

The background features a vertical stack of horizontal bands in varying shades of light gray. On the left side, there are several overlapping geometric shapes, some filled with a diagonal hatching pattern and others with a solid light gray color. The text is centered over the middle of these shapes.

# Multilayer Ceramic Chip Inductor for High Frequency Catalog

**DARFON**  
Darfon Electronics Corp.

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## Multi-Layer High Frequency Ceramic Chip Inductors (HI Series)



### FEATURES

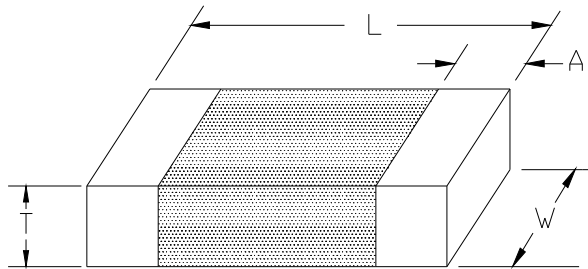
- For high frequency application
- Standard EIA size –0603(0201), 1005 (0402), 1608 (0603)
- Lead-free specifications (Pass Green Policy)
- Tight tolerance physical dimensions
- Surface mounting applicability (Supports reflow soldering condition)
- Tight Inductance Tolerance, Excellent Q and Guaranteed SRF range
- High product quality and outstanding reliability. (Ceramic integrated structure)

### APPLICATION

- For high frequency application: cellular phone, WLAN, PHS, EMI countermeasure in high frequency circuits and computer communication etc.

### ORDERING CODE

		<u>HI</u>	<u>1005</u>	<u>1N5</u>	<u>S</u>	<u>T</u>
<b>PRODUCT CODE</b>	HI : High Frequency Inductor (Lead Free)					
<b>DIMENSION CODE (EIA CODE)</b>	0603 (0201) 1005 (0402) 1608 (0603)					
<b>INDUCTANCE CODE</b>	1N5 = 1.5 nH 15N = 15 nH R15 = 150 nH					
<b>INDUCTANCE TOLERANCE CODE</b>	D= +/- 0.1 nH      G = +/- 2%      K = +/- 10% C = +/- 0.2 nH      H= +/- 3% S = +/- 0.3 nH      J= +/- 5%					
<b>PACKAGING CODE</b>	B = Bulk T = Tape					



DIMENSION CODE (EIA CODE)	L	W	T	A (Min/Max)	Unit
0603 (0201)	0.60 +/- 0.03 (0.024 +/- 0.001)	0.3 +/- 0.03 (0.012 +/- 0.001)	0.3 +/- 0.03 (0.012 +/- 0.001)	0.10/0.20 (0.004/0.008)	mm (inch)
1005 (0402)	1.00 +/- 0.10 (0.040 +/- 0.004)	0.50 +/- 0.10 (0.020 +/- 0.004)	0.50 +/- 0.10 (0.020 +/- 0.004)	0.10 / 0.30 (0.004 / 0.012)	mm (inch)
1608 (0603)	1.60 +/- 0.15 (0.063 +/- 0.006)	0.80 +/- 0.15 (0.031 +/- 0.006)	0.80 +/- 0.15 (0.031 +/- 0.006)	0.20 / 0.60 (0.008 / 0.024)	mm (inch)

### AVAILABLE INDUCTANCE VALUE AND TOLERANCE

DIMENSION CODE (EIA CODE)	AVAILABLE INDUCTANCE	RATINGS	NORMAL TOLERANCE	Available Tolerance on Request
0603 (0201)	0.3 nH ~ 100nH	0.3 nH ~ 6.2 nH	S: ±0.3 nH	D: ±0.1 nH C: ±0.2 nH
		6.8 nH ~ 27 nH	J: ±5%	H: ±3%
		33 nH ~ 100 nH	J: ±5%	
1005 (0402)	0.6 nH ~ 270 nH	0.6 nH ~ 6.2 nH	S: ±0.3 nH	C: ±0.2 nH D: ±0.1 nH
		6.8 nH ~ 270 nH	J: ±5%	G: ±2%
1608 (0603)	1.0 nH ~ 470 nH	1.0 nH ~ 5.6 nH	S: ±0.3 nH	C: ±0.2 nH
		6.8 nH ~ 470 nH	J: ±5%	G: ±2%

## Multilayer High Frequency Inductor: HI0603 series (EIA 0201 Size)

### Electric Characteristic

Ordering Code	Inductance (nH)	Available Tolerance	Q	L, Q Measuring Frequency (MHz)	Self-Resonance Frequency (MHz)		DC Resistance ( $\Omega$ )		Rated Current (mA)	Packing Amount of 7" reel
					Min.	typ.	Max.	typ.		
HI06030N3	0.3	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.07	0.03	250	15,000
HI06030N4	0.4	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.07	0.04	250	
HI06030N5	0.5	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.08	0.05	250	
HI06030N6	0.6	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.08	0.05	250	
HI06030N7	0.7	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.09	0.06	250	
HI06030N8	0.8	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.10	0.07	250	
HI06030N9	0.9	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.10	0.07	250	
HI06031N0	1.0	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.14	0.09	250	
HI06031N1	1.1	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.14	0.09	250	
HI06031N2	1.2	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.14	0.09	250	
HI06031N3	1.3	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.14	0.10	250	
HI06031N5	1.5	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.18	0.10	230	
HI06031N6	1.6	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.18	0.12	230	
HI06031N8	1.8	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	10,000	>13000	0.19	0.13	200	
HI06032N0	2.0	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	8,800	>13000	0.20	0.14	200	
HI06032N1	2.1	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	8,800	>13000	0.20	0.15	200	
HI06032N2	2.2	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	8,800	>13000	0.22	0.15	200	
HI06032N4	2.4	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	4	100	8,300	11,700	0.24	0.15	200	
HI06032N7	2.7	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	7,700	11,340	0.25	0.17	200	
HI06033N0	3.0	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	7,200	11,000	0.28	0.20	180	
HI06033N2	3.2	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	6,700	10,800	0.30	0.20	180	
HI06033N3	3.3	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	6,700	10,400	0.30	0.20	180	
HI06033N6	3.6	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	6,400	9,000	0.30	0.23	170	
HI06033N9	3.9	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	6,000	8,790	0.30	0.23	170	
HI06034N3	4.3	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	5,700	8,000	0.40	0.24	150	
HI06034N7	4.7	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	5,300	7,750	0.40	0.26	150	
HI06035N1	5.1	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	5,000	7,210	0.40	0.26	150	
HI06035N6	5.6	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	4,200	6,680	0.40	0.32	150	
HI06036N2	6.2	$\pm 0.3\text{nH}, \pm 0.2\text{nH}, \pm 0.1\text{nH}$	5	100	3,800	6,800	0.44	0.32	150	
HI06036N8	6.8	$\pm 5\%, \pm 3\%$	5	100	3,500	6,800	0.50	0.34	150	
HI06037N5	7.5	$\pm 5\%, \pm 3\%$	5	100	3,300	6,000	0.53	0.36	150	
HI06038N2	8.2	$\pm 5\%, \pm 3\%$	5	100	3,200	5,800	0.55	0.38	150	
HI06039N1	9.1	$\pm 5\%, \pm 3\%$	5	100	3,000	5,000	0.62	0.38	150	
HI060310N	10	$\pm 5\%, \pm 3\%$	5	100	2,800	4,860	0.65	0.40	150	
HI060312N	12	$\pm 5\%, \pm 3\%$	5	100	2,400	4,520	0.70	0.50	100	
HI060315N	15	$\pm 5\%, \pm 3\%$	5	100	2,200	4,820	0.80	0.60	100	
HI060318N	18	$\pm 5\%, \pm 3\%$	5	100	2,200	3,000	0.90	0.85	100	
HI060322N	22	$\pm 5\%, \pm 3\%$	5	100	1,800	2,950	1.20	0.86	100	
HI060327N	27	$\pm 5\%, \pm 3\%$	4	100	1,800	2,610	1.80	0.88	50	
HI060333N	33	$\pm 5\%$	4	100	1,700	2,210	2.10	1.05	50	
HI060339N	39	$\pm 5\%$	4	100	1,500	1,860	2.40	1.18	50	
HI060347N	47	$\pm 5\%$	4	100	1,300	1,800	2.80	1.74	100	
HI060356N	56	$\pm 5\%$	4	100	1,100	1,600	3.00	1.85	80	
HI060368N	68	$\pm 5\%$	4	100	1,100	1,500	2.66	2.30	80	
HI060382N	82	$\pm 5\%$	4	100	1,000	1,400	3.37	2.60	70	
HI0603R10	100	$\pm 5\%$	4	100	900	1,200	3.74	3.00	60	

\*\*  Tolerance: D= $\pm 0.1\text{nH}$ , C= $\pm 0.2\text{nH}$ , S= $\pm 0.3\text{nH}$ , G= $\pm 2\%$ , H= $\pm 3\%$ , J= $\pm 5\%$ , K= $\pm 10\%$

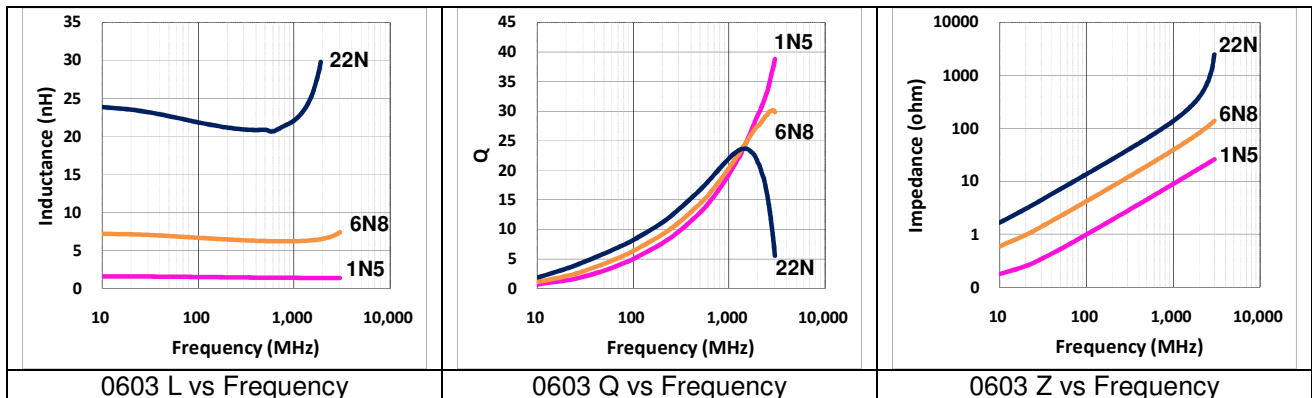
● MEASURING EQUIPMENT: HP4287+16196C ● MEASURING TEMPERATURE: 25 +/- 3 °C

● OPERATING TEMPERATURE RANGE: -55 °C TO +125 °C

## ■ L, Q vs. FREQUENCY CHARACTERISTICS

Ordering Code	Typical Inductance(nH)							Typical Q						
	100 MHz	500 MHz	800 MHz	900 MHz	1.8 GHz	2.0 GHz	2.4 GHz	100 MHz	500 MHz	800 MHz	900 MHz	1.8 GHz	2.0 GHz	2.4 GHz
HI06030N3□T	0.3	0.3	0.3	0.3	0.3	0.3	0.3	6	14	19	20	32	35	39
HI06030N4□T	0.4	0.4	0.4	0.4	0.4	0.4	0.4	6	14	19	20	32	35	39
HI06030N5□T	0.5	0.5	0.5	0.5	0.5	0.5	0.5	6	14	19	20	33	36	40
HI06030N6□T	0.6	0.6	0.5	0.5	0.5	0.5	0.5	6	15	19	20	33	36	40
HI06030N7□T	0.7	0.7	0.6	0.6	0.6	0.6	0.6	6	15	20	21	34	37	41
HI06030N8□T	0.8	0.8	0.7	0.7	0.7	0.7	0.7	6	14	19	20	32	35	39
HI06030N9□T	0.9	0.8	0.8	0.8	0.8	0.8	0.8	6	15	20	21	35	37	42
HI06031N0□T	1.0	0.9	0.9	0.9	0.9	0.9	0.9	5	13	17	18	28	30	33
HI06031N1□T	1.1	1.0	1.0	1.0	0.9	0.9	0.9	6	14	18	20	30	32	34
HI06031N2□T	1.2	1.2	1.2	1.2	1.2	1.2	1.2	6	14	18	19	28	30	32
HI06031N3□T	1.3	1.2	1.2	1.2	1.2	1.2	1.2	6	13	17	18	27	28	31
HI06031N5□T	1.5	1.4	1.3	1.3	1.4	1.4	1.4	6	14	18	20	30	32	34
HI06031N6□T	1.6	1.6	1.6	1.6	1.6	1.6	1.6	6	14	18	20	28	30	31
HI06031N8□T	1.8	1.7	1.7	1.7	1.7	1.7	1.7	6	14	18	20	28	30	31
HI06032N0□T	2.0	1.9	1.9	1.9	2.0	1.9	2.0	6	14	18	19	28	29	31
HI06032N1□T	2.1	2.0	1.9	1.9	2.0	2.0	2.1	6	13	17	18	26	28	30
HI06032N2□T	2.2	2.1	2.0	2.0	2.1	2.1	2.2	6	13	17	18	26	28	30
HI06032N4□T	2.4	2.3	2.2	2.2	2.3	2.4	2.5	6	14	18	20	28	29	31
HI06032N7□T	2.7	2.5	2.5	2.5	2.6	2.7	2.8	6	14	18	19	28	29	31
HI06033N0□T	3.0	2.8	2.8	2.8	2.9	2.9	3.0	7	15	19	21	30	31	33
HI06033N2□T	3.2	3.0	3.0	3.0	3.1	3.1	3.2	6	14	19	20	29	30	32
HI06033N3□T	3.3	3.2	3.1	3.2	3.0	3.4	3.5	6	14	19	20	29	30	32
HI06033N6□T	3.6	3.4	3.4	3.4	3.7	3.7	3.9	6	14	18	20	28	29	31
HI06033N9□T	3.9	3.7	3.7	3.7	3.9	4.0	4.2	6	15	19	20	28	29	31
HI06034N3□T	4.3	4.1	4.1	4.1	4.4	4.9	4.8	6	14	18	19	27	28	29
HI06034N7□T	4.7	4.4	4.4	4.4	4.8	4.9	5.2	6	14	19	19	26	27	29
HI06035N1□T	5.1	4.9	4.9	4.9	5.4	5.6	6.0	6	13	17	18	25	25	26
HI06035N6□T	5.6	5.3	5.3	5.3	5.8	6.0	6.6	7	14	18	19	26	27	27
HI06036N2□T	6.2	6.0	6.0	6.1	6.9	7.2	8.1	6	14	18	19	26	26	30
HI06036N8□T	6.8	6.3	6.4	6.4	7.2	7.4	8.2	7	14	18	19	26	26	26
HI06037N5□T	7.5	7.1	7.2	7.2	8.3	8.7	9.8	6	15	18	20	25	25	25
HI06038N2□T	8.2	7.8	7.9	8.0	9.2	9.7	11.0	7	15	18	19	19	24	24
HI06039N1□T	9.1	8.7	8.8	8.9	10.8	11.6	13.9	6	13	16	17	21	20	18
HI060310N□T	10.0	9.3	9.5	9.6	12.0	13.0	16.1	6	13	16	17	20	20	18
HI060312N□T	12.0	11.3	11.5	11.7	15.4	17.2	23.2	7	13	16	17	18	17	14
HI060315N□T	15.0	14.5	15.1	15.4	22.4	26.2	42.3	7	15	18	19	19	17	11
HI060318N□T	18.0	17.2	18.1	18.6	31.1	39.5	99.3	7	13	16	16	14	11	5
HI060322N□T	22.0	21.4	22.8	23.5	45.5	64.1	-	7	13	16	16	12	8	-
HI060327N□T	27.0	26.6	29.2	30.6	108.5	-	-	6	13	15	15	6	-	-
HI060333N□T	33.0	31.9	34.8	36.0	119.0	-	-	7	14	16	17	6	-	-
HI060339N□T	39.0	38.2	42.3	45.6	-	-	-	6	12	13	13	-	-	-
HI060347N□T	47.0	44.0	47.0	49.0	-	-	-	6	11	12	11	-	-	-
HI060356N□T	56.0	54.0	61.0	66.0	-	-	-	6	11	11	10	-	-	-
HI060368N□T	68.0	66.0	76.0	82.0	-	-	-	6	11	11	10	-	-	-
HI060382N□T	82.0	80.0	97.0	108.0	-	-	-	6	11	10	8	-	-	-
HI0603R10□T	100.0	103.0	138.0	164.0	-	-	-	6	10	9	6	-	-	-

## ■ TYPICAL ELECTRICAL CHARACTERISTICS



## Multilayer High Frequency Inductor: HI1005 series (EIA 0402 Size)

### Electric Characteristic

Ordering Code	Inductance (nH)	Available Tolerance	Q	L, Q Measuring Frequency (MHz)	Self-Resonance Frequency (MHz)		DC Resistance (Ω)		Rated Current (mA)	Packing Amount of 7" reel
					Min.	typ.	Max.	typ.		
HI10050N6□ T	0.6	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.08	0.02	300	10,000
HI10051N0□ T	1.0	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.08	0.02	300	
HI10051N1□ T	1.1	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.08	0.03	300	
HI10051N2□ T	1.2	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.09	0.03	300	
HI10051N3□ T	1.3	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.09	0.04	300	
HI10051N5□ T	1.5	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.10	0.05	300	
HI10051N6□ T	1.6	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.10	0.05	300	
HI10051N8□ T	1.8	±0.3nH, ±0.2nH, ±0.1nH	8	100	6000	12220	0.12	0.05	300	
HI10052N0□ T	2.0	±0.3nH, ±0.2nH, ±0.1nH	8	100	6000	12890	0.12	0.06	300	
HI10052N2□ T	2.2	±0.3nH, ±0.2nH, ±0.1nH	8	100	6000	12430	0.13	0.06	300	
HI10052N4□ T	2.4	±0.3nH, ±0.2nH, ±0.1nH	8	100	6000	12320	0.13	0.07	300	
HI10052N7□ T	2.7	±0.3nH, ±0.2nH, ±0.1nH	8	100	6000	10070	0.16	0.09	300	
HI10053N0□ T	3.0	±0.3nH, ±0.2nH, ±0.1nH	8	100	6000	8760	0.16	0.09	300	
HI10053N3□ T	3.3	±0.3nH, ±0.2nH, ±0.1nH	8	100	6000	8120	0.16	0.09	300	
HI10053N6□ T	3.6	±0.3nH, ±0.2nH, ±0.1nH	8	100	5000	8200	0.20	0.10	300	
HI10053N9□ T	3.9	±0.3nH, ±0.2nH, ±0.1nH	8	100	4000	8390	0.20	0.10	300	
HI10054N3□ T	4.3	±0.3nH, ±0.2nH, ±0.1nH	8	100	4000	7500	0.20	0.11	300	
HI10054N7□ T	4.7	±0.3nH, ±0.2nH, ±0.1nH	8	100	4000	7010	0.20	0.11	300	
HI10055N1□ T	5.1	±0.3nH, ±0.2nH, ±0.1nH	8	100	4000	6340	0.23	0.13	300	
HI10055N6□ T	5.6	±0.3nH, ±0.2nH, ±0.1nH	8	100	4000	5760	0.23	0.13	300	
HI10056N2□ T	6.2	±0.3nH, ±0.2nH, ±0.1nH	8	100	3900	5490	0.25	0.15	300	
HI10056N8□ T	6.8	±5%, ±2%	8	100	3900	5430	0.25	0.14	300	
HI10057N5□ T	7.5	±5%, ±2%	8	100	3700	5000	0.28	0.16	300	
HI10058N2□ T	8.2	±5%, ±2%	8	100	3500	4660	0.28	0.17	300	
HI10059N1□ T	9.1	±5%, ±2%	8	100	3400	4400	0.30	0.22	300	
HI100510N□ T	10	±5%, ±2%	8	100	3200	4120	0.31	0.24	300	
HI100512N□ T	12	±5%, ±2%	8	100	2600	3820	0.45	0.30	300	
HI100515N□ T	15	±5%, ±2%	8	100	2300	3350	0.55	0.38	300	
HI100518N□ T	18	±5%, ±2%	8	100	2000	2970	0.65	0.37	300	
HI100522N□ T	22	±5%, ±2%	8	100	1600	2640	0.70	0.45	300	
HI100527N□ T	27	±5%, ±2%	8	100	1400	2370	0.80	0.49	300	
HI100533N□ T	33	±5%, ±2%	8	100	1200	2040	0.90	0.63	200	
HI100539N□ T	39	±5%, ±2%	8	100	1100	1800	1.00	0.70	200	
HI100547N□ T	47	±5%, ±2%	8	100	900	1660	1.10	0.82	200	
HI100556N□ T	56	±5%, ±2%	8	100	750	1560	1.10	0.84	200	
HI100568N□ T	68	±5%, ±2%	8	100	750	1330	1.20	0.99	180	
HI100582N□ T	82	±5%, ±2%	8	100	600	1160	1.30	1.09	150	
HI1005R10□ T	100	±5%, ±2%	8	100	600	1020	1.60	1.19	150	
HI1005R12□ T	120	±5%, ±2%	8	100	600	860	1.60	1.31	150	
HI1005R15□ T	150	±5%, ±2%	8	100	550	800	2.40	1.58	140	
HI1005R18□ T	180	±5%, ±2%	8	100	500	810	3.70	2.97	130	
HI1005R22□ T	220	±5%, ±2%	8	100	450	700	4.20	3.29	120	
HI1005R27□ T	270	±5%, ±2%	8	100	400	600	4.80	3.92	110	

\*\* □ Tolerance: D=±0.1nH, C=±0.2nH, S=±0.3nH, G=±2%, J=±5%, K=±10%

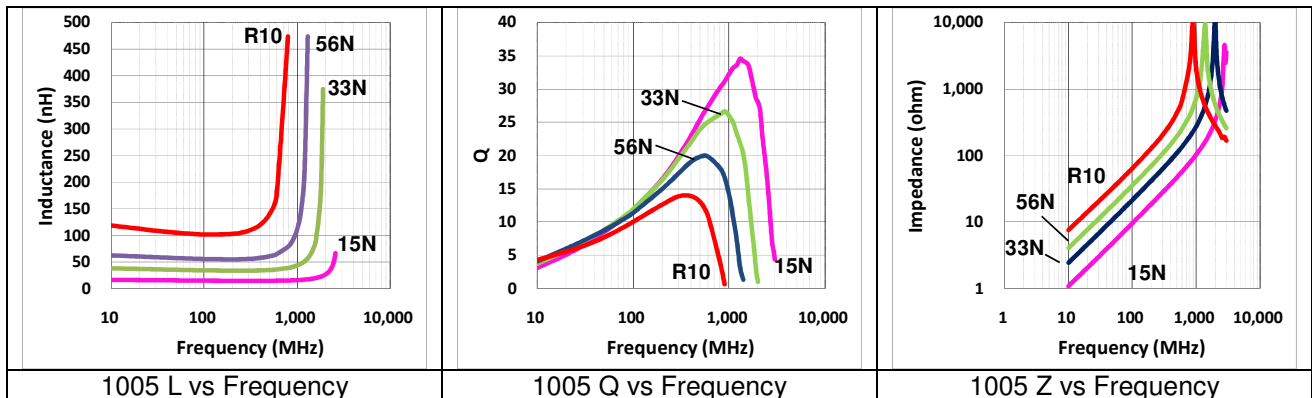
● MEASURING EQUIPMENT: HP4287+16193A ● MEASURING TEMPERATURE: 25 +/- 3 °C

● OPERATING TEMPERATURE RANGE: -55 °C TO +125 °C

## ■ L, Q vs. FREQUENCY CHARACTERISTICS

Ordering Code	Typical Inductance(nH)							Typical Q						
	100 MHz	500 MHz	800 MHz	900 MHz	1.8 GHz	2.0 GHz	2.4 GHz	100 MHz	500 MHz	800 MHz	900 MHz	1.8 GHz	2.0 GHz	2.4 GHz
HI10050N6□T	0.6	0.6	0.6	0.6	0.6	0.6	0.6	12	40	60	65	100	120	140
HI10051N0□T	1.0	1.0	1.0	1.0	1.0	1.0	1.0	12	29	38	41	63	71	75
HI10051N1□T	1.1	1.1	1.1	1.1	1.1	1.1	1.1	11	29	37	40	60	67	72
HI10051N2□T	1.2	1.2	1.2	1.2	1.2	1.2	1.2	11	29	38	41	61	68	73
HI10051N3□T	1.3	1.3	1.3	1.3	1.3	1.3	1.3	11	30	38	41	61	67	72
HI10051N5□T	1.5	1.5	1.5	1.5	1.5	1.5	1.5	11	27	35	38	57	63	68
HI10051N6□T	1.6	1.5	1.5	1.5	1.5	1.5	1.5	11	28	35	38	57	64	68
HI10051N8□T	1.8	1.7	1.7	1.7	1.7	1.7	1.7	11	26	33	36	53	58	61
HI10052N0□T	2.0	2.0	2.0	2.0	2.0	2.1	2.1	10	23	29	31	45	49	52
HI10052N2□T	2.2	2.1	2.1	2.1	2.2	2.2	2.2	10	24	31	33	48	52	55
HI10052N4□T	2.4	2.3	2.3	2.3	2.4	2.4	2.4	10	25	31	34	49	53	57
HI10052N7□T	2.7	2.7	2.7	2.7	2.8	2.8	2.9	11	27	35	37	54	58	60
HI10053N0□T	3.0	2.9	2.9	3.0	3.1	3.1	3.2	10	25	32	34	49	53	55
HI10053N3□T	3.3	3.2	3.2	3.2	3.4	3.4	3.5	11	25	32	35	50	54	56
HI10053N6□T	3.6	3.5	3.5	3.5	3.7	3.8	3.9	10	24	31	33	46	49	49
HI10053N9□T	3.9	3.7	3.7	3.8	3.9	4.0	4.1	11	24	30	33	46	49	51
HI10054N3□T	4.3	4.1	4.2	4.2	4.4	4.4	4.6	11	26	33	35	50	53	54
HI10054N7□T	4.7	4.5	4.5	4.5	4.8	4.9	5.1	11	25	32	35	49	51	53
HI10055N1□T	5.1	4.9	4.9	4.9	5.2	5.3	5.6	11	25	32	35	46	48	49
HI10055N6□T	5.6	5.5	5.5	5.5	6.0	6.2	6.7	11	25	32	35	46	48	49
HI10056N2□T	6.2	6.1	6.1	6.1	6.7	6.8	7.3	11	26	32	34	46	48	49
HI10056N8□T	6.8	6.6	6.7	6.7	7.4	7.6	8.2	11	26	32	35	46	48	48
HI10057N5□T	7.5	7.1	7.2	7.3	7.8	8.1	8.8	11	26	32	35	46	48	48
HI10058N2□T	8.2	8.0	8.1	8.2	9.4	9.9	11.1	11	26	32	34	42	42	40
HI10059N1□T	9.1	8.7	8.8	8.8	9.9	10.2	11.1	11	25	31	34	42	42	40
HI100510N□T	10.0	10.0	9.8	9.9	11.7	12.4	14.4	11	23	29	31	37	37	34
HI100512N□T	12.0	11.7	12.0	12.2	15.1	16.3	20.1	11	24	31	33	37	36	30
HI100515N□T	15.0	14.9	15.5	15.8	22.8	26.4	41.8	11	23	30	32	35	33	28
HI100518N□T	18.0	17.8	18.4	18.7	24.9	27.7	37.7	11	23	28	29	30	28	22
HI100522N□T	22.0	21.8	23.1	23.8	40.9	52.7	156.0	11	22	27	28	22	18	6
HI100527N□T	27.0	27.1	29.2	30.3	66.8	106.9	-	11	22	26	27	16	11	4
HI100533N□T	33.0	33.2	36.3	37.9	109.0	259.0	-	11	22	25	26	12	5	-
HI100539N□T	39.0	40.2	45.9	49.1	-	-	-	11	20	22	22	-	-	-
HI100547N□T	47.0	49.1	57.2	61.7	-	-	-	11	20	21	21	-	-	-
HI100556N□T	56.0	59.2	71.8	79.3	-	-	-	11	19	19	18	-	-	-
HI100568N□T	68.0	74.7	99.4	116.3	-	-	-	11	18	17	15	-	-	-
HI100582N□T	82.0	94.7	140.8	179.5	-	-	-	11	18	15	12	-	-	-
HI1005R10□T	100.0	117.6	193.7	269.9	-	-	-	11	17	12	9	-	-	-
HI1005R12□T	120.0	159.8	450.4	-	-	-	-	11	16	7	-	-	-	-
HI1005R15□T	150.0	207.2	-	-	-	-	-	11	14	-	-	-	-	-
HI1005R18□T	180.0	-	-	-	-	-	-	12	-	-	-	-	-	-
HI1005R22□T	220.0	-	-	-	-	-	-	12	-	-	-	-	-	-
HI1005R27□T	270.0	-	-	-	-	-	-	12	-	-	-	-	-	-

## ■ TYPICAL ELECTRICAL CHARACTERISTICS



## Multilayer High Frequency Inductor: HI1608 series (EIA 0603 Size)

### Electric Characteristic

Ordering Code	Inductance (nH)	Available Tolerance	Q	L, Q Measuring Frequency (MHz)	Self-Resonance Frequency (MHz)		DC Resistance (Ω)		Rated Current (mA)	Packing Amount of 7" reel
					Min.	typ.	Max.	typ.		
HI16081N0□T	1.0	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.05	0.01	1000	4,000
HI16081N2□T	1.2	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.05	0.02	1000	
HI16081N5□T	1.5	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.10	0.03	1000	
HI16081N8□T	1.8	±0.3nH, ±0.2nH, ±0.1nH	8	100	10000	>13000	0.10	0.04	1000	
HI16082N2□T	2.2	±0.3nH, ±0.2nH, ±0.1nH	8	100	6000	11690	0.10	0.05	1000	
HI16082N7□T	2.7	±0.3nH, ±0.2nH, ±0.1nH	10	100	6000	8930	0.13	0.06	1000	
HI16083N3□T	3.3	±0.3nH, ±0.2nH, ±0.1nH	10	100	6000	6440	0.13	0.07	1000	
HI16083N9□T	3.9	±0.3nH, ±0.2nH, ±0.1nH	10	100	6000	7280	0.15	0.08	1000	
HI16084N7□T	4.7	±0.3nH, ±0.2nH, ±0.1nH	10	100	4000	6470	0.20	0.09	1000	
HI16085N6□T	5.6	±0.3nH, ±0.2nH, ±0.1nH	10	100	4000	5230	0.23	0.10	600	
HI16086N8□T	6.8	±5%, ±2%	10	100	4000	5470	0.25	0.11	600	
HI16088N2□T	8.2	±5%, ±2%	10	100	3500	4460	0.28	0.14	600	
HI160810N□T	10	±5%, ±2%	12	100	3200	4360	0.30	0.15	600	
HI160812N□T	12	±5%, ±2%	12	100	2600	3480	0.35	0.17	600	
HI160815N□T	15	±5%, ±2%	12	100	2300	3310	0.40	0.19	600	
HI160818N□T	18	±5%, ±2%	12	100	2000	3080	0.45	0.21	600	
HI160822N□T	22	±5%, ±2%	12	100	1600	2670	0.50	0.29	600	
HI160827N□T	27	±5%, ±2%	12	100	1400	2270	0.55	0.27	600	
HI160833N□T	33	±5%, ±2%	12	100	1200	1970	0.60	0.36	600	
HI160839N□T	39	±5%, ±2%	12	100	1100	1830	0.65	0.37	500	
HI160847N□T	47	±5%, ±2%	12	100	900	1670	0.70	0.47	500	
HI160856N□T	56	±5%, ±2%	12	100	900	1530	0.75	0.46	500	
HI160868N□T	68	±5%, ±2%	12	100	700	1360	0.85	0.51	400	
HI160882N□T	82	±5%, ±2%	12	100	600	1290	0.95	0.57	300	
HI1608R10□T	100	±5%, ±2%	12	100	600	1090	1.00	0.69	300	
HI1608R12□T	120	±5%, ±2%	8	50	500	1030	1.20	0.74	300	
HI1608R15□T	150	±5%, ±2%	8	50	500	820	1.20	0.78	300	
HI1608R18□T	180	±5%, ±2%	8	50	400	690	1.30	0.92	300	
HI1608R22□T	220	±5%, ±2%	8	50	400	630	1.50	1.19	300	
HI1608R24□T	240	±5%, ±2%	8	50	400	600	1.70	1.20	200	
HI1608R27□T	270	±5%, ±2%	8	50	400	520	1.90	1.30	150	
HI1608R33□T	330	±5%, ±2%	8	50	350	450	2.10	1.50	150	
HI1608R39□T	390	±5%, ±2%	8	50	350	400	2.30	1.80	150	
HI1608R47□T	470	±5%, ±2%	8	50	300	360	2.60	2.04	150	

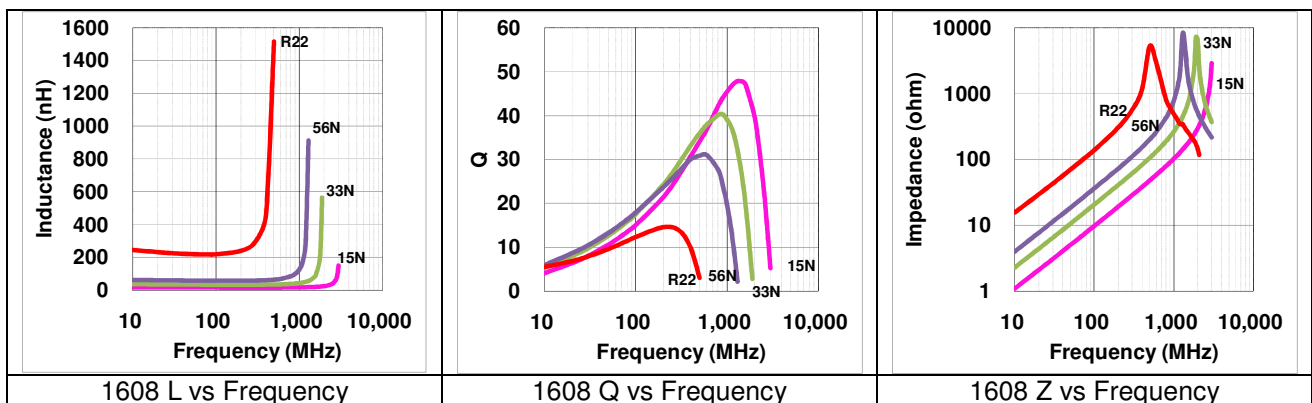
\*\* □ Tolerance: D=±0.1nH, C=±0.2nH, S=±0.3nH, G=±2%, J=±5%, K=±10%

- MEASURING EQUIPMENT: HP4291B+16192A ● MEASURING TEMPERATURE: 25 +/- 3 °C
- OPERATING TEMPERATURE RANGE: -40 °C TO +85 °C

## L, Q vs. FREQUENCY CHARACTERISTICS

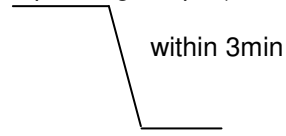
Ordering Code	Typical Inductance(nH)							Typical Q						
	100MH	500MH	800MH	900MH	1.8GHz	2.0GHz	2.4GHz	100MH	500MH	800MH	900MH	1.8GHz	2.0GHz	2.4GHz
HI16081N0	1.0	1.1	1.1	1.1	1.1	1.1	1.0	14	40	53	60	93	32	174
HI16081N2	1.2	1.2	1.2	1.2	1.2	1.2	1.1	14	38	49	54	84	32	143
HI16081N5	1.5	1.6	1.6	1.6	1.6	1.6	1.5	12	31	39	43	62	33	88
HI16081N8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	13	34	42	46	68	37	97
HI16082N2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	14	36	46	50	73	42	101
HI16082N7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	14	36	47	45	72	45	94
HI16083N3	3.3	3.3	3.3	3.3	3.5	3.5	3.6	14	37	47	50	67	47	77
HI16083N9	3.9	3.9	3.9	3.9	4.0	4.0	4.1	15	36	46	49	66	48	81
HI16084N7	4.7	4.6	4.6	4.7	4.9	4.9	5.1	15	39	50	53	70	53	80
HI16085N6	5.6	5.5	5.6	5.6	6.1	6.3	6.7	15	39	50	54	67	52	69
HI16086N8	6.8	6.7	6.7	6.8	7.3	7.5	7.9	15	38	49	52	66	53	66
HI16088N2	8.2	8.1	8.2	8.3	9.5	9.9	11.0	16	37	48	50	59	49	54
HI160810N	10.0	9.9	10.1	10.2	11.7	12.3	13.9	16	39	49	52	60	50	52
HI160812N	12.0	12.2	12.6	12.8	16.6	18.4	24.4	16	36	46	48	47	39	31
HI160815N	15.0	15.1	15.6	15.9	21.0	23.4	31.9	17	40	50	52	49	41	31
HI160818N	18.0	18.1	18.9	19.3	27.7	32.2	52.2	17	39	48	50	43	35	21
HI160822N	22.0	22.3	23.8	24.6	45.7	63.5	521.1	17	39	46	47	29	19	1
HI160827N	27.0	27.8	30.3	31.6	85.8	191.2	-	18	39	45	46	19	8	-
HI160833N	33.0	34.9	38.8	40.9	-	-	-	18	39	43	43	-	-	-
HI160839N	39.0	41.3	47.7	51.2	-	-	-	19	36	39	37	-	-	-
HI160847N	47.0	50.0	58.9	64.0	-	-	-	17	34	36	34	-	-	-
HI160856N	56.0	62.0	77.7	87.5	-	-	-	19	35	34	31	-	-	-
HI160868N	68.0	76.8	103.2	121.7	-	-	-	18	33	29	25	-	-	-
HI160882N	82.0	96.5	145.3	187.2	-	-	-	19	32	25	20	-	-	-
HI1608R10	100.0	123.7	222.4	343.5	-	-	-	18	30	19	12	-	-	-
HI1608R12	120.0	156.0	355.0	-	-	-	-	19	28	14	-	-	-	-
HI1608R15	150.0	227.9	-	-	-	-	-	18	21	-	-	-	-	-
HI1608R18	180.0	336.8	-	-	-	-	-	17	17	-	-	-	-	-
HI1608R22	220.0	520.7	-	-	-	-	-	16	13	-	-	-	-	-
HI1608R24	240.0	-	-	-	-	-	-	16	-	-	-	-	-	-
HI1608R27	270.0	-	-	-	-	-	-	16	-	-	-	-	-	-
HI1608R33	330.0	-	-	-	-	-	-	14	-	-	-	-	-	-
HI1608R39	390.0	-	-	-	-	-	-	14	-	-	-	-	-	-
HI1608R47	470.0	-	-	-	-	-	-	13	-	-	-	-	-	-

## TYPICAL ELECTRICAL CHARACTERISTICS



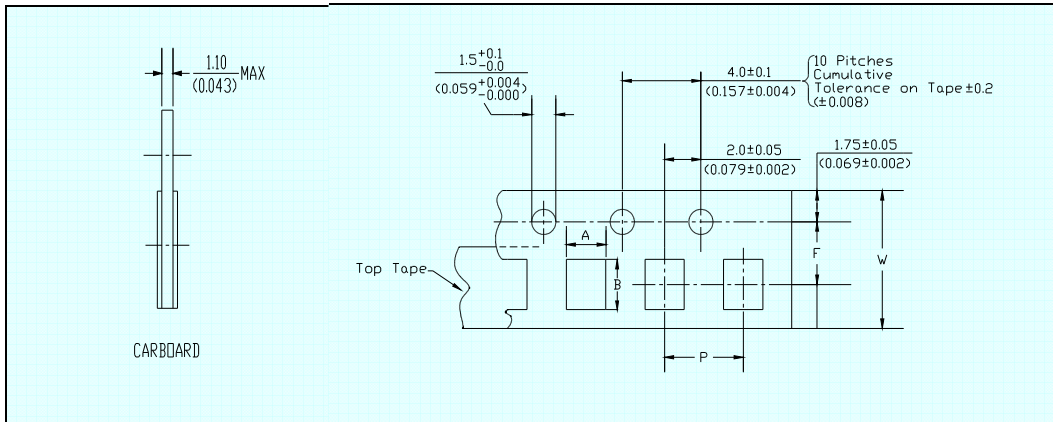
## TESTING CONDITION AND REQUIREMENTS

No.	Item	Test Condition	Requirements
1	Inductance	a. Temperature: 25+/- 3°C b. Relative Humidity: 45 to 75%RH c. Measuring equipment and fixture: 1608(0603) HP 4291+16192A 1005(0402) HP 4287+16193A 0603(0201) HP 4287+16196C	Within specified tolerance.
2	Q Value	a. Temperature: 25+/- 3°C b. Relative Humidity: 45 to 75%RH c. Measuring equipment and fixture: 1608(0603) HP 4291+16192A 1005(0402) HP 4287+16193A 0603(0201) HP 4287+16196C	In accordance with electrical specification.
3	DC Resistance	a. Temperature: 25+/- 3°C b. Relative Humidity: 45 to 75%RH c. Measuring equipment: HP 4338	In accordance with electrical specification.
4	Appearance	Inductors shall be visually inspected for visible evidence of defect.	In accordance with specification.
5	Dimension	Dimension shall be measured with caliper or micrometer	In accordance with dimension specification.
6	Solder-ability	Immerse a test sample into a methanol solution containing rosin and immerse into molten solder of 230+/-5°C for 5+/-1 seconds.	More than 75% of the terminal electrode part shall be covered with fresh solder.
7	Bending Strength	Solder the chip to test jig then apply a force in the direction shown in below. The soldering shall be done with the reflow method and shall be conducted with care so that the soldering is uniform and free of defects such as heat shock.  <p style="text-align: center;"><b>Mounting Samples</b></p>	1. No mechanical damage shall be observed. 2. Rdc-value: to meet the initial Spec.
8	Resistance to Soldering Heat	Immerse a test sample into a methanol solution containing resin, preheat it at 120 to 150°C for 1 minutes and immerse into molten solder of 270+/-5°C for 10+/-1 second so that both terminal electrodes are completely submerged.	No visible damage Inductance variation within 10% Q variation within 20%

9	Thermal Shock	<p>Solder a test sample to printed circuit board, and conduct 5 cycles of test under the conditions shown as below.</p> <p>0603 &amp; 1005 operating temp. range: -55~125°C 1608 operating temp. range: -40~85°C</p> <p>Cycle: Maximum operating temp. /(30+/-3min)</p>  <p>Minimum operating temp. (30+/-3min)</p>	<p>No visible damage Inductance variation within 10% Q variation within 20%</p>
10	High Humidity State Life Test	<p>Keep a test sample in an atmosphere with a temperature of 40+/-2°C, 90~95%RH for 500+/-12 hours. After the removal from test chamber, 2 to 3 hours of recovery under standard condition, and measurement shall be made after 24+/-2 hrs of recovery under standard condition.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>
11	High Humidity Load Life Test	<p>Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of 40+/-2°C, 90~95%RH for 500+/-12 hours while supplying the rated current. After the removal from test chamber, 2 to 3 hours of recovery under standard condition, and measurement shall be made after 24+/-2 hrs of recovery under standard condition.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>
12	High Temperature State Life Test	<p>Keep a test sample in an atmosphere with a temperature of 85+/-2°C for 500+/-12 hours. After the removal from test chamber, 2 to 3 hours of recovery under standard condition, and measurement shall be made after 24+/-2 hrs of recovery under standard condition.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>
13	High Temperature Load	<p>Solder a test sample to printed circuit board then keep the test sample in an atmosphere with a temperature of 85+/-2°C for 500+/-12 hours while supplying the rated current. After the removal from test chamber, 2 to 3 hours of recovery under standard condition, and measurement shall be made after 24+/-2 hrs of recovery under standard condition.</p>	<p>No visible damage. Inductance variation within 10%. Q variation within 20%.</p>

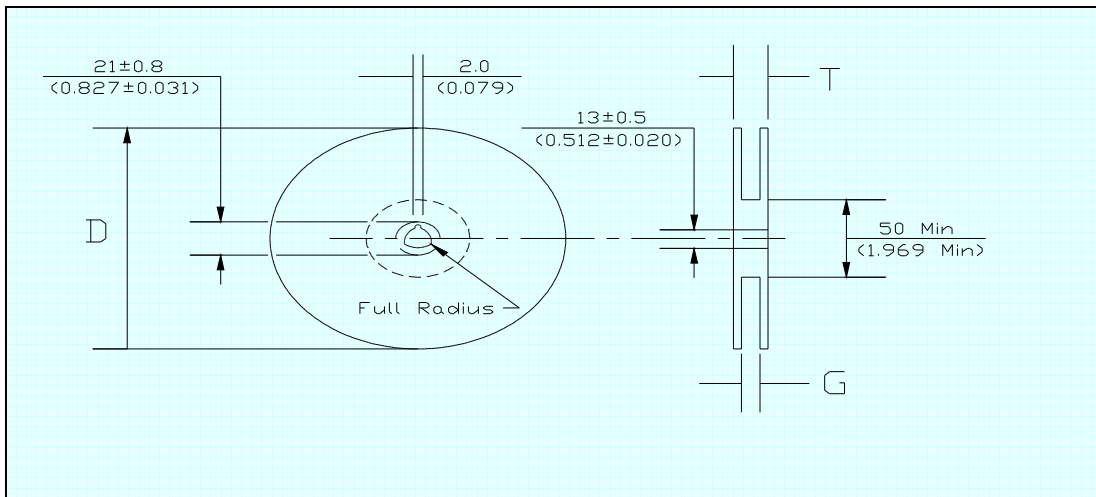
## PACKAGING SPECIFICATIONS

### Paper tape specifications(0603/1005/1608)



SYMBOL	PRODUCT SIZE CODE					
	0603(0201)		1005(0402)		1608(0603)	
	SIZE(mm)	TOL.(mm)	SIZE(mm)	TOL.(mm)	SIZE	TOL.(mm)
A	0.38	+/- 0.02	0.62	+/- 0.03	0.975	+/- 0.05
B	0.68	+/- 0.02	1.12	+/- 0.03	1.8	+/- 0.05
F	3.50	+/- 0.05	3.50	+/- 0.05	3.5	+/- 0.05
P	2.00	+/- 0.10	2.00	+/- 0.10	4.0	+/- 0.1
W	8.00	+/- 0.20	8.00	+/- 0.20	8.0	+/- 0.2

### Reel specifications

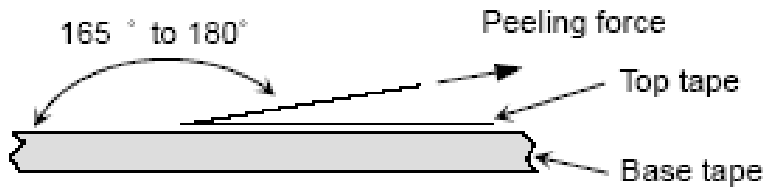


Tape Width (mm)	G (mm)	T max.(mm)	D (mm)
8	10.0+/-1.5	14.5	180

## ■ Peel strength of top cover tape

The peel speed shall be about 300 mm/min.

The peel strength of top cover tape shall be between 0.1 to 1.0N.



## ■ Quantity per reel

0603 (0201): 15,000 pieces / reel

1005 (0402): 10,000 pieces / reel

1608 (0603): 4,000 pieces / reel

## ■ The contents of a box

0603 (0201): 5 reels / box

1005 (0402): 5 reels / box

1608 (0603): 5 reels / box

## ■ Marking

The following item shall be marked on the reel.

- Manufactures parts number.
- Manufacturing date code.
- Manufacturer name.
- Manufactures lot number.
- Quantity.

## Cautions

### ■ Storage

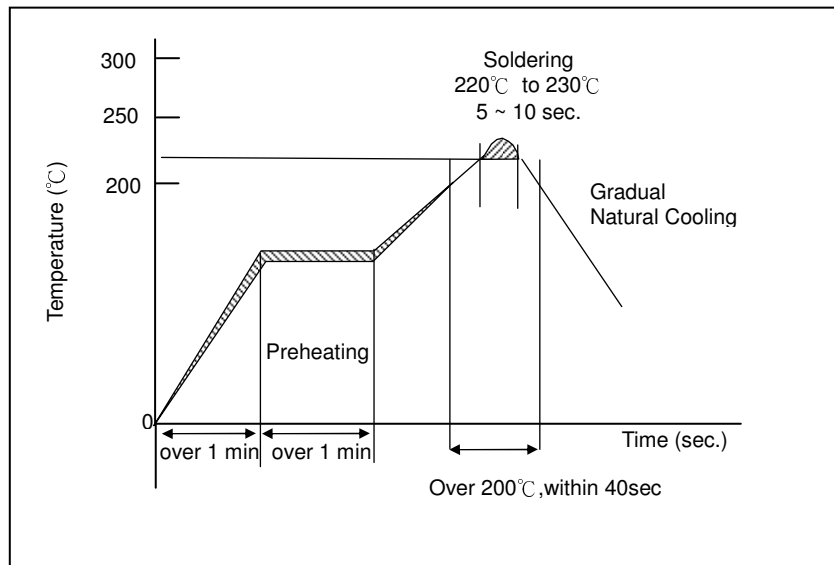
- The chip inductor shall be packaged in carrier tapes.
- To keep storage place temperature from +5 to 35°C, humidity from 45 to 70% RH.
- The storage atmosphere must be free of gas containing sulfur and chlorine. Also, avoid exposing the product to saline moisture. If the product is exposed to such atmospheres, the terminals will oxidize and solderability will be affected.
- The solderability is assured for 12 months from our final inspection date if the above storage condition is followed.

■ **Handling**

Chip inductor should be handled with care to avoid contamination or damage. The use of vacuum pick-up or plastic tweezers is recommended for manual placement. Tape and reeled packages are suitable for automatic pick and placement machine.

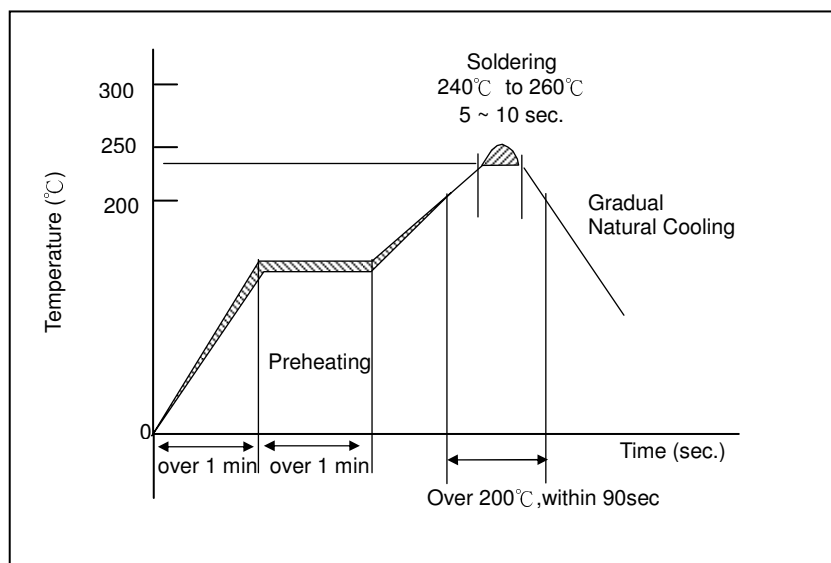
■ **Soldering Profile for SMT Process with SnPb Solder Paste.**

The rate of preheat should not exceed 4°C/sec and a target of 2°C/sec is preferred. Ceramic chip components should be preheated to within 100 to 130 °C of the soldering.

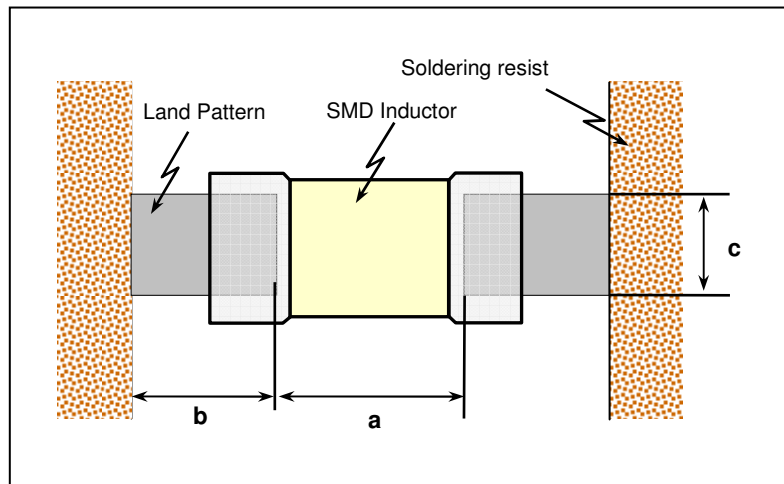


■ **Soldering Profile for SMT Process with Lead Free Solder Paste.**

The rate of preheat should not exceed 4°C/sec and a target of 2°C/sec is preferred. Ceramic chip components should be preheated to within 100 to 130 °C of the soldering.



■ Recommended pad dimensions



Size mm (EIA)	L x W (mm)	a (mm)	b (mm)	c (mm)
0603 (0201)	0.6*0.3	0.15 to 0.35	0.2 to 0.3	0.25 to 0.3
1005 (0402)	1.0*0.5	0.3 to 0.5	0.35 to 0.45	0.4 to 0.5
1608 (0603)	1.6*0.8	0.7 to 1.0	0.6 to 0.8	0.7 to 0.8