



INPAQ

PRODUCT SPECIFICATION

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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!

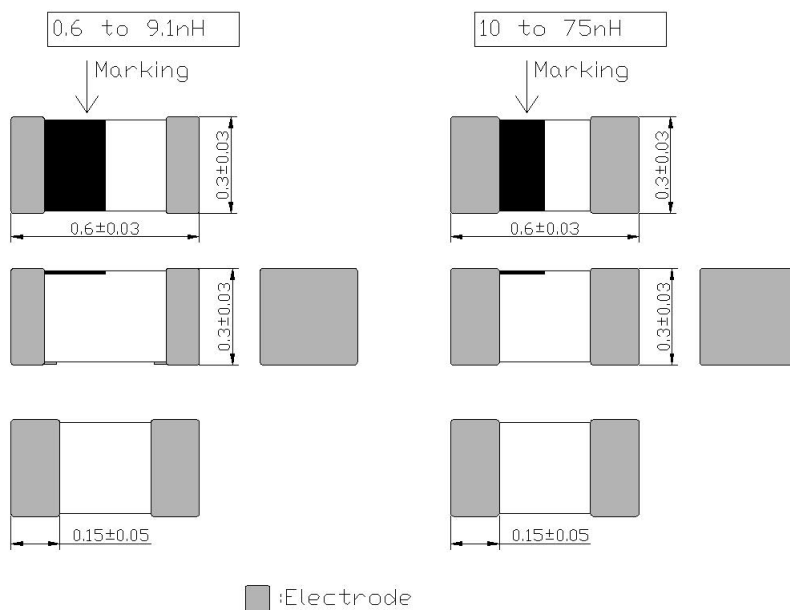
■ FEATURES

- 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

<u>MCI</u>	<u>0603</u>	<u>TM</u>	<u>1N0</u>	<u>B</u>	<u>H</u>	<u>B</u>	<u>P</u>	<u>DG</u>
1	2	3	4	5	6	7	8	9

- 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 = $\pm 0.1\text{nH}$, C = $\pm 0.2\text{nH}$, S = $\pm 0.3\text{nH}$, H = $\pm 3\%$, J = $\pm 5\%$
- 6 Mark : H = 1/8 Mark , M = 1/4 Mark , N = No Mark
- 7 Internal Code
- 8 Packaging : P = Paper tape, 7" reel
- 9 INPAQ internal code

■ GENERAL TECHNICAL DATA

Operating temperature range : - 55°C ~ +125°C
 Storage Condition : Less than 40°C 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

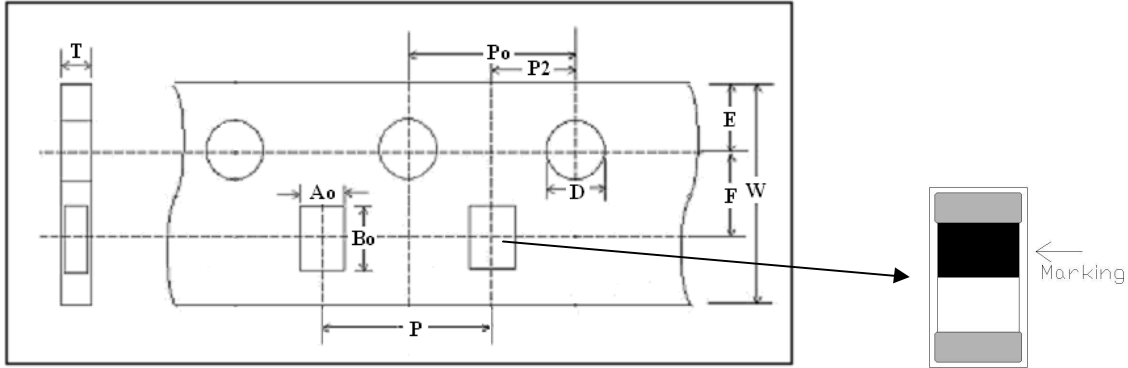
■ PART NUMBER AND CHARACTERISTICS TABLE

Part No.	Inductance (nH)	Inductance Tolerance	Q (Min.)	Freq. (MHz)	DCR (Ω) Max.	S.R.F (MHz) Min.	Rated Current (mA) Max.
MCI0603TM0N6BHBPDG	0.6	± 0.1 nH	14	500	0.07	20,000	850
MCI0603TM0N7BHBPDG	0.7	± 0.1 nH	14	500	0.08	20,000	800
MCI0603TM1N0BHBPDG	1.0	± 0.1 nH	14	500	0.10	17,000	750
MCI0603TM1N2BHBPDG	1.2	± 0.1 nH	14	500	0.10	17,000	750
MCI0603TM1N5BHBPDG	1.5	± 0.1 nH	14	500	0.15	15,000	600
MCI0603TM2N2BHBPDG	2.2	± 0.1 nH	14	500	0.15	11,000	600
MCI0603TM2N7BHBPDG	2.7	± 0.1 nH	14	500	0.20	10,000	500
MCI0603TM3N3BHBPDG	3.3	± 0.1 nH	14	500	0.25	8,000	450
MCI0603TM3N9BHBPDG	3.9	± 0.1 nH	14	500	0.30	5,700	400
MCI0603TM4N3HHBPDG	4.3	$\pm 3\%$	14	500	0.40	5,300	350
MCI0603TM4N7HHBPDG	4.7	$\pm 3\%$	14	500	0.40	4,400	350
MCI0603TM5N1HHBPDG	5.1	$\pm 3\%$	14	500	0.40	4,200	350
MCI0603TM6N2HHBPDG	6.2	$\pm 3\%$	14	500	0.60	4,000	300
MCI0603TM7N5HHBPDG	7.5	$\pm 3\%$	14	500	0.60	3,700	300
MCI0603TM8N2HHBPDG	8.2	$\pm 3\%$	14	500	0.70	3,600	250
MCI0603TM9N1HHBPDG	9.1	$\pm 3\%$	14	500	0.70	3,300	250
MCI0603TM10NHHBPDG	10	$\pm 3\%$	14	500	0.70	3,200	250
MCI0603TM15NHHBPDG	15	$\pm 3\%$	12	500	0.70	2,600	250
MCI0603TM18NHHBPDG	18	$\pm 3\%$	12	500	0.80	2,200	200

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

■ TAPE AND REEL SPECIFICATIONS

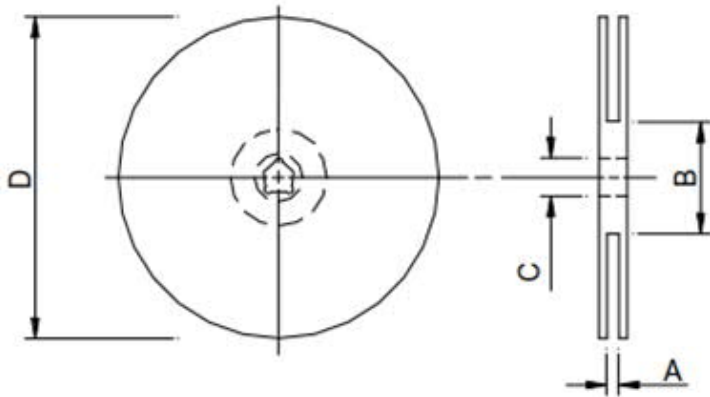
➤ Tape Dimension / 8mm width



➤ 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

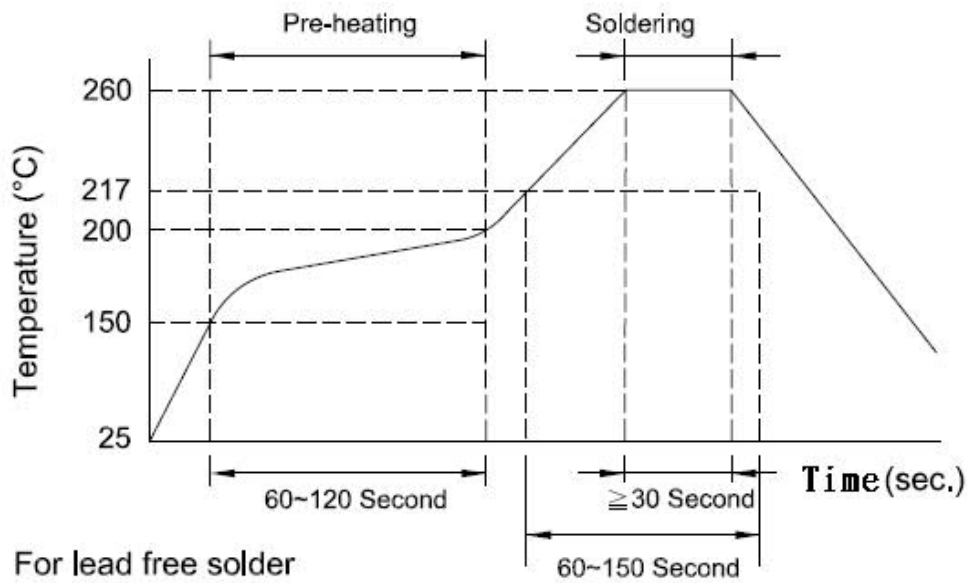
■ STANDARD QUANTITY FOR PACKAGING

Packaging style : Taping

Reel packaging quantity : **15,000** pcs/reel

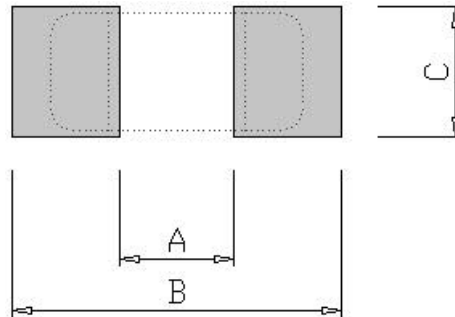
Per the box : 5 Reels

■ RECOMMENDED SOLDERING CONDITIONS



■ LAND PATTERNS REFLOW SOLDERING

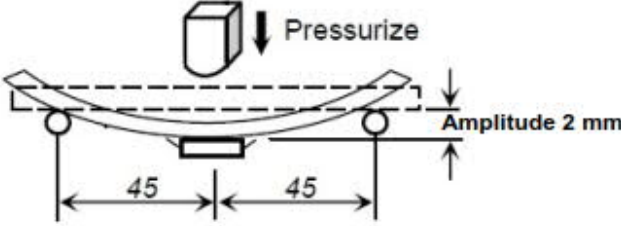
Solder land information :



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°C 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 $\pm 10\%$ of the initial value 3. Q value should be within $\pm 20\%$ of the initial value
Operational Life	1. Temperature: 125 \pm 5°C 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 $\pm 10\%$ of the initial value 3. Q value should be within $\pm 20\%$ of the initial value
Biased Humidity	1. Temperature : 40°C \pm 2°C 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 $\pm 10\%$ of the initial value 3. Q value should be within $\pm 20\%$ of the initial value
Resistance to Solder Heat	1. Solder temperature : 260 \pm 5°C 2. Flux : Rosin 3. DIP time : 10 \pm 1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. Inductance value should be within $\pm 10\%$ of the initial value 3. Q value should be within $\pm 20\%$ of the initial value
Solderability	1. Solder temperature : 235 \pm 5°C 2. Flux : Rosin 3. DIP time : 5 \pm 1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage

Item	Test Condition	Requirements
<p>Bending Strength</p>	<p>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.</p> 	<p>No mechanical damage</p>

■ **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.