

HI 1608 Series

High Frequency Multilayer Chip Inductors

Features

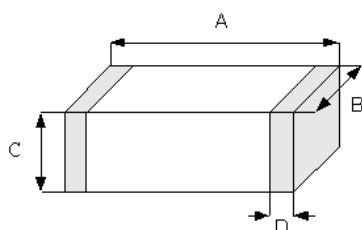
- ❖ Monolithic structure ensuring high performance and reliability.
- ❖ High frequency applications up to 6GHz.

Applications

- ❖ RF modules for telecommunication systems including GSM, PCS, DECT, WLAN, Bluetooth, etc.



Shape and Dimensions



Unit : mm (inch)

TYPE	EIA Code	A	B	C	D
1608	0603	1.60 ±0.15	0.80 ±0.15	0.80 ±0.15	0.30 ±0.20
		(.063 ±.006)	(.031 ±.006)	(.031 ±.006)	(.012 ±.008)

Part Number

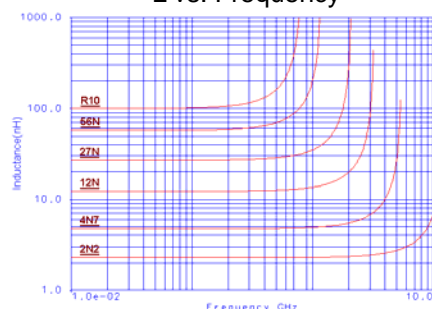
HI
1608
-
1
C
4N7
□
□
□

①
②
③
④
⑤
⑥
⑦
⑧

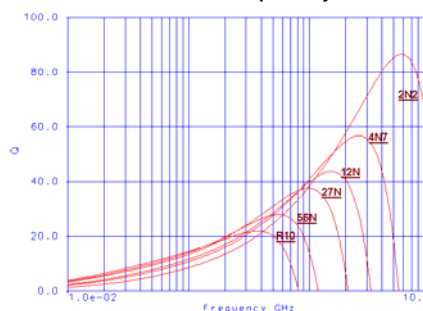
① Type	HI :High Frequency Inductors	② Dimensions (L x W)	1.6 x 0.8 mm
③ Circuit	1 : Single	④ Material Code	C (lead-free)
⑤ Inductance	4N7=4.7nH 47N=47nH R10=100nH	⑥ Tolerance	S:±0.3nH, J:±5%, K:±10%
⑦ Marking	N: No marking	⑧ Packaging	T: Tape & Reel B: Bulk

Typical Electrical Characteristics

L vs. Frequency



Q vs. Frequency



Specifications

Part Number	Inductance(nH)	Q Min.	L/Q Freq. (MHz)	R _{DC} (Ω) Max.	S.R.F. (MHz) Typ.	I _{DC} (mA) Max.
HI1608-1_1N0_N_	1.0 ± 0.3	8	100	0.10	>17000	600
HI1608-1_1N2_N_	1.2 ± 0.3	8	100	0.10	>17000	
HI1608-1_1N5_N_	1.5 ± 0.3	8	100	0.10	>17000	
HI1608-1_1N8_N_	1.8 ± 0.3	8	100	0.15	13000	
HI1608-1_2N2_N_	2.2 ± 0.3	8	100	0.15	12000	
HI1608-1_2N7_N_	2.7 ± 0.3	8	100	0.20	8600	
HI1608-1_3N3_N_	3.3 ± 0.3 or ± 10%	8	100	0.25	6500	
HI1608-1_3N9_N_	3.9 ± 0.3 or ± 10%	8	100	0.25	6300	
HI1608-1_4N7_N_	4.7 ± 0.3 or ± 10%	8	100	0.30	5400	
HI1608-1_5N6_N_	5.6 ± 0.3 or ± 10%	8	100	0.30	4600	
HI1608-1_6N8_N_	6.8 ± 5% or ± 10%	8	100	0.35	4500	
HI1608-1_8N2_N_	8.2 ± 5% or ± 10%	8	100	0.40	3800	
HI1608-1_10N_N_	10 ± 5% or ± 10%	8	100	0.45	3700	
HI1608-1_12N_N_	12 ± 5% or ± 10%	8	100	0.50	3200	
HI1608-1_15N_N_	15 ± 5% or ± 10%	8	100	0.55	2900	
HI1608-1_18N_N_	18 ± 5% or ± 10%	10	100	0.60	2100	
HI1608-1_22N_N_	22 ± 5% or ± 10%	10	100	0.65	2100	
HI1608-1_27N_N_	27 ± 5% or ± 10%	10	100	0.70	2000	
HI1608-1_33N_N_	33 ± 5% or ± 10%	10	100	0.80	1600	
HI1608-1_39N_N_	39 ± 5% or ± 10%	10	100	0.85	1500	
HI1608-1_47N_N_	47 ± 5% or ± 10%	12	100	1.00	1200	
HI1608-1_56N_N_	56 ± 5% or ± 10%	12	100	1.10	1100	
HI1608-1_68N_N_	68 ± 5% or ± 10%	12	100	1.20	1000	
HI1608-1_82N_N_	82 ± 5% or ± 10%	12	100	1.80	850	
HI1608-1_R10_N_	100 ± 5% or ± 10%	12	100	2.00	750	
HI1608-1_R12_N_	120 ± 5% or ± 10%	8	50	2.30	700	
HI1608-1_R15_N_	150 ± 5% or ± 10%	8	50	2.40	650	
HI1608-1_R18_N_	180 ± 5% or ± 10%	8	50	2.70	550	
HI1608-1_R22_N_	220 ± 5% or ± 10%	8	50	2.80	450	

Operating Temperature Range : -40 ~ +100 °C

Storage Temperature Range : -40 ~ +100 °C

Storage Period: 12 months max.

Test Method : L and Q

S.R.F. (Self Resonant Frequency)

R_{DC} (DC Resistance)

I_{DC} (Rated Current)

: HP 4291B (+16193A)

: HP 8722D

: HP 4338B

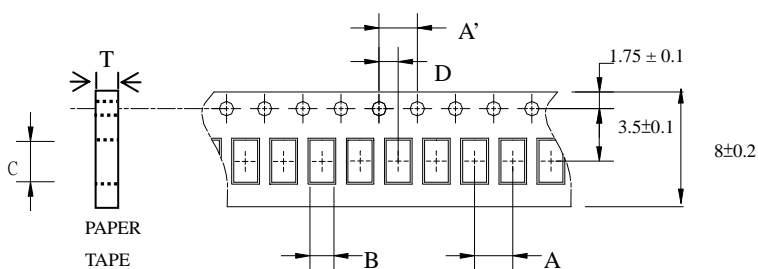
: HP 4284A

Notes

- ❖ The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

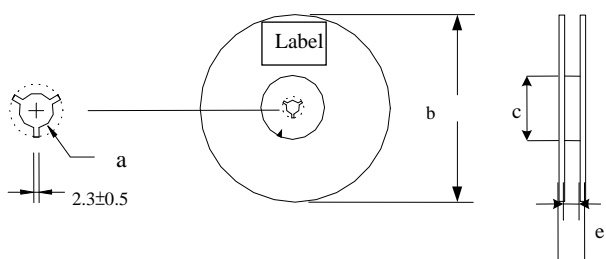
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



❖Reel Dimensions (Unit: mm)

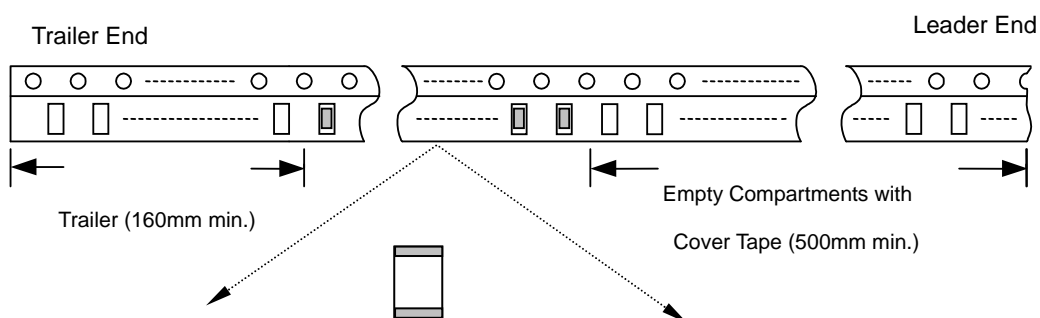
Type	A	A'	B	C	D	T	Quantity/ reel	Tape material
HI1608	4.0±0.1	4.0±0.1	1.05±0.05	1.85±0.05	2.0±0.05	0.95±0.05	4000 pcs	Paper



Label: Customer's Name, ACX P/N,
Q'ty, Date, ACX Corp.

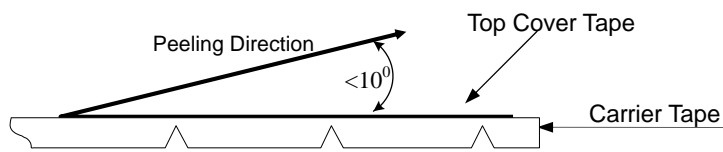
Type	a	b	c	d	e
HI1608	13.5±0.5	178±1	60±1	1.2±0.2	9.0±0.3

❖Leader / Trailer Tape (Unit: mm)



❖ **Peel-off Force**

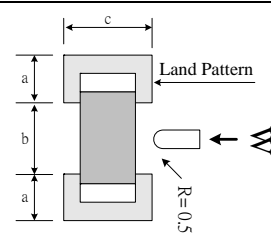
Peel-off force should be in the range of 0.1 – 0.6 N at a peel-off speed of 300 ± 10 mm/min .



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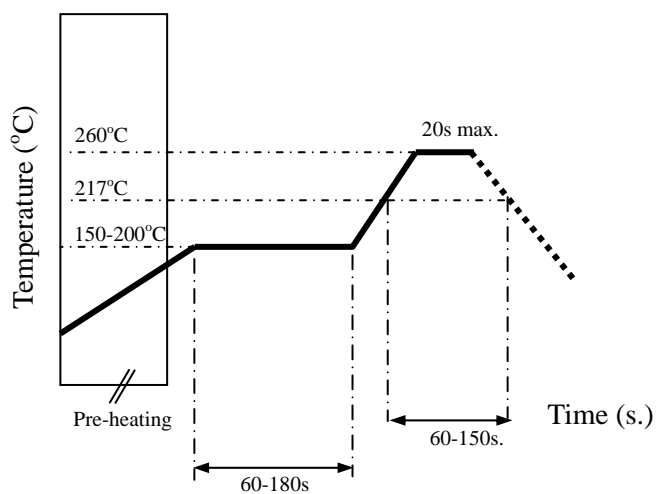
Mechanical & Environmental Characteristics

tem	Requirements	Procedure										
Solderability	<ol style="list-style-type: none"> No apparent damage More than 95% of the terminal electrode shall be covered with new solder. L : within $\pm 10\%$ Q : within $\pm 20\%$ 	<ol style="list-style-type: none"> Preheat : $120\pm 20^{\circ}\text{C}$ for ≥ 1 min Solder : $245\pm 5^{\circ}\text{C}$ for 5 ± 1 sec 										
Termination Adhesion (Flexure Strength)	<ol style="list-style-type: none"> No apparent damage 	 <table border="1" data-bbox="1300 481 1460 728"> <thead> <tr> <th>Type</th> <th>HI1608</th> </tr> </thead> <tbody> <tr> <td>a (mm)</td> <td>0.9</td> </tr> <tr> <td>b (mm)</td> <td>0.8</td> </tr> <tr> <td>c (mm)</td> <td>0.9</td> </tr> <tr> <td>W (kgf)</td> <td>2.0</td> </tr> </tbody> </table>	Type	HI1608	a (mm)	0.9	b (mm)	0.8	c (mm)	0.9	W (kgf)	2.0
Type	HI1608											
a (mm)	0.9											
b (mm)	0.8											
c (mm)	0.9											
W (kgf)	2.0											
Solder Heat Resistance	<ol style="list-style-type: none"> No apparent damage More than 95% of the terminal electrode shall be covered with new solder. 	<ol style="list-style-type: none"> Preheat : $120\pm 20^{\circ}\text{C}$ for ≥ 1 min Solder : $260\pm 5^{\circ}\text{C}$ for 10 ± 1 sec 										
Heat/ Humidity Resistance	<ol style="list-style-type: none"> No apparent damage L : within $\pm 10\%$ Q: within $\pm 20\%$ Fulfill the electrical specification 	<ol style="list-style-type: none"> Temperature : $85 \pm 2^{\circ}\text{C}$ Humidity : 80%~85% RH Applied current : rated current Duration : 500 ± 24 hours Recovery : 1-2hr 										
Thermal Shock (Temperature Cycle)	<ol style="list-style-type: none"> No apparent damage L : within $\pm 10\%$ Q: within $\pm 20\%$ Fulfill the electrical specification 	<ol style="list-style-type: none"> One cycle/step 1 : $125 \pm 5^{\circ}\text{C}$ for 30 min step 2 : $-40 \pm 3^{\circ}\text{C}$ for 30 min No. of cycles : 100 Recovery:1-2 hrs 										
Low Temperature Resistance	<ol style="list-style-type: none"> No apparent damage L : within $\pm 10\%$ Q: within $\pm 20\%$ Fulfill the electrical specification 	<ol style="list-style-type: none"> Temperature : $-40 \pm 5^{\circ}\text{C}$ Duration : 500 ± 24 hours Recovery : 1-2hr 										

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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