3R9 □	3.9 $\pm$ 20 or 10%	40	10	55	0.80	50
CL321611 □ 4R7 □	4.7 $\pm$ 20 or 10%	40	10	50	0.90	50
CL321611 □ 5R6 □	5.6 $\pm$ 20 or 10%	45	4	32	0.70	25
CL321611 □ 6R8 □	6.8 $\pm$ 20 or 10%	45	4	29	0.80	25
CL321611 □ 8R2 □	8.2 $\pm$ 20 or 10%	45	4	26	0.90	25
CL321611 □ 100 □	10 $\pm$ 20 or 10%	45	2	24	1.00	25
CL321611 □ 120 □	12 $\pm$ 20 or 10%	45	2	22	1.05	15
CL321611 □ 150 □	15 $\pm$ 20 or 10%	35	1	19	0.70	5
CL321611 □ 180 □	18 $\pm$ 20 or 10%	35	1	18	0.70	5
CL321611 □ 220 □	22 $\pm$ 20 or 10%	35	1	16	0.90	5
CL321611 □ 270 □	27 $\pm$ 20 or 10%	35	1	14	0.90	5
CL321611 □ 330 □	33 $\pm$ 20 or 10%	35	0.4	13	1.05	5



Note :

### TAPE DIMENSIONS

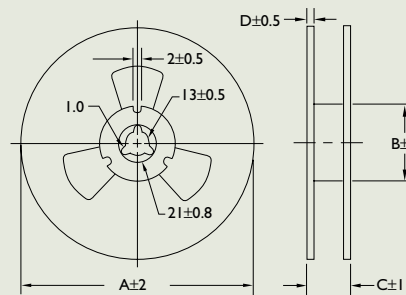
Dimensions : mm



TYPE	A	B	T	W	P	F	K
CL160808	1.14	1.75	1.15	8	4	3.5	0.2
CL201209	1.54	2.32	1.15	8	4	3.5	0.2
CL201212	1.54	2.32	1.35	8	4	3.5	0.2
CL321611	1.94	3.54	1.29	8	4	3.5	0.2

### REEL DIMENSIONS

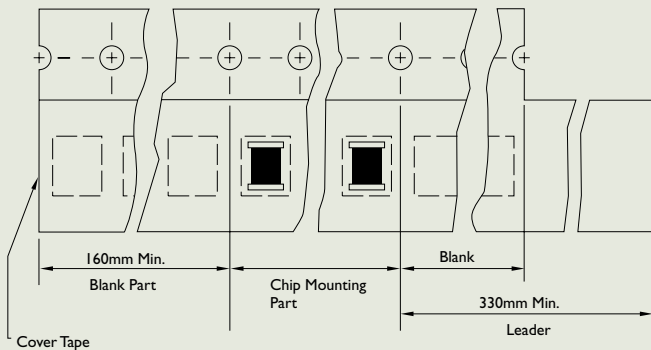
Dimensions : mm



TYPE	A	B	C	D
CL160808	178	60	10	2
CL201209	178	60	10	2
CL201212	178	60	10	2
CL321611	178	60	10	2

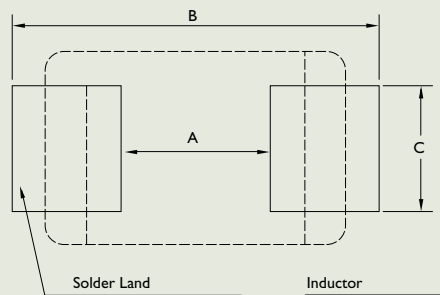
### TAPE MATERIAL

Carrier Tape : Polystyrene    Cover-Type : Polyethyiene



### RECOMMENDED PATTERN

Dimensions : mm



TYPE	A	B	C
CL160808	0.8	2.4~3.4	0.6
CL201209	1.2	3.0~4.0	1.0
CL201212	1.2	3.0~4.0	1.0
CL321611	2.0	4.2~5.2	1.2



