PSA 佳邦科技股份有限公司
INPAQ TECHNOLOGY CO., LTD.

MCI HQ Series

Data Sheet

Product Name	**MCI HQ Series**
Series	**RF Inductor**
Size	**EIAJ 1608**
Version	**A1**

High Frequency Chip Ceramic Inductor (MCI HQ Series)

This product belongs to the 3C and industrial grade standard, not for automotive application. If customer privately uses to automotive parts and results in any consequences, INPAQ is not responsible for after-sales service, thank you!

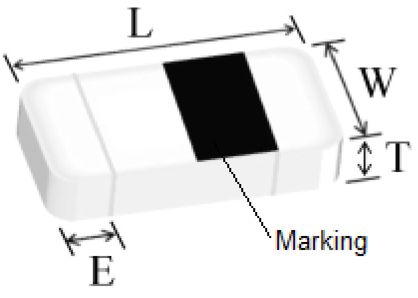
■ FEATURES

- ➢ Particular ceramic material and coil structure provide high frequency application range up to 10GHz.
- ➢ Small size and low profile.
- ➢ Available in various sizes.
- ➢ Excellent solderability and heat resistance.

■ APPLICATIONS

RF and wireless communication, information technology equipment which includes computer, telecommunications, radar detectors, automotive electronics, cellular phones, pagers, audio equipment, PDAs, keyless remote system and low-voltage power supply modules.

■ SHAPES AND DIMENSIONS



TYPE	160808 (EIA 0603)
L	1.60±0.15
W	0.80±0.15
T	0.80±0.15
E	0.40±0.20
Unit	mm

PART NUMBER CODE

MCI	1608	HQ	1N0	S	H	B	P
1	2	3	4	5	6	7	8

1 Series Name
2 Dimensions L*W
3 HQ：material code
4 Inductance(nH)：N means Decimal point , ex：1.0 nH = 1N0
5 Tolerance : S = ±0.3nH，J = ±5%
6 Mark：H = 1/8 Mark，M = 1/4 Mark，N = No Mark
7 Soldering : Green Parts，B= Lead-Free for whole chip
8 Packaging : P - Paper tape, 7" reel

GENERAL TECHNICAL DATA

Operating temperature range: - 55℃~ +125℃
Storage Condition: Less than 40℃ and 70% RH
Storage Time: 12 months Max.
Soldering method: Reflow

TEST INSTRUMENTS CONDITIONS

Agilent E4991A/B RF Impedance Material Analyzer or equivalent
with fixture 16197A or equivalent
Agilent 4338B Milliohm meter
Test Level：500mV

■ PART NUMBER AND CHARACTERISTICS TABLE

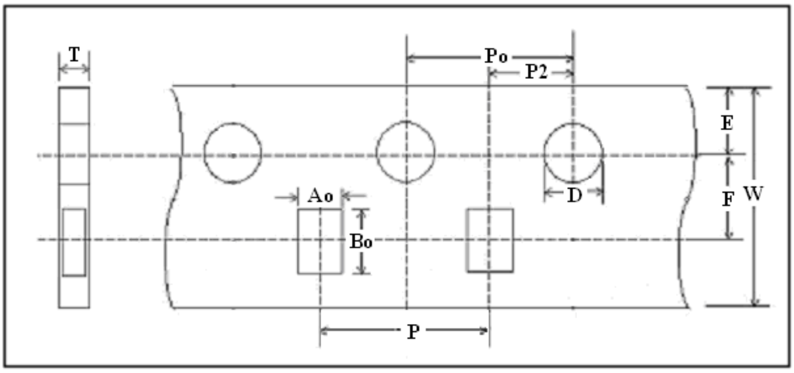
Part No.	Inductance (nH)	Inductance Tolerance	Q (Min.)	Freq. (MHz)	DCR(Ω) Max.	S.R.F (MHz) Min.	Rated Current (mA) Max.
MCI1608HQ1N0_HBP	1.0	S=±0.3nH	8	100	0.05	10,000	1000
MCI1608HQ1N2_HBP	1.2		8	100	0.05	10,000	1000
MCI1608HQ1N5_HBP	1.5		8	100	0.10	10,000	1000
MCI1608HQ1N8_HBP	1.8		8	100	0.10	10,000	1000
MCI1608HQ2N2_HBP	2.2		8	100	0.10	8,000	1000
MCI1608HQ2N7_HBP	2.7		10	100	0.13	7,000	1000
MCI1608HQ3N3_HBP	3.3		10	100	0.13	6,000	1000
MCI1608HQ3N9_HBP	3.9		10	100	0.15	6,000	1000
MCI1608HQ4N7_HBP	4.7		10	100	0.20	5,000	1000
MCI1608HQ5N6_HBP	5.6		10	100	0.23	4,000	700
MCI1608HQ6N8_HBP	6.8	J=±5%	10	100	0.25	4,000	700
MCI1608HQ8N2_HBP	8.2		10	100	0.28	3,500	600
MCI1608HQ10N_HBP	10		12	100	0.30	3,400	600
MCI1608HQ12N_HBP	12		12	100	0.35	2,600	600
MCI1608HQ15N_HBP	15		12	100	0.40	2,300	600
MCI1608HQ18N_HBP	18		12	100	0.45	2,000	600
MCI1608HQ22N_HBP	22		12	100	0.50	1,600	600
MCI1608HQ27N_HBP	27		12	100	0.55	1,400	600
MCI1608HQ33N_HBP	33		12	100	0.60	1,200	600
MCI1608HQ39N_HBP	39		12	100	0.65	1,100	500
MCI1608HQ47N_HBP	47		12	100	0.70	900	500
MCI1608HQ56N_HBP	56		12	100	0.75	900	500
MCI1608HQ68N_HBP	68		12	100	0.85	700	400
MCI1608HQ82N_HBP	82		12	100	0.95	600	300
MCI1608HQR10_HBP	100		12	100	1.00	600	300
MCI1608HQR12_HBP	120		8	50	1.20	500	300
MCI1608HQR15_HBP	150		8	50	1.20	500	300
MCI1608HQR18_HBP	180		8	50	1.30	400	300
MCI1608HQR22_HBP	220		8	50	1.50	400	300

Part No.	Inductance (nH)	Inductance Tolerance	Q (Min.)	Freq. (MHz)	DCR(Ω) Max.	S.R.F (MHz) Min.	Rated Current (mA) Max.
MCI1608HQR27_HBP	270	J=±5%	8	50	1.90	400	200
MCI1608HQR33_HBP	330		8	50	2.10	350	200
MCI1608HQR39_HBP	390		8	50	2.30	350	150
MCI1608HQR47_HBP	470		8	50	2.60	300	150

** For special part number which is not shown in the above table, please refer to appendix.

■ PACKAGING SPECIFICATIONS

➢ Type：Paper Carrier

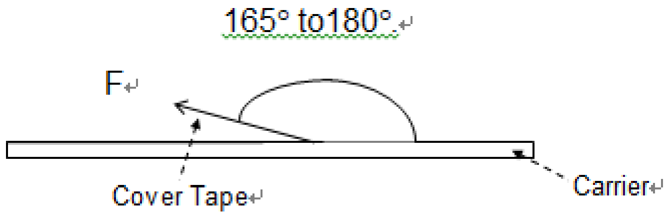


➢ Taping Dimension

Unit：mm

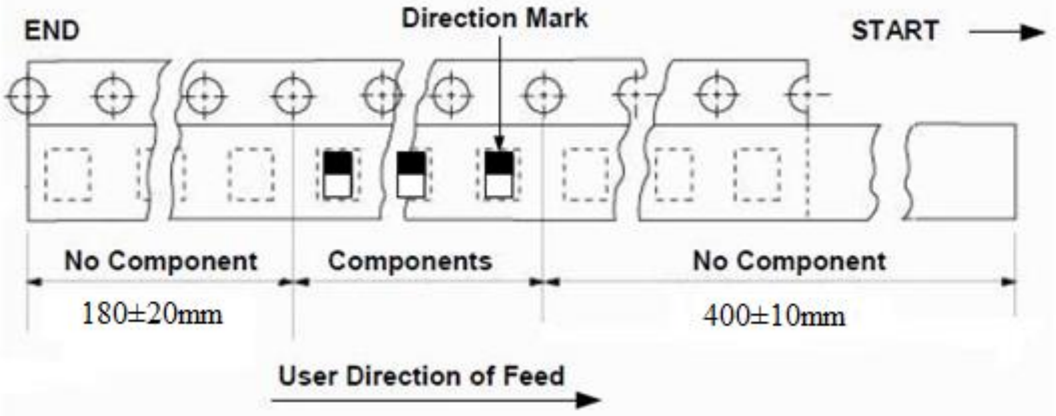
TYPE	**1608**
Symbol	PAPER
W	8.00±0.10
P	4.00±0.10
E	1.75±0.05
F	3.50±0.05
D	1.55±0.05
Po	4.00±0.10
P2	2.00±0.05
Ao	0.98±0.03
Bo	1.80±0.05
T	0.95±0.05

➢ Peel-off force

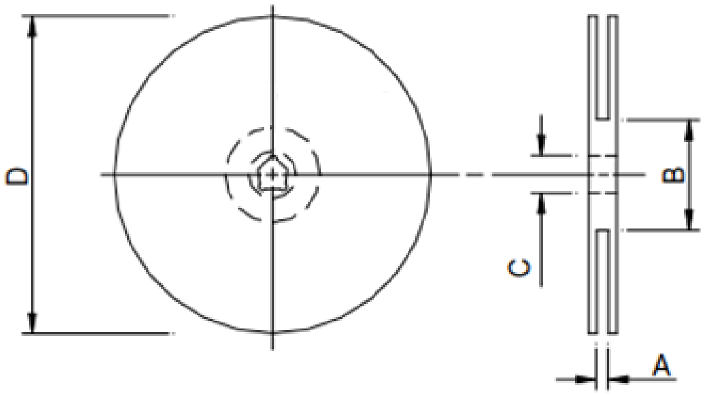


Peel-off force should be in the range of 10 ~ 50g at a peel-off of 300mm/min

➢ Leader and Trailer Tape



■ REEL DIMENSION

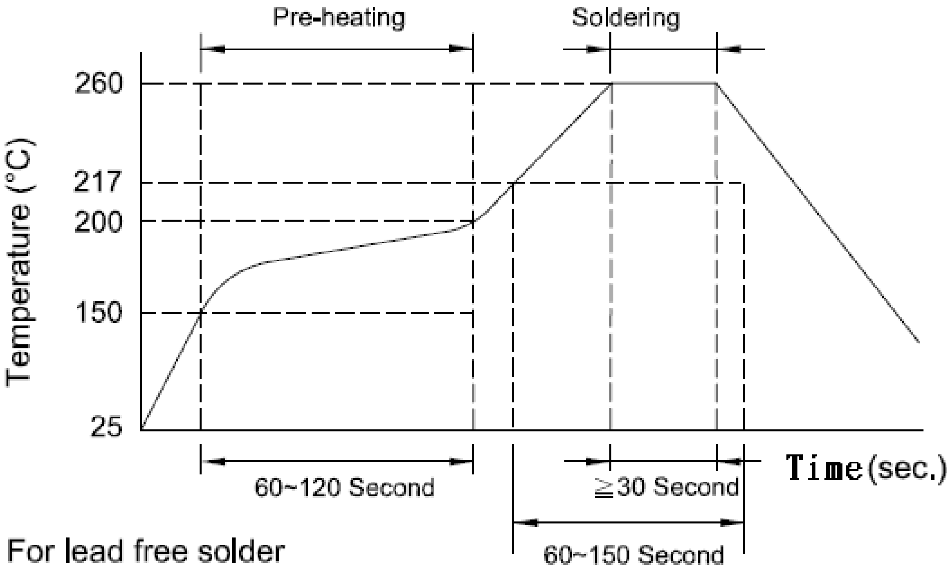


Type	A(mm)	B(mm)	C(mm)	D(mm)
7”	10±1.5	50 or more	13.2±1.0	178±2.0

■ STANDARD QUANTITY FOR PACKAGING

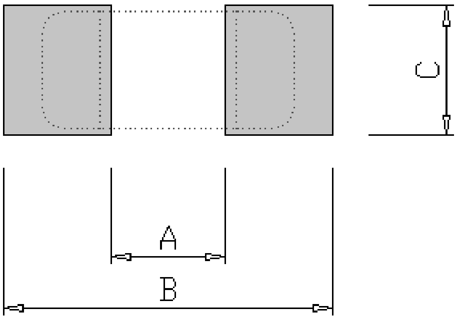
Packaging style：Taping
Reel packaging quantity：**4,000** pcs/reel
Per the box：5 Reels

■ RECOMMENDED SOLDERING CONDITIONS



■ LAND PATTERNS REFLOW SOLDERING

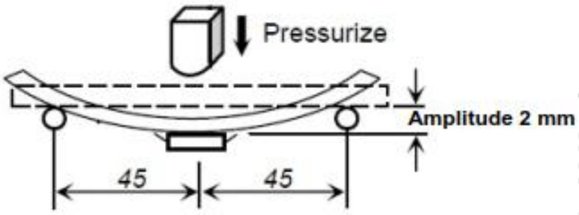
Solder land information：



TYPE (mm)	A	B	C
1608 (EIA 0603)	0.7 (0.028)	1.9 ～ 2.3 (0.075 ～ 0.091)	0.6 ～ 0.8 (0.024 ～ 0.031)

■ RELIABILITY AND TEST CONDITION

Item	Test Condition	Requirements
Thermal Shock	1. Temperature : -55 ~ +125℃ 2. Cycle : 100 cycles 3. Dwell time : 30minutes 4. Measurement : at ambient temperature 24 hrs after test completion	1. No mechanical damage 2. Inductance value should be within ± 10 % of the initial value 3. Q value should be within ± 20% of the initial value
Operational Life	1. Temperature: 85 ± 5℃ 2. Testing time: 1000 hrs 3. Applied current: Full rated current 4. Measurement: at ambient temperature 24 hours after test completion	1. No mechanical damage 2. Inductance value should be within ± 10 % of the initial value 3. Q value should be within ± 20% of the initial value
Biased Humidity	1. Temperature : 40℃ ± 2℃ 2. Humidity : 90 ~ 95 % RH 3. Test time : 1000 hrs 4. Apply current : full rated current 5. Measurement : at ambient temperature 24 hrs after test completion	1. No mechanical damage 2. Inductance value should be within ± 10 % of the initial value 3. Q value should be within ± 20% of the initial value
Resistance to Solder Heat	1. Solder temperature : 260 ± 5℃ 2. Flux : Rosin 3. DIP time : 10 ± 1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. Inductance value should be within ± 10 % of the initial value 3. Q value should be within ± 20% of the initial value
Solderability	1. Solder temperature : 235 ± 5℃ 2. Flux : Rosin 3. DIP time : 5 ± 1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage

Item	Test Condition	Requirements
Bending Strength	1. Solder the chip to test jig then apply a force in the direction shown in below. 2. 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. 	No mechanical damage

- **NOTE**

  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.