



SPECIFICATION FOR APPROVAL

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PRODUCT DETAIL

Electrical Characteristics			Test Instruments
L	nH (See Page 8~10)	TEST FREQ: (See Page 8~10) MHz	•MCI0603: MEASURING EQUIPMENT: HP4287+16196C •MCI1005: MEASURING EQUIPMENT: HP4287+16193A •MCI1608: MEASURING EQUIPMENT: HP4291B+16192A •HP4291B - RF IMPEDANCE / MATERIAL ANALYZER •HP4338A/B MILLIOHM METER •Agilent 8720ES S-PARA METER NETWORK ANALYZER •HP6632B SYSTEM DC POWER SUPPLY
Q	(min) (See Page 8~10)	TEST LEVEL: 1V	
SRF	MHz (min) (See Page 8~10)	OPERATING TEMP:	
DCR	Ω (See Page 8~10)	MCI0603/1005: -55°C~+125°C	
IDC	mA (See Page 8~10)	MCI1608: -40°C~+85°C	

SHAPES AND DIMENSIONS



TYPE	0603	1005	1608
L	0.6±0.03	1.0±0.10	1.6±0.15
W	0.3±0.03	0.5±0.10	0.8±0.15
T	0.3±0.03	0.5±0.10	0.8±0.15
E	0.10/0.20	0.25±0.1	0.3±0.20



PART NUMBER CODE

<u>MCI</u>	<u>1608</u>	<u>HQ</u>	<u>1N0</u>	<u>S</u>	<u>A</u>
1	2	3	4	5	6

1. Series Name

2. Size Code

the first two digitals : length(mm), the last two digitals : width(mm)

3. HQ=High Q Value

4. Inductance(N=decimal point) Unit : nH

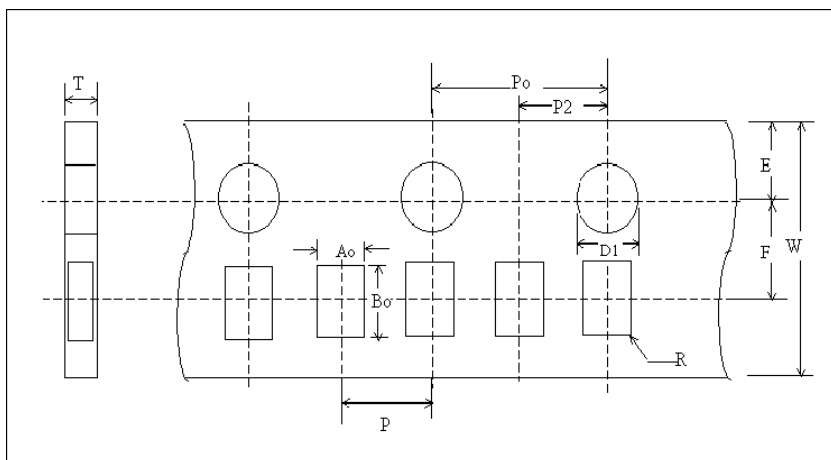
5. Tolerance : S= $\pm 0.3\text{nH}$; J= $\pm 5\%$; K= $\pm 10\%$.

6. Soldering : A=Lead free



TAPE DIMENSIONS

PAPER CARRIER



TAPING DIMENSION

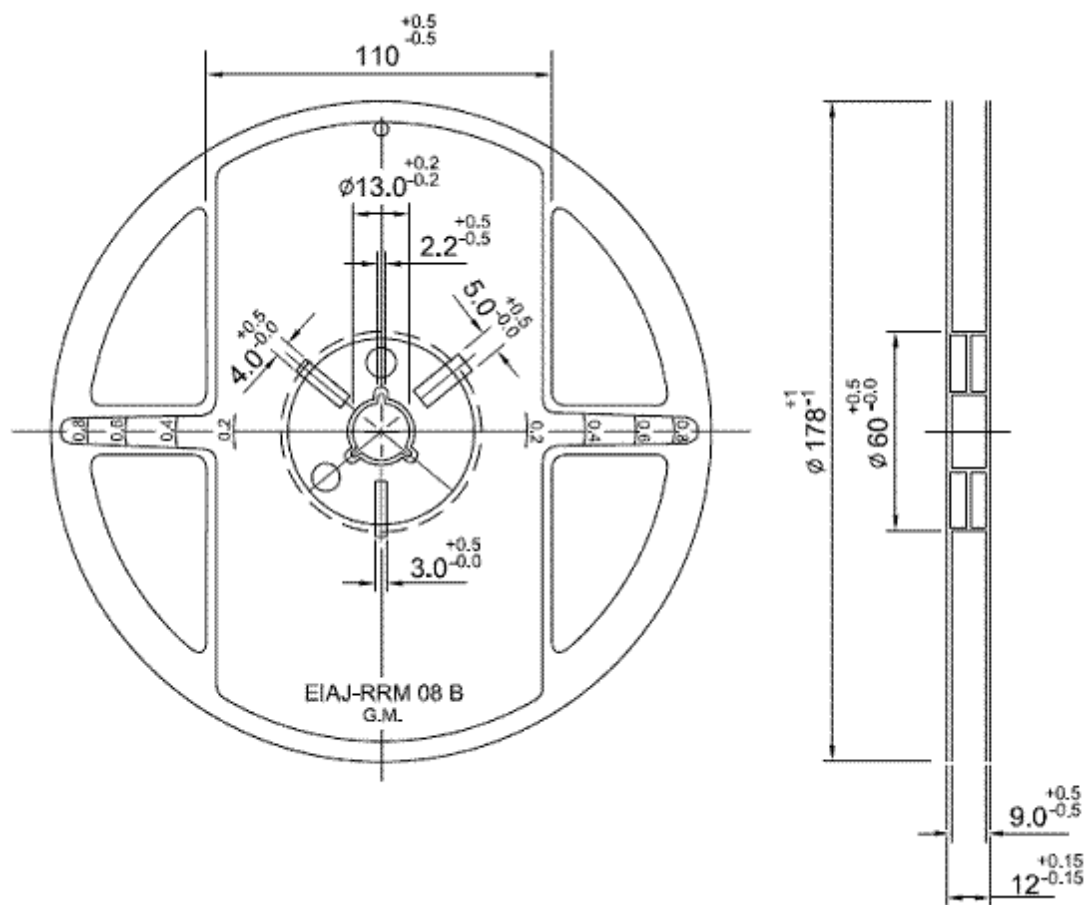
Unit:mm

	0603	1005	1608
TAPE	PAPER	PAPER	PAPER
W	8.0 ±0.1	8.0±0.1	8.0±0.1
P	2.0 ±0.10	2.0±0.05	2.0±0.05
E	1.75 ±0.05	1.75±0.05	1.75±0.05
F	3.5 ±0.05	3.5±0.05	3.5±0.05
D	1.55 ±0.05	1.55±0.05	1.50±0.1
D1	NA	NA	NA
Po	4.0 ±0.1	4.0±0.05	4.0±0.1
Po10	NA	NA	NA
P2	2.0 ±0.05	2.0±0.05	2.0±0.05
Ao	0.38 ±0.04	0.62±0.03	1.05±0.05
Bo	0.68 ±0.04	1.12±0.03	1.85±0.05
Ko(T)	0.60 ±0.03	0.60±0.05	0.95±0.05
t	NA	NA	NA



REEL DIMENSIONS

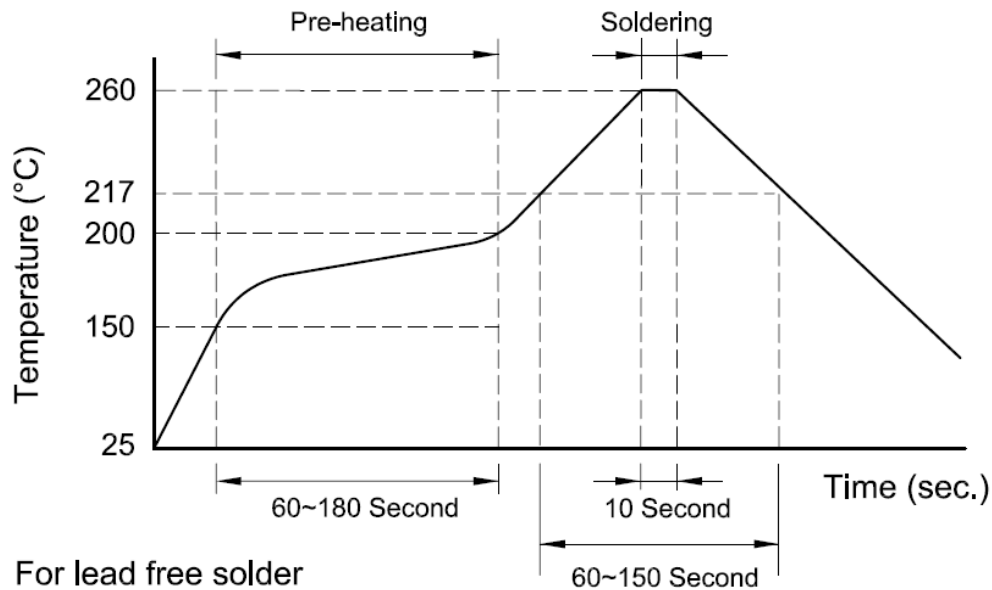
Unit: mm



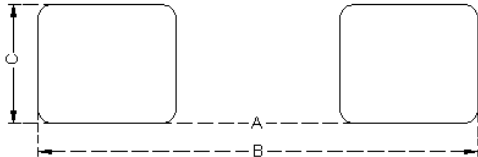
Reel Packaging Quantity				
PART SIZE		0603	1005	1608
7" REEL	Qty. (pcs)	15,000	10,000	4,000



RECOMMENDED SOLDERING CONDITIONS



LAND PATTERNS FOR REFLOW SOLDERING



SOLDER LAND INFORMATION

Unit: mm (inches)

Size	A	B	C
0603	0.15~0.35 (0.006~0.014)	0.55~0.95 (0.022~0.037)	0.25~0.30 (0.010~0.012)
1005	0.4 ~ 0.6 (0.015 ~ 0.023)	1.6 ~ 2.6 (0.063 ~ 0.102)	0.4 ~ 0.7 (0.016 ~ 0.027)
1608	0.5 ~ 0.7 (0.019 ~ 0.027)	2.1 ~ 3.1 (0.083 ~ 0.122)	0.65 ~ 0.95 (0.026 ~ 0.037)



RELIABILITY AND TEST CONDITION

Stress	Performance	Test Condition
Resistance to Solder Heat	The chip should not crack; More than 90% of the terminal electrode should be covered with solder, free from defects, chip body should not expose.	1. Solder: SHEN MAU (Sn60A-B20) 2.Solder Temp: 265 ±5℃ 3.Flux: Rosin 4.Dip time: 10 ±1 sec
Solder ability 1 (IR Re-flow test)	1.Sn cover area need to over half thickness of chip 2.Chip shift distance under 50% of width 3.No short, open,...etc defect symptom	For Lead Process 1.Solder: Alpha (63Sn/37Pb) 2.General:135/135/195/235℃ For Lead-free Process 1.Solder: Alpha (SAC305) 2.100%TIN:155/155/220/250℃ 3.Sn:Ag:Cu=96.5:3:0.5
Solder ability 2 (After steam 8 hrs)	More than 90% of the terminal electrode should be covered with new solder	1.Steam 8 hrs 2.Solder: SHEN MAU (Sn60A-B20) 3.Solder Temp.:235 ±5℃ 4.Flux: Rosin 5.Dip time:5 ±1 sec
Terminal Strength	The terminal electrode should not peel off	100505>0.2kgt, 160808>0.3kgt, ; pulling time:30 ±5 sec
Bending Strength	The body should not be damaged by force applied on the right	100505>0.2kgf, 160808>0.3kgf,
Flexure Strength	No mechanical damage shall be noticed even when the board is bent 2 mm (0.079 inches)	1. At ambient temperature & Humidity 2.To bend 2 mm
Thermal Shock (Temperature Cycle)	1. No mechanical damage 2. Inductance should be within ±10% of the initial value 3.Q value should be within ±30% of the initial value 4.Impedance value should be within ±20% of the initial value	1. Temperature:-40 ~ 85℃ For 30 minutes each 2. Cycle: 100 cycles 3. Measurement: At ambient temperature 24 hours after test completion



Stress	Performance	Test Condition
Operational Life	1.No mechanical damage 2.Inductance should be within $\pm 10\%$ of the initial value 3.Q value should be within $\pm 30\%$ of the initial value 4.Impedance value should be within $\pm 20\%$ of the initial value	1. Temperature: $125 \pm 5^{\circ}\text{C}$ 2. Testing time: 1000 hrs 3. Applied current: Full rated current 4. Measurement: At ambient temperature 24 hours after test completion
Biased Humidity	1.No mechanical damage 2.Inductance should be within $\pm 10\%$ of the initial value 3.Q value should be within $\pm 30\%$ of the initial value 4.Impedance value should be within $\pm 20\%$ of the initial value	1.Temperature: 40°C 2.Humidity: 90-95 % RH 3. Applied current: Full rated current 4.Testing time: 1000 hrs 5. Measurement: At ambient temperature 24 hours after test completion
Rated Current	1. MCB / MFI / MCI product Surface temperature below room temperature plus 10°C 2. MHC product surface temp. below room temperature plus 40°C	1. At ambient temperature & humidity 2. Testing time: 5 minutes (under full rated current)

GENERAL TECHNICAL DATA

Operating temperature range : $- 55^{\circ}\text{C} \sim +125^{\circ}\text{C}$

Storage temperature (on board): $- 40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

Storage Condition : Less than 40°C and 70% RH

Storage Time: 12 months Max.

Soldering method: Reflow or Wave Soldering



PART NUMBER AND CHARACTERISTICS TABLE

MCI0603HQ SERIES

Ordering Code	Inductance (nH)	Q Min.	L, Q Measuring Frequency (MHz)	Q(Typical) (MHz)			SRF (MHz) Min.	DC Resistance (Ω) Max.	Rated Current (mA) Max.	Packing Amount of 7" reel (Pcs.)
				100	500	800				
MCI0603HQ1N0SA	1	4	100	5	21	26	10000	0.2	250	15,000
MCI0603HQ1N2SA	1.2	4	100	5	23	26	10000	0.2	250	
MCI0603HQ1N5SA	1.5	4	100	5	25	30	9000	0.3	230	
MCI0603HQ1N8SA	1.8	4	100	5	25	30	8500	0.3	200	
MCI0603HQ2N2SA	2.2	4	100	5	23	28	7500	0.35	200	
MCI0603HQ2N7SA	2.7	4	100	5	21	25	6500	0.35	200	
MCI0603HQ3N3SA	3.3	4	100	5	22	27	5500	0.4	180	
MCI0603HQ3N9SA	3.9	4	100	5	19	24	5000	0.4	170	
MCI0603HQ4N7SA	4.7	4	100	6	19	23	4500	0.45	150	
MCI0603HQ5N6SA	5.6	5	100	6	20	25	4200	0.45	150	
MCI0603HQ6N8JA	6.8	5	100	6	19	23	3500	0.5	150	
MCI0603HQ8N2JA	8.2	5	100	6	22	26	3200	0.55	150	
MCI0603HQ10NJA	10	5	100	6	18	21	2800	0.65	150	
MCI0603HQ12NJA	12	5	100	6	18	22	2400	0.7	100	
MCI0603HQ15NJA	15	5	100	6	19	22	2200	0.8	100	
MCI0603HQ18NJA	18	5	100	7	20	24	2000	0.9	100	
MCI0603HQ22NJA	22	5	100	7	22	25	1800	1.2	100	
MCI0603HQ27NJA	27	5	100	7	22	25	1800	1.8	50	
MCI0603HQ33NJA	33	5	100	6	19	21	1700	2.1	50	
MCI0603HQ39NJA	39	5	100	6	21	23	1500	2.4	50	



MCI1005HQ SERIES

Ordering Code	Inductance (nH)	Q Min.	L, Q Measuring Frequency (MHz)	Q(Typical) (MHz)			SRF (MHz) Min.	DC Resistance (Ω) Max.	Rated Current (mA) Max.	Packing Amount of 7" reel (Pcs.)
				100	500	800				
MCI1005HQ1N0SA	1	8	100	11	33	43	10000	0.12	300	10,000
MCI1005HQ1N1SA	1.1	8	100	11	33	43	10000	0.12	300	
MCI1005HQ1N2SA	1.2	8	100	11	33	43	10000	0.12	300	
MCI1005HQ1N3SA	1.3	8	100	11	33	43	10000	0.13	300	
MCI1005HQ1N5SA	1.5	8	100	11	33	43	6000	0.13	300	
MCI1005HQ1N6SA	1.6	8	100	11	31	41	6000	0.14	300	
MCI1005HQ1N8SA	1.8	8	100	11	31	41	6000	0.14	300	
MCI1005HQ2N0SA	2	8	100	11	26	36	6000	0.16	300	
MCI1005HQ2N2SA	2.2	8	100	11	26	36	6000	0.16	300	
MCI1005HQ2N4SA	2.4	8	100	11	26	36	6000	0.17	300	
MCI1005HQ2N7SA	2.7	8	100	12	29	38	6000	0.17	300	
MCI1005HQ3N0SA	3	8	100	11	28	37	6000	0.19	300	
MCI1005HQ3N3SA	3.3	8	100	11	28	37	6000	0.19	300	
MCI1005HQ3N6SA	3.6	8	100	11	26	32	5000	0.22	300	
MCI1005HQ3N9SA	3.9	8	100	11	26	32	4000	0.22	300	
MCI1005HQ4N3SA	4.3	8	100	11	26	32	4000	0.24	300	
MCI1005HQ4N7SA	4.7	8	100	12	28	37	4000	0.24	300	
MCI1005HQ5N1SA	5.1	8	100	11	26	35	4000	0.27	300	
MCI1005HQ5N6SA	5.6	8	100	11	26	35	4000	0.27	300	
MCI1005HQ6N2SA	6.2	8	100	11	26	34	3900	0.32	300	
MCI1005HQ6N8JA	6.8	8	100	11	26	34	3900	0.32	300	
MCI1005HQ7N5JA	7.5	8	100	11	26	34	3700	0.35	300	
MCI1005HQ8N2JA	8.2	8	100	12	26	34	3500	0.37	300	
MCI1005HQ9N1JA	9.1	8	100	11	25	31	3400	0.4	300	
MCI1005HQ10NJA	10	8	100	11	25	31	3200	0.42	300	
MCI1005HQ12NJA	12	8	100	11	25	31	2600	0.5	300	
MCI1005HQ15NJA	15	8	100	11	24	30	2300	0.55	300	
MCI1005HQ18NJA	18	8	100	11	24	30	2000	0.65	300	
MCI1005HQ22NJA	22	8	100	12	24	30	1600	0.8	300	
MCI1005HQ27NJA	27	8	100	11	24	28	1400	0.9	300	
MCI1005HQ33NJA	33	8	100	12	23	26	1200	1	200	
MCI1005HQ39NJA	39	8	100	11	21	24	1100	1.2	200	
MCI1005HQ47NJA	47	8	100	11	21	23	900	1.3	200	
MCI1005HQ56NJA	56	8	100	12	21	21	750	1.4	200	
MCI1005HQ68NJA	68	8	100	11	19	19	750	1.4	180	
MCI1005HQ82NJA	82	8	100	10	19	16	600	1.6	150	
MCI1005HQR10JA	100	8	100	10	18	-	600	1.6	150	
MCI1005HQR12JA	120	8	100	11	15	-	600	1.6	150	
MCI1005HQR15JA	150	8	100	11	14	-	550	3.2	140	



MCI1608HQ SERIES

Ordering Code	Inductance (nH)	Q Min.	L, Q Measuring Frequency (MHz)	Q(Typical) (MHz)			SRF (MHz) Min.	DC Resistance (Ω) Max.	Rated Current (mA) Max.	Packing Amount of 7" reel (Pcs.)
				100	500	800				
MCI1608HQ1N0SA	1	8	100	14	34	47	6000	0.1	1000	4,000
MCI1608HQ1N2SA	1.2	8	100	13	32	49	6000	0.1	1000	
MCI1608HQ1N5SA	1.5	8	100	14	34	47	6000	0.1	1000	
MCI1608HQ1N8SA	1.8	8	100	17	40	55	6000	0.1	1000	
MCI1608HQ2N2SA	2.2	8	100	15	38	49	6000	0.1	1000	
MCI1608HQ2N7SA	2.7	10	100	14	37	48	6000	0.13	1000	
MCI1608HQ3N3SA	3.3	10	100	16	40	51	6000	0.13	1000	
MCI1608HQ3N9SA	3.9	10	100	14	36	48	6000	0.15	1000	
MCI1608HQ4N7SA	4.7	10	100	14	37	48	4000	0.2	1000	
MCI1608HQ5N6SA	5.6	10	100	14	36	46	4000	0.23	600	
MCI1608HQ6N8JA	6.8	10	100	15	37	48	4000	0.25	600	
MCI1608HQ8N2JA	8.2	10	100	16	39	50	3500	0.28	600	
MCI1608HQ10NJA	10	12	100	16	37	47	3200	0.3	600	
MCI1608HQ12NJA	12	12	100	15	36	45	2600	0.35	600	
MCI1608HQ15NJA	15	12	100	16	38	48	2300	0.4	600	
MCI1608HQ18NJA	18	12	100	17	38	47	2000	0.45	600	
MCI1608HQ22NJA	22	12	100	18	40	49	1600	0.5	600	
MCI1608HQ27NJA	27	12	100	18	40	47	1400	0.55	600	
MCI1608HQ33NJA	33	12	100	17	40	46	1200	0.6	600	
MCI1608HQ39NJA	39	12	100	19	40	46	1100	0.65	500	
MCI1608HQ47NJA	47	12	100	17	36	39	900	0.7	500	
MCI1608HQ56NJA	56	12	100	18	36	37	900	0.75	500	
MCI1608HQ68NJA	68	12	100	18	35	36	700	0.85	400	
MCI1608HQ82NJA	82	12	100	18	33	29	600	0.95	300	
MCI1608HQR10JA	100	12	100	18	28	16	600	1	300	
MCI1608HQR12JA	120	8	50	19	28	17	500	1.2	300	
MCI1608HQR15JA	150	8	50	13	17	-	500	1.2	300	
MCI1608HQR18JA	180	8	50	13	16	-	400	1.3	300	
MCI1608HQR22JA	220	8	50	15	13	-	400	1.5	300	
MCI1608HQR27JA	270	8	50	15	-	-	400	1.9	150	
MCI1608HQR33JA	330	8	50	15	-	-	350	2.1	150	
MCI1608HQR39JA	390	8	50	14	-	-	350	2.3	150	

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