

**Type 3613C Series**

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Specially developed for automatic mounting applications, this exciting range of chip inductors are ferrite based and sealed in a thermoset plastic body. They employ solder coated copper terminations with barrier layer. Customers can therefore expect consistent quality, performance and reliability. Its smooth top surface makes it particularly well suited to pick and place equipments.

Truly the last word in 1812 chip inductors.

**Key Features**

- **High Reliability**
- **Small Versatile Size - 3.2 x 4.5 mm**
- **Temperature Range -25°C to +100°C**
- **Supplied in Standard Carrier Tape**
- **Suitable for Dip and Wave Solder**
- **Insulation 1000M R min**
- **Available from Stock**

**Characteristics - Style Opening**

Nominal Inductance (µH)	Value Coding Marking	Inductance Tolerance (±%)	Q (min)	Self Resonant Frequency (MHz) (min)	DC Resistance (ohms max)	Allowance DC (mA)	Measuring Frequency (MHz)
0.10	R10M	±20%	35	300	0.18	800	25.2
0.12	R12M	±20%	35	280	0.20	770	25.2
0.15	R15M	±20%	35	250	0.22	730	25.2
0.18	R18M	±20%	35	220	0.24	700	25.2
0.22	R22M	±20%	40	200	0.25	665	25.2
0.27	R27M	±20%	40	180	0.26	635	25.2
0.33	R33M	±20%	40	165	0.28	605	25.2
0.39	R39M	±20%	40	150	0.30	575	25.2
0.47	R47M	±20%	40	145	0.32	545	25.2
0.56	R56M	±20%	40	140	0.36	520	25.2
0.68	R68M	±20%	40	135	0.40	500	25.2
0.82	R82M	±20%	40	130	0.45	475	25.2
1.0	1R0K	±10%	50	100	0.50	450	7.96
1.2	1R2K	±10%	50	80	0.55	430	7.96
1.5	1R5K	±10%	50	70	0.60	410	7.96
1.8	1R8K	±10%	50	60	0.65	390	7.96
2.2	2R2K	±10%	50	55	0.70	380	7.96
2.7	2R7K	±10%	50	50	0.75	370	7.96
3.3	3R3K	±10%	50	45	0.80	355	7.96
3.9	3R9K	±10%	50	40	0.90	330	7.96
4.7	4R7K	±10%	50	35	1.00	315	7.96
5.6	5R6K	±10%	50	33	1.10	300	7.96
6.8	6R8K	±10%	50	27	1.20	285	7.96
8.2	8R2K	±10%	50	25	1.40	270	7.96
10.0	100K	±10%	50	20	1.60	250	2.52
12.0	120K	±10%	50	18	2.00	225	2.52
15.0	150K	±10%	50	17	2.50	200	2.52
18.0	180K	±10%	50	15	2.80	190	2.52
22.0	220K	±10%	50	13	3.20	180	2.52
27.0	270K	±10%	50	12	3.60	170	2.52
33.0	330K	±10%	50	11	4.00	160	2.52
39.0	390K	±10%	50	10	4.50	150	2.52
47.0	470K	±10%	50	10	5.00	140	2.52
56.0	560K	±10%	50	9.0	5.50	135	2.52
68.0	680K	±10%	50	9.0	6.00	130	2.52
82.0	820K	±10%	50	8.0	7.00	120	2.52
100	101K	±10%	40	8.0	8.00	110	0.796
120	121K	±10%	40	6.0	8.00	110	0.796
150	151K	±10%	40	5.0	9.00	105	0.796
180	181K	±10%	40	5.0	9.50	102	0.796
220	221K	±10%	40	4.0	10.0	100	0.796
270	271K	±10%	40	4.0	12.0	92	0.796
330	331K	±10%	40	3.5	14.0	85	0.796
390	391K	±10%	40	3.0	18.0	80	0.796
470	471K	±10%	40	3.0	26.0	62	0.796
560	561K	±10%	30	3.0	30.0	50	0.796
680	681K	±10%	30	3.0	30.0	50	0.796
820	821K	±10%	30	2.5	35.0	30	0.796
1000	102K	±10%	20	2.5	40.0	30	0.252

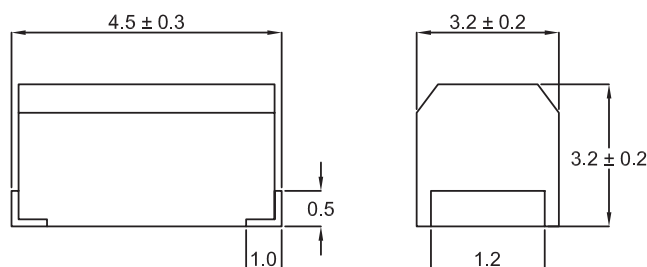
5% Tolerance available on selected value ranges. Please enquire

**Characteristics - Environmental**

<b>Insulation:</b>	1000 M ohms
<b>Temperature Range:</b>	-25°C to +85°C
<b>Humidity Load life:</b>	ΔL/L within ±10%
<b>Vibration (see test method):</b>	ΔL/L within ±5%

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**Dimensions**



**Test Methods**

Item	Standard	Test Method
<b>DC Superposition Characteristics</b>	$\Delta L/L$ Within $\pm 10\%$	When the allowable current was applied, the inductance was measured with a YHP 4262A and compared with the initial value.
<b>Temperature Rise</b>	Within $20^{\circ}\text{C}$	When the allowable current was applied, the amount of temperature rise was measured by the change in resistance.
<b>Temperature Rise</b>	$\Delta L/L$ Within $\pm 5\%$	Measurements were taken in a temperature range of $-25^{\circ}\text{C}$ to $85^{\circ}\text{C}$ and the value at $+20^{\circ}\text{C}$ was used as the standard value.
<b>Overcurrent Test</b>	No smoke and no fire	Twice the allowable current was applied for a period of five minutes.
<b>Insulation Resistance</b>	Not less than 1000 M	0.3mm diameter copper wires were wound around the coils three times and measurements were taken after 250VDC was applied between the wire and the terminals for a period of 1 minute.
<b>Tensile Strength Test</b>	No separation from substrate	After the inductors were soldered to substrates, a force of 1.0kg was applied in both the x and y directions for a period of 5 seconds.
<b>Stress Test</b>	No breakage	After the inductors were mounted on substrates, 1-mins. 10-55-10 cycle per seconds sweeps 1.5mm stroke vibrations were applied for 2 hrs. each in the X, Y and Z directions.
<b>Drop Test</b>	No pronounced abnormality in appearance	The inductors were dropped 10 times from a height of 1.0 metre onto a concrete floor.
<b>Vibration Test</b>	$\Delta L/L$ Within $\pm 10\%$ Q Not less than 30	After the inductors were mounted on substrates, 1-mins. 10-55-10 cycle per seconds sweeps 1.5mm stroke vibrations were applied for 2 hours each in the X, Y and Z directions
<b>Humidity Resistance Load Test</b>	$\Delta L/L$ Within $\pm 10\%$ Q Not less than 30	Measurements were taken after the allowable current was applied while the inductors were stored at $60^{\circ}\text{C} \pm 2^{\circ}\text{C}$ in 90 to 95% RH for a period of 500 hours.
<b>Low Temperature Resistance Test</b>	$\Delta L/L$ Within $\pm 10\%$ Q Not less than 30	Measurements were taken after the inductors were stored at $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for period 1000 hours
<b>Temperature Cycle Test</b>	$\Delta L/L$ Within $\pm 10\%$ Q Not less than 30	Measurements were taken after the inductors were stored for 30 minutes, during which they were subjected to 20 temperature cycles of between $-25^{\circ}\text{C}$ and $+85^{\circ}\text{C}$ .
<b>High Temperature Resistance Load Test</b>	$\Delta L/L$ Within $\pm 10\%$ Q Not less than 30	Measurements were taken after the allowable was applied while the inductors were stored at $85^{\circ}\text{C}$ for a period of 1000 hours.

**Test Notes**

The measuring method for the test data given overpage are as follows:

**Inductance:** Direct reading from Q-meter (equivalent to YHP 4342A, jig used)

**Q:** Direct reading from Q-meter (equivalent to YHP 4342A, jig used)

**Self resonant frequency:** Grid Dipo Meter (equivalent to Measurement M159)

**DC resistance:** Wheatstone bridge (equivalent to YEW 2755)

Unless otherwise specified, the temperature is  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$  and the humidity is  $65\% \pm 20\%$

**How to Order**

3613C	1R5	K
Common Part	Inductance	Tolerance
3613C - 18:12 Inductor	Value Code (see table)	J - $\pm 5\%$ K - $\pm 10\%$ M - $20\%$