PRODUCT SPECIFICATION

DOCUMENT NO. ENS000167380				
DESCRIPTION	**DRAWN BY**	**DESIGNED BY**	**CHECKED BY**	**APPROVED BY**
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High Frequency Chip Ceramic Inductor (MCI-TM Series) Engineering Specification

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!

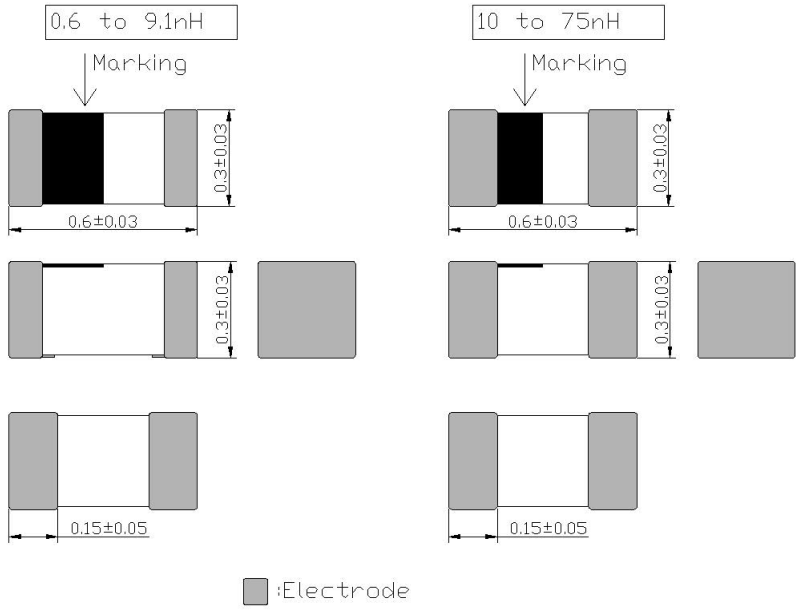
■ FEATURES

- 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



unit : mm

■ PART NUMBER CODE

MCI	0603	TM	1N0	B	H	B	P
1	2	3	4	5	6	7	8

1 Series Name
2 Dimensions L*W
3 TM：material code
4 Inductance(nH)：N means Decimal point , ex：1.0 nH = 1N0 , 100.0 nH = R10
5 Tolerance：B = ±0.1nH，C = ±0.2nH，S = ±0.3nH，H = ±3%，J = ±5%
6 Mark：H = 1/8 Mark，M = 1/4 Mark，N = No Mark
7 Internal Code
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 RF Impedance/ Material Analyzer or equivalent
with fixture 16197A or equivalent
(The residual inductance needs to be compensated：0.48nH)
Agilent 4338B Milliohm meter
Test Level：500 mV

■ 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.
MCI0603TM0N6_HBP	0.6	B：±0.1nH C：±0.2nH	14	500	0.07	20,000	850
MCI0603TM0N7_HBP	0.7		14	500	0.08	20,000	800
MCI0603TM0N8_HBP	0.8		14	500	0.08	18,000	800
MCI0603TM0N9_HBP	0.9		14	500	0.10	18,000	750
MCI0603TM1N0_HBP	1.0	B：±0.1nH C：±0.2nH S：±0.3nH	14	500	0.10	17,000	750
MCI0603TM1N1_HBP	1.1		14	500	0.10	17,000	750
MCI0603TM1N2_HBP	1.2		14	500	0.10	17,000	750
MCI0603TM1N3_HBP	1.3		14	500	0.15	17,000	600
MCI0603TM1N4_HBP	1.4		14	500	0.15	16,000	600
MCI0603TM1N5_HBP	1.5		14	500	0.15	15,000	600
MCI0603TM1N6_HBP	1.6		14	500	0.15	15,000	600
MCI0603TM1N7_HBP	1.7		14	500	0.15	15,000	600
MCI0603TM1N8_HBP	1.8		14	500	0.15	15,000	600
MCI0603TM1N9_HBP	1.9		14	500	0.15	12,500	600
MCI0603TM2N0_HBP	2.0		14	500	0.15	12,500	600
MCI0603TM2N1_HBP	2.1		14	500	0.15	11,000	600
MCI0603TM2N2_HBP	2.2		14	500	0.15	11,000	600
MCI0603TM2N3_HBP	2.3		14	500	0.20	10,000	500
MCI0603TM2N4_HBP	2.4		14	500	0.20	10,000	500
MCI0603TM2N5_HBP	2.5		14	500	0.20	10,000	500
MCI0603TM2N6_HBP	2.6		14	500	0.20	10,000	500
MCI0603TM2N7_HBP	2.7		14	500	0.20	10,000	500
MCI0603TM2N8_HBP	2.8		14	500	0.20	9,500	500
MCI0603TM2N9_HBP	2.9		14	500	0.20	9,500	500
MCI0603TM3N0_HBP	3.0		14	500	0.25	9,500	450
MCI0603TM3N1_HBP	3.1		14	500	0.25	8,000	450
MCI0603TM3N2_HBP	3.2		14	500	0.25	8,000	450
MCI0603TM3N3_HBP	3.3		14	500	0.25	8,000	450
MCI0603TM3N4_HBP	3.4		14	500	0.25	7,000	450
MCI0603TM3N5_HBP	3.5		14	500	0.25	7,000	450

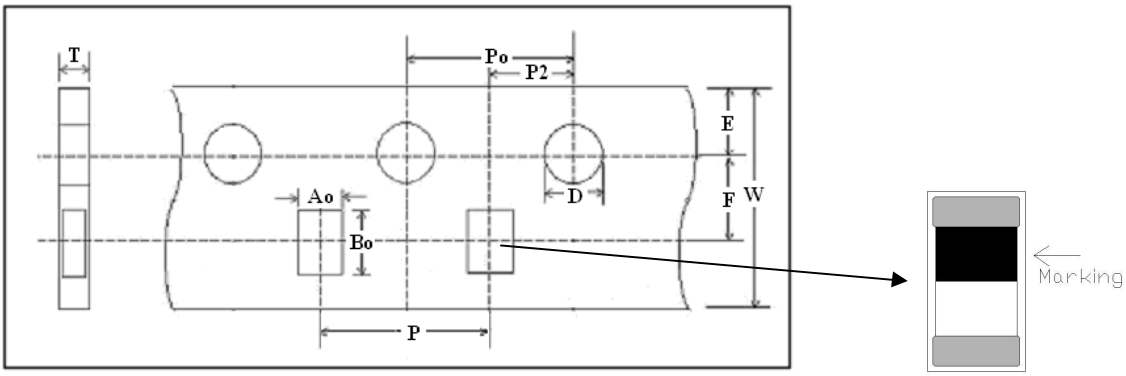
Part No.	Inductance (nH)	Inductance Tolerance	Q (Min.)	Freq. (MHz)	DCR(Ω) Max.	S.R.F (MHz) Min.	Rated Current (mA) Max.
MCI0603TM3N6_HBP	3.6	B：±0.1nH C：±0.2nH S：±0.3nH	14	500	0.30	6,000	400
MCI0603TM3N7_HBP	3.7		14	500	0.30	6,000	400
MCI0603TM3N8_HBP	3.8		14	500	0.30	6,000	400
MCI0603TM3N9_HBP	3.9		14	500	0.30	5,700	400
MCI0603TM4N0_HBP	4.0		14	500	0.40	5,300	350
MCI0603TM4N1_HBP	4.1		14	500	0.40	5,300	350
MCI0603TM4N2_HBP	4.2		14	500	0.40	5,300	350
MCI0603TM4N3_HBP	4.3	S：±0.3nH H：±3% J：±5%	14	500	0.40	5,300	350
MCI0603TM4N7_HBP	4.7		14	500	0.40	4,400	350
MCI0603TM5N1_HBP	5.1		14	500	0.40	4,200	350
MCI0603TM5N6_HBP	5.6		14	500	0.40	4,000	350
MCI0603TM6N2_HBP	6.2	H：±3% J：±5%	14	500	0.60	4,000	300
MCI0603TM6N8_HBP	6.8		14	500	0.60	3,900	300
MCI0603TM7N5_HBP	7.5		14	500	0.60	3,700	300
MCI0603TM8N2_HBP	8.2		14	500	0.70	3,600	250
MCI0603TM9N1_HBP	9.1		14	500	0.70	3,300	250
MCI0603TM10N_HBP	10		14	500	0.70	3,200	250
MCI0603TM11N_HBP	11		14	500	0.80	2,900	250
MCI0603TM12N_HBP	12		12	500	0.70	2,900	250
MCI0603TM13N_HBP	13		12	500	0.80	2,600	250
MCI0603TM15N_HBP	15		12	500	0.70	2,600	250
MCI0603TM16N_HBP	16		12	500	0.95	2,200	200
MCI0603TM18N_HBP	18		12	500	0.80	2,200	200
MCI0603TM20N_HBP	20		12	500	2.30	2,200	150
MCI0603TM22N_HBP	22		12	500	1.90	2,200	150
MCI0603TM24N_HBP	24		12	500	2.30	2,000	140
MCI0603TM27N_HBP	27		12	500	2.30	2,000	140
MCI0603TM30N_HBP	30		9	500	2.95	1,700	120
MCI0603TM33N_HBP	33		9	300	2.95	1,700	120
MCI0603TM36N_HBP	36		9	300	3.00	1,500	120
MCI0603TM39N_HBP	39		9	300	3.00	1,500	120

Part No.	Inductance (nH)	Inductance Tolerance	Q (Min.)	Freq. (MHz)	DCR(Ω) Max.	S.R.F (MHz) Min.	Rated Current (mA) Max.
MCI0603TM43N_HBP	43	H：±3% J：±5%	9	300	3.60	1,300	100
MCI0603TM47N_HBP	47		9	300	3.60	1,300	100
MCI0603TM51N_HBP	51		9	300	3.90	1,200	100
MCI0603TM56N_HBP	56		9	300	3.90	1,200	100
MCI0603TM62N_HBP	62		8	300	8.00	1,100	100
MCI0603TM68N_HBP	68		8	300	8.00	1,100	100
MCI0603TM75N_HBP	75		8	300	10.0	1,000	100

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

■ TAPE AND REEL SPECIFICATIONS

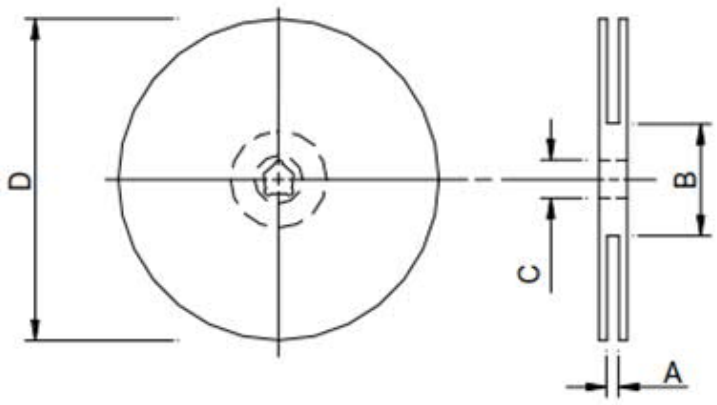
➢ Tape Dimension / 8mm width



➢ Taping Dimension

TYPE	**0603**
Symbol	paper
W	8.00 ± 0.30
P	2.00 ± 0.10
E	1.75 ± 0.05
F	3.50 ± 0.05
D	1.50 ~ 1.60
Po	4.00 ± 0.10
P2	2.00 ± 0.05
Ao	0.36 ± 0.02
Bo	0.66 ± 0.02
T	0.42 ± 0.02
Unit	mm

■ REEL DIMENSION

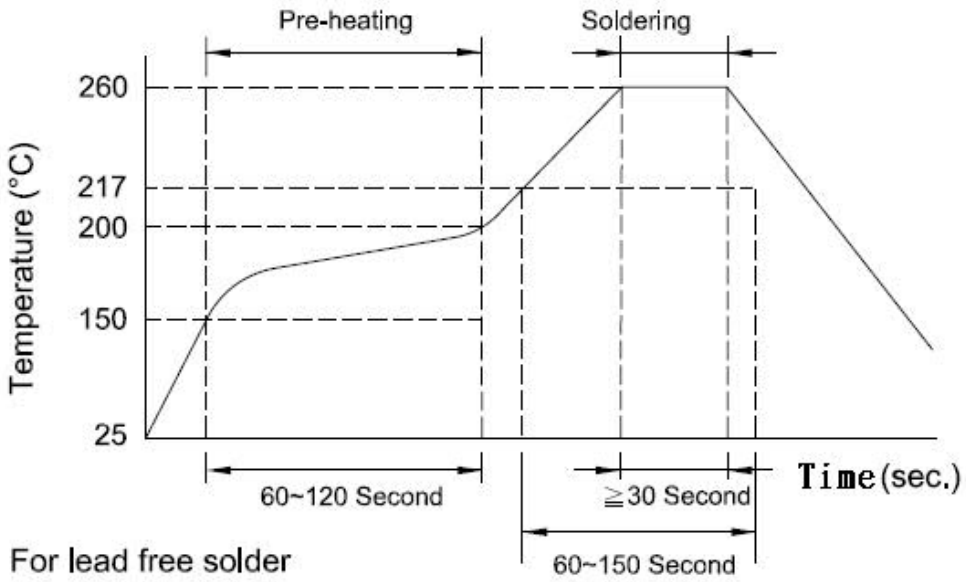


Type	A(mm)	B(mm)	C(mm)	D(mm)
7”	10±1.5	50 or more	13.2±1.0	178±2.0

■ STANDARD QUANTITY FOR PACKAGING

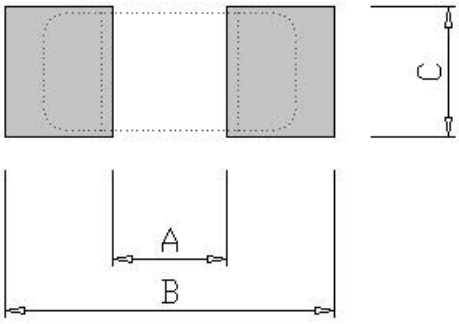
Packaging style：Taping
Reel packaging quantity：**15,000** pcs/reel
Per the box：5 Reels

■ RECOMMENDED SOLDERING CONDITIONS



■ LAND PATTERNS REFLOW SOLDERING

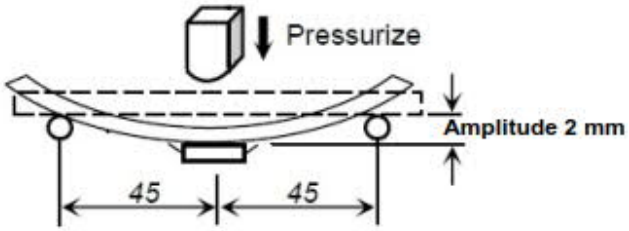
Solder land information：



Size(mm)	A	B	C
0603 (EIA 0201)	0.20 ～ 0.30 (0.008 ～ 0.012)	0.80 ～ 0.90 (0.031 ～ 0.035)	0.20 ～ 0.30 (0.008 ～ 0.012)

■ 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: 125 ± 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.