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 1005
Version	A16

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!

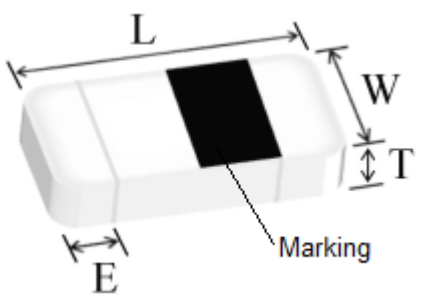
■ FEATURES

- 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	100505 (EIA 0402)
L	1.00±0.10
W	0.50±0.10
T	0.50±0.10
E	0.20±0.10
Unit	mm

■ PART NUMBER CODE

MCI	1005	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 : B = ±0.1nH，C = ±0.2nH，S = ±0.3nH，G = ±2%，H = ±3%，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

PASSIVE SYSTEM ALLIANCE
INPAQ TECHNOLOGY CO., LTD ALL RIGHT RESERVED.

■ 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.
MCI1005HQ0N3_HBP	0.3	B=±0.1nH	8	100	0.08	10,000	1000
MCI1005HQ0N4_HBP	0.4		8	100	0.08	10,000	1000
MCI1005HQ0N5_HBP	0.5		8	100	0.08	10,000	1000
MCI1005HQ0N6_HBP	0.6		8	100	0.08	10,000	1000
MCI1005HQ0N7_HBP	0.7		8	100	0.08	10,000	1000
MCI1005HQ0N8_HBP	0.8		8	100	0.08	10,000	1000
MCI1005HQ1N0_HBP	1.0	B=±0.1nH C=±0.2nH S=±0.3nH	8	100	0.08	10,000	1000
MCI1005HQ1N1_HBP	1.1		8	100	0.08	10,000	1000
MCI1005HQ1N2_HBP	1.2		8	100	0.09	10,000	1000
MCI1005HQ1N3_HBP	1.3		8	100	0.09	10,000	1000
MCI1005HQ1N5_HBP	1.5		8	100	0.10	10,000	1000
MCI1005HQ1N6_HBP	1.6		8	100	0.10	10,000	1000
MCI1005HQ1N8_HBP	1.8		8	100	0.12	10,000	900
MCI1005HQ2N0_HBP	2.0		8	100	0.12	10,000	900
MCI1005HQ2N2_HBP	2.2		8	100	0.13	10,000	900
MCI1005HQ2N4_HBP	2.4		8	100	0.13	10,000	800
MCI1005HQ2N7_HBP	2.7		8	100	0.16	6,000	800
MCI1005HQ3N0_HBP	3.0		8	100	0.16	6,000	800
MCI1005HQ3N3_HBP	3.3		8	100	0.16	6,000	800
MCI1005HQ3N6_HBP	3.6		8	100	0.20	6,000	700
MCI1005HQ3N9_HBP	3.9		8	100	0.20	6,000	700
MCI1005HQ4N3_HBP	4.3		8	100	0.20	6,000	700
MCI1005HQ4N7_HBP	4.7		8	100	0.20	6,000	700
MCI1005HQ5N1_HBP	5.1		8	100	0.23	5,300	600
MCI1005HQ5N6_HBP	5.6		8	100	0.23	4,500	600
MCI1005HQ6N2_HBP	6.2		8	100	0.25	4,500	600
MCI1005HQ6N8_HBP	6.8	G=±2% H=±3% J=±5%	8	100	0.25	4,500	600
MCI1005HQ7N5_HBP	7.5		8	100	0.28	4,200	500
MCI1005HQ8N2_HBP	8.2		8	100	0.28	3,700	500
MCI1005HQ9N1_HBP	9.1		8	100	0.30	3,400	500

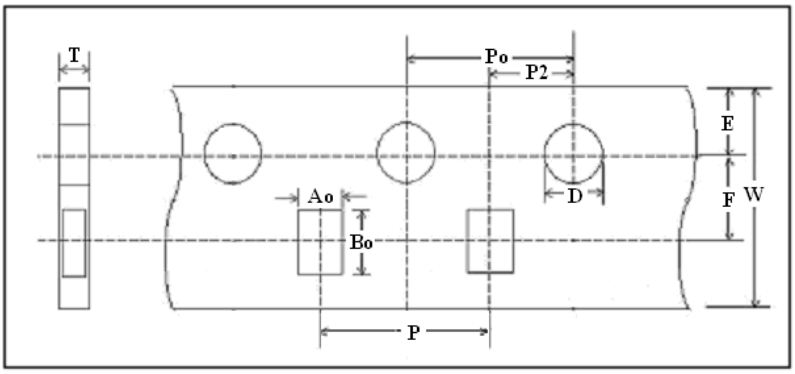
Part No.	Inductance (nH)	Inductance Tolerance	Q (Min.)	Freq. (MHz)	DCR(Ω) Max.	S.R.F (MHz) Min.	Rated Current (mA) Max.
MCI1005HQ10N_HBP	10	G=±2% H=±3% J=±5%	8	100	0.30	3,400	500
MCI1005HQ12N_HBP	12		8	100	0.45	3,000	400
MCI1005HQ15N_HBP	15		8	100	0.55	2,500	400
MCI1005HQ18N_HBP	18		8	100	0.65	2,200	300
MCI1005HQ22N_HBP	22		8	100	0.70	1,900	300
MCI1005HQ27N_HBP	27		8	100	0.80	1,700	300
MCI1005HQ33N_HBP	33		8	100	0.90	1,600	200
MCI1005HQ39N_HBP	39		8	100	1.00	1,200	200
MCI1005HQ47N_HBP	47		8	100	1.10	1,100	200
MCI1005HQ56N_HBP	56		8	100	1.10	1,000	200
MCI1005HQ68N_HBP	68		8	100	1.20	800	200
MCI1005HQ82N_HBP	82	J=±5%	8	100	1.30	600	200
MCI1005HQR10_HBP	100		8	100	1.60	600	200
MCI1005HQR12_HBP	120		8	100	1.60	600	150
MCI1005HQR15_HBP	150		8	100	3.20	550	140

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

PASSIVE SYSTEM ALLIANCE
INPAQ TECHNOLOGY CO., LTD ALL RIGHT RESERVED

■ PACKAGING SPECIFICATIONS

➢ Type：Paper Carrier

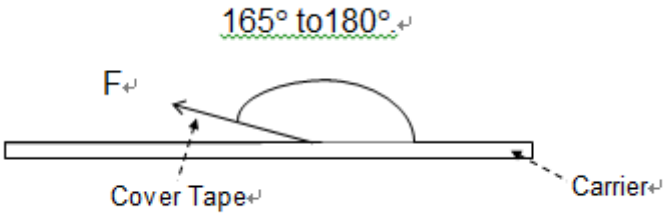


➢ Taping Dimension

Unit：mm

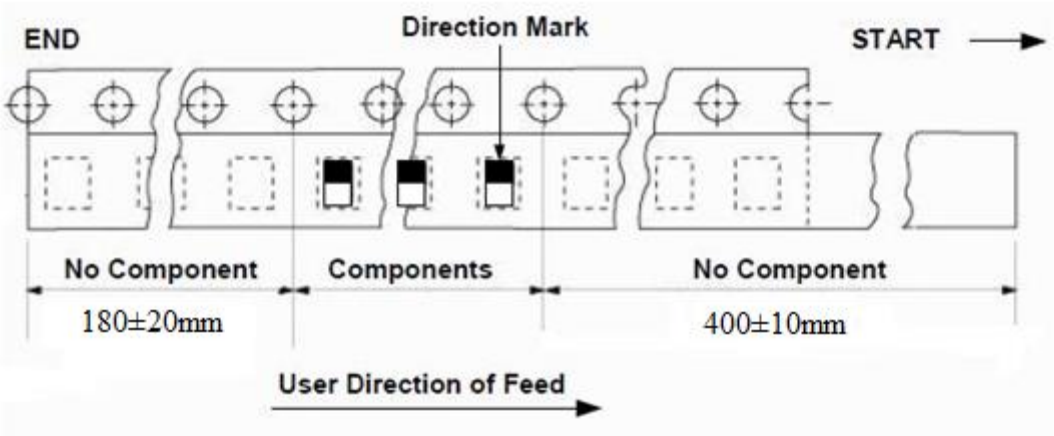
TYPE	**1005**
Symbol	PAPER
W	8.00±0.10
P	2.00±0.05
E	1.75±0.05
F	3.50±0.05
D	1.55±0.05
Po	4.00±0.10
P2	2.00±0.05
Ao	0.60±0.03
Bo	1.12±0.03
T	0.60±0.03

➢ Peel-off force

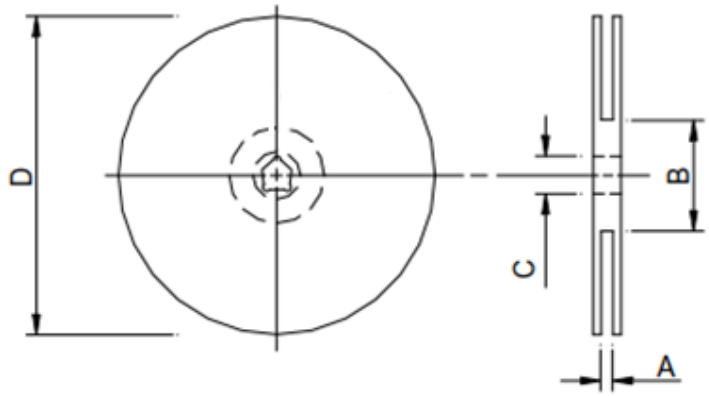


Peel-off force should be in the range of 10 ~ 50g at a peel-off of 300mm/min

➢ Leader and Trailer Tape



■ REEL DIMENSION



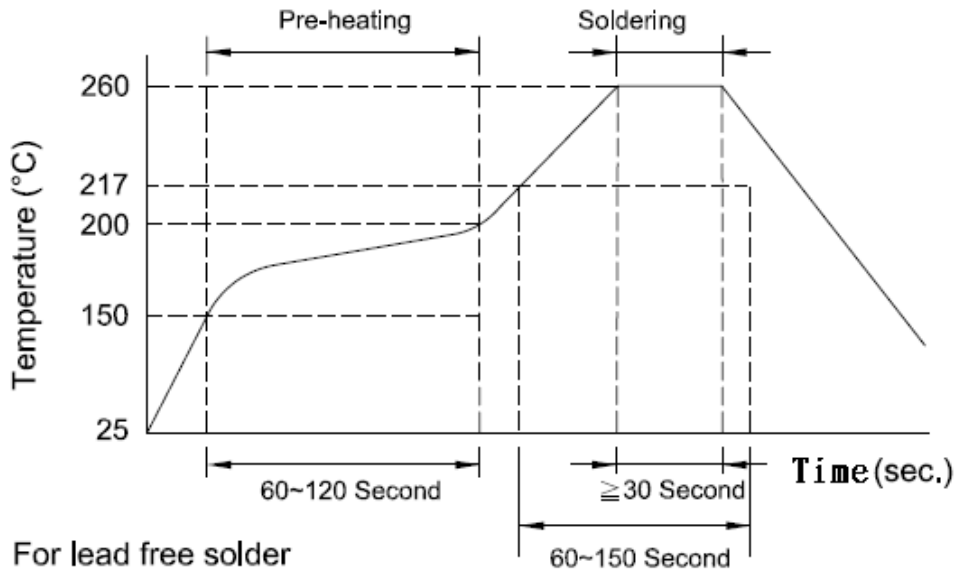
Type	A(mm)	B(mm)	C(mm)	D(mm)
7”	10±1.5	50 or more	13.2±1.0	178±2.0

■ STANDARD QUANTITY FOR PACKAGING

Packaging style：Taping
Reel packaging quantity：**10,000** pcs/reel
Per the box：5 Reels

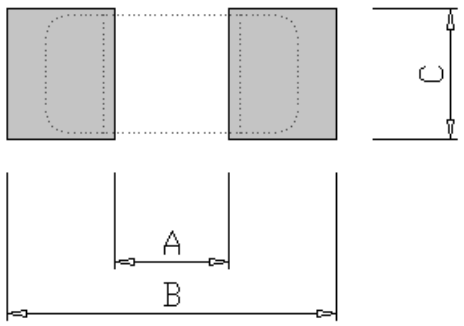
INPAQ TECHNOLOGY CO., LTD ALL RIGHT RESERVED. COPYRIGHT©

■ RECOMMENDED SOLDERING CONDITIONS



■ LAND PATTERNS REFLOW SOLDERING

Solder land information：

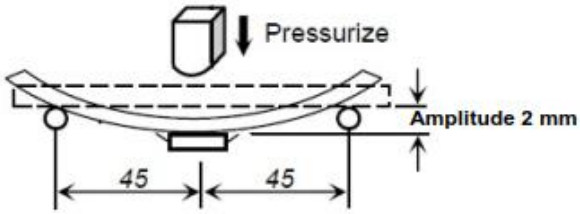


TYPE (mm)	A	B	C
1005 (EIA 0402)	0.4 (0.016)	1.4 ～ 1.5 (0.055 ～ 0.059)	0.5 ～ 0.6 (0.020 ～ 0.024)

PASSIVE SYSTEM ALLIANCE
COPYRIGHT © INPAQ TECHNOLOGY CO., LTD ALL RIGHT RESERVED.

■ 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.

PASSIVE SYSTEM ALLIANCE
COPYRIGHT© INPAQ TECHNOLOGY CO., LTD ALL RIGHT RESERVED