PRODUCT SPECIFICATION

DOCUMENT NO.ENS000119150				
DESCRIPTION	**DRAWN BY**	**DESIGNED BY**	**CHECKED BY**	**APPROVED BY**
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High Frequency Chip Ceramic Inductor (MCI-TG 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!

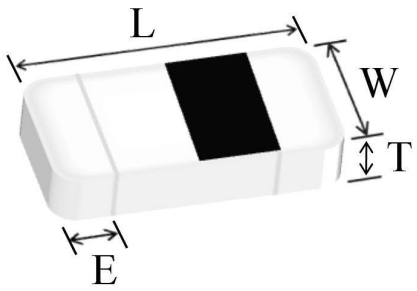
■ FEATURES

- 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



TYPE	060303 (EIA 0201)
L	0.6±0.03
W	0.3±0.03
T	0.3±0.03
E	0.10~0.20
Unit	mm

■ PART NUMBER CODE

MCI	0603	TG	1N0	□	H	B	P	DG
1	2	3	4	5	6	7	8	9

1 Series Name
2 Dimensions L*W
3 TG：material code
4 Inductance(nH)：N means Decimal point , ex：1.0 nH = 1N0
5 Tolerance : B = ±0.1nH，C = ±0.2nH，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
9 INPAQ internal code

■ GENERAL TECHNICAL DATA

Operating temperature range：- 55℃~ +125℃
Storage Condition：Less than 40℃ and 70% RH
Storage Time：6 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：500 mV

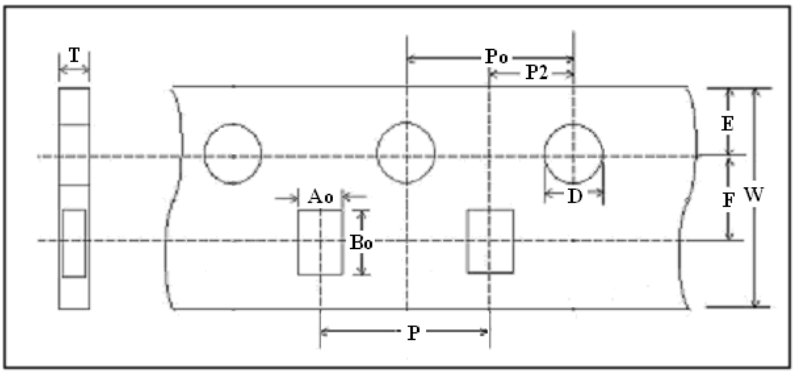
■ PART NUMBER AND CHARACTERISTICS TABLE

Part No.	Inductance (nH)	Inductance Tolerance	Q (Min.)	Freq. (MHz)	DCR (Ω) Max.	S.R.F (MHz) Min.	Rated Current (mA) Max.
MCI0603TG1N0BHBPDG	1.0	±0.1nH	12	500	0.14	17,000	600
MCI0603TG1N5BHBPDG	1.5	±0.1nH	12	500	0.15	13,500	600
MCI0603TG2N0BHBPDG	2.0	±0.1nH	12	500	0.20	12,500	450
MCI0603TG2N2BHBPDG	2.2	±0.1nH	12	500	0.22	12,000	450
MCI0603TG2N7BHBPDG	2.7	±0.1nH	12	500	0.25	11,000	450
MCI0603TG3N0BHBPDG	3.0	±0.1nH	12	500	0.25	9,500	450
MCI0603TG3N3BHBPDG	3.3	±0.1nH	12	500	0.30	9,500	400
MCI0603TG3N6BHBPDG	3.6	±0.1nH	12	500	0.30	8,000	400
MCI0603TG3N9BHBPDG	3.9	±0.1nH	12	500	0.35	6,500	350
MCI0603TG4N3HHBPDG	4.3	±3%	12	500	0.40	6,500	350
MCI0603TG5N1HHBPDG	5.1	±3%	12	500	0.40	6,500	350
MCI0603TG6N2HHBPDG	6.2	±3%	12	500	0.50	6,000	300
MCI0603TG7N5HHBPDG	7.5	±3%	12	500	0.55	4,800	250
MCI0603TG8N2HHBPDG	8.2	±3%	12	500	0.62	4,800	250
MCI0603TG10NHHBPDG	10	±3%	11	500	0.70	4,000	250
MCI0603TG12NHHBPDG	12	±3%	11	500	0.75	3,700	250
MCI0603TG18NJHBPDG	18	±5%	11	500	1.00	2,800	200
MCI0603TG22NHHBPDG	22	±3%	9	500	1.20	2,500	150

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

■ TAPE AND REEL SPECIFICATIONS

➢ Tape Dimension / 8mm

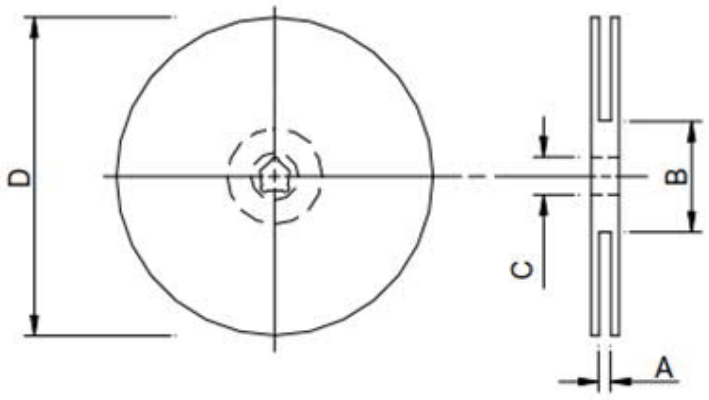


➢ Taping Dimension

Unit：mm

TYPE	**0603**
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	0.36 ± 0.02
Bo	0.66 ± 0.02
T	0.42 ± 0.02

■ REEL DIMENSION

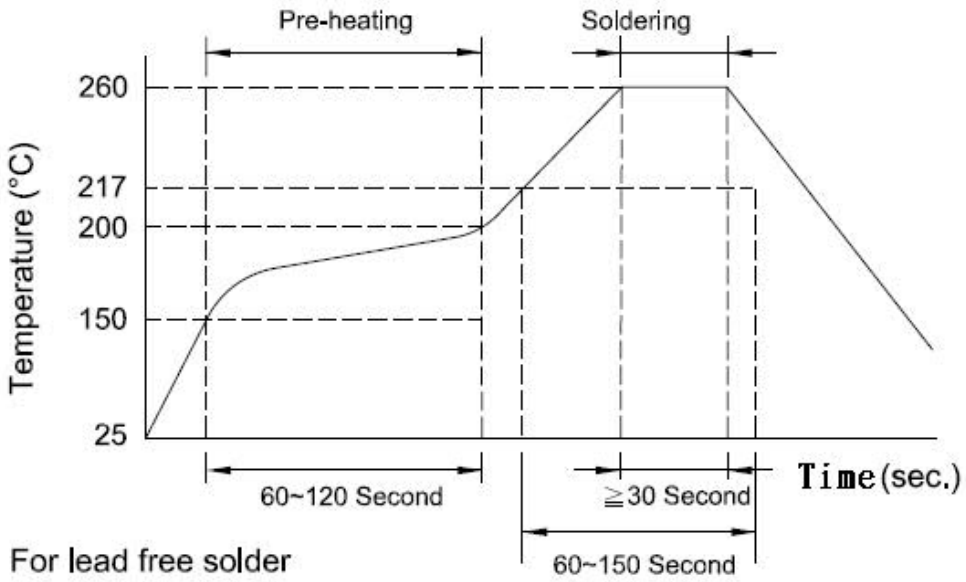


Type	A(mm)	B(mm)	C(mm)	D(mm)
7”	10±1.5	50 or more	13.2±1.0	178±2.0

■ STANDARD QUANTITY FOR PACKAGING

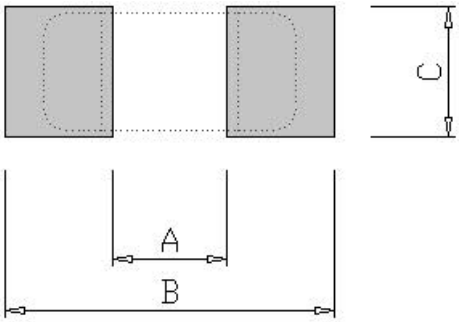
Packaging style：Taping
Reel packaging quantity：**15,000** pcs/reel
Per the box：5 Reels

■ RECOMMENDED SOLDERING CONDITIONS



■ LAND PATTERNS REFLOW SOLDERING

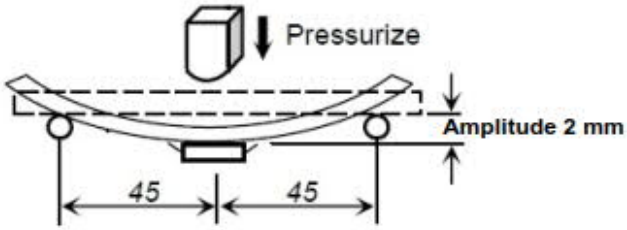
Solder land information：



TYPE (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 vale 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 vale 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 vale 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 vale 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.