

# MULTILAYER CHIP CERAMIC INDUCTORS



1.0 x 0.6 x 0.5 mm

AIMC-0402HQ



RoHS  
Compliant

## FEATURES:

- High self-resonant frequency
- Multilayer monolithic construction yields high reliability
- Excellent solderability & heat resistance for reflow soldering
- Extremely high Q value

## APPLICATIONS:

- Bluetooth
- Mobile phones such as GSM, CDMA, PDC
- High frequency telecommunication circuits
- Other high frequency circuit general use

## STANDARD SPECIFICATIONS:

### PARAMETERS

ABRACON P/N:	AIMC-0402HQ
Operating temperature:	-55°C to + 125°C
Storage temperature:	-10°C ~ +40°C and 70% R.H. max.

Part Number	L (nH)	Tolerance	Q	L, Q Test. Freq (MHz)	Q (Typ.) Freq. (MHz)				S.R.F (MHz)	DCR (Ω)	Ir (mA)	Inductance Code
					100	250	900	1800				
AIMC-0402HQ-1N0	1.0	B, C, S	20	250	13	22	48	75	6000	0.05	1000	1N0
AIMC-0402HQ-1N2	1.2	B, C, S	20	250	13	22	48	75	6000	0.05	1000	1N2
AIMC-0402HQ-1N5	1.5	B, C, S	20	250	13	22	58	76	6000	0.05	1000	1N5
AIMC-0402HQ-1N8	1.8	B, C, S	20	250	13	22	49	78	6000	0.07	800	1N8
AIMC-0402HQ-2N0	2.0	B, C, S	20	250	14	23	49	82	6000	0.07	800	2N0
AIMC-0402HQ-2N2	2.2	B, C, S	20	250	14	23	49	82	6000	0.07	800	2N2
AIMC-0402HQ-2N4	2.4	B, C, S	20	250	14	23	47	78	6000	0.07	800	2N4
AIMC-0402HQ-2N5	2.5	B, C, S	20	250	14	23	47	78	6000	0.07	800	2N5
AIMC-0402HQ-2N7	2.7	B, C, S	20	250	14	23	48	82	6000	0.09	700	2N7
AIMC-0402HQ-2N9	2.9	B, C, S	20	250	14	23	48	82	6000	0.09	700	2N9
AIMC-0402HQ-3N0	3.0	B, C, S	20	250	14	23	50	84	6000	0.09	700	3N0
AIMC-0402HQ-3N3	3.3	B, C, S	20	250	14	24	52	90	6000	0.09	700	3N3
AIMC-0402HQ-3N6	3.6	B, C, S	20	250	15	24	55	95	6000	0.10	700	3N6
AIMC-0402HQ-3N9	3.9	B, C, S	20	250	15	25	50	89	6000	0.10	700	3N9
AIMC-0402HQ-4N1	4.1	B, C, S	20	250	15	25	49	86	6000	0.12	650	4N1
AIMC-0402HQ-4N3	4.3	B, C, S	20	250	15	25	49	86	6000	0.13	600	4N3
AIMC-0402HQ-4N7	4.7	B, C, S	20	250	15	26	50	88	6000	0.13	600	4N7
AIMC-0402HQ-5N1	5.1	B, C, S	20	250	15	26	49	84	5500	0.13	600	5N1
AIMC-0402HQ-5N6	5.6	B, C, S	20	250	15	27	50	84	5500	0.13	600	5N6
AIMC-0402HQ-5N8	5.8	B, C, S	20	250	15	27	50	82	5500	0.13	600	5N8
AIMC-0402HQ-6N2	6.2	B, C, S	20	250	15	27	50	80	5500	0.14	550	6N2
AIMC-0402HQ-6N8	6.8	G, H, J	22	250	15	27	55	89	5000	0.15	550	6N8
AIMC-0402HQ-7N3	7.3	G, H, J	22	250	15	27	54	90	5000	0.16	550	7N3
AIMC-0402HQ-7N5	7.5	G, H, J	22	250	15	27	54	90	5000	0.16	550	7N5
AIMC-0402HQ-8N2	8.2	G, H, J	22	250	15	27	56	84	5000	0.16	550	8N2
AIMC-0402HQ-8N7	8.7	G, H, J	22	250	15	27	53	80	5000	0.17	500	8N7
AIMC-0402HQ-9N1	9.1	G, H, J	22	250	15	27	53	79	4500	0.18	500	9N1
AIMC-0402HQ-9N5	9.5	G, H, J	22	250	15	27	52	77	4500	0.18	500	9N5
AIMC-0402HQ-10N	10	G, H, J	22	250	16	29	52	75	4500	0.18	500	10N
AIMC-0402HQ-11N	11	G, H, J	22	250	16	28	52	71	4000	0.20	500	11N
AIMC-0402HQ-12N	12	G, H, J	22	250	16	29	51	68	4000	0.20	500	12N
AIMC-0402HQ-15N	15	G, H, J	22	250	16	29	50	60	4000	0.22	430	15N

### Test Conditions:

- Ambient Temperature: 20± 15°C
- Relative Humidity: 65%±20%
- Air Pressure: 86KPa to 106KPa

Inductance (L) & Q Factor (Q): High Accuracy RF Impedance/Material Analyzer-E4991A+HP16197A or Equiv., -20dBm/50mV

Direct Current Resistance (DCR): High Accuracy Milliohmeter-HP4338B or Equiv.

Self-Resonant Frequency (SRF): Agilent8719ES or Equiv., -20dBm/50mV

Temperature rise current (Ir): Electric Power, Electric current meter, Thermometer. ΔT ≤ 20°C

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AIMC-0402HQ



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1.0 x 0.6 x 0.5 mm

## OPTIONS AND PART IDENTIFICATION:

AIMC-0402HQ - [ ] [ ] - [ ]

**Inductance Code**  
Please refer to the table above

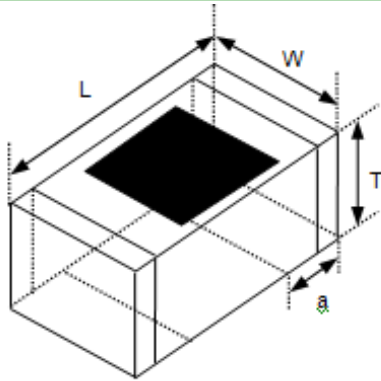
Tolerance
B: $\pm 0.1nH$ *
C: $\pm 0.2nH$ *
S: $\pm 0.3nH$ *
G: $\pm 2\%$ *
H: $\pm 3\%$ *
J: $\pm 5\%$ *

**Packaging**  
T: Tape and Reel  
(10kpcs / reel)

\*B,C,S for L=1.0nH~6.2nH

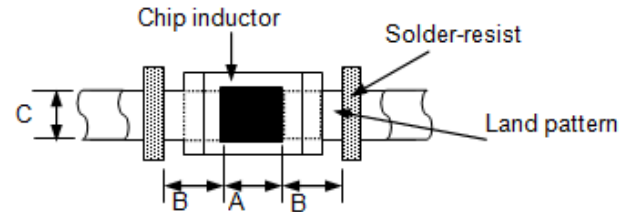
\*G,H,J for L=6.8nH~15nH

## OUTLINE DIMENSIONS:



Series	L	W	T	a
AIMC-0402HQ	1.0 $\pm$ 0.15 [0.039 $\pm$ 0.006]	0.6 $\pm$ 0.15 [0.024 $\pm$ 0.006]	0.5 $\pm$ 0.15 [0.020 $\pm$ 0.006]	0.25 $\pm$ 0.1 [0.010 $\pm$ 0.004]

### Recommended Land Pattern

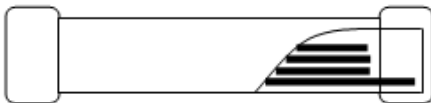


A	B	C
0.45-0.55	0.40-0.50	0.55-0.65

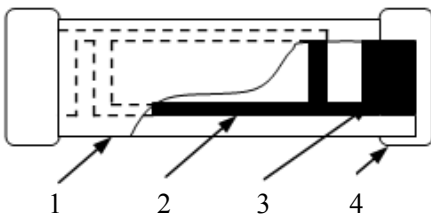
Dimensions: mm [inch]

### Materials

Side View



Top View



	Part Name	Material
1	Base Material	Ceramic
2	Internal Conductor	Ag
3	Pull out Electrode	Ag
4	Terminal Electrode	Ag (Inner layer) Ni-Sn (Outer layer)

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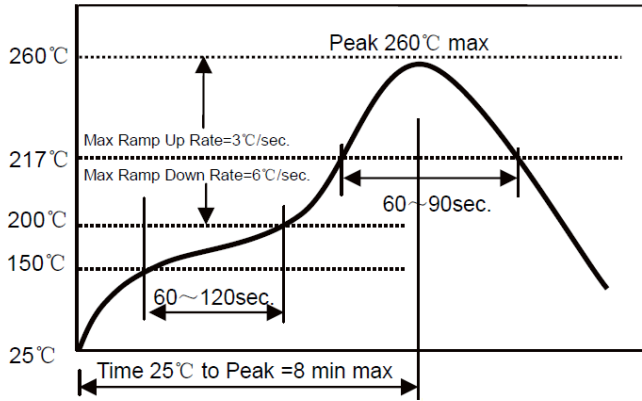


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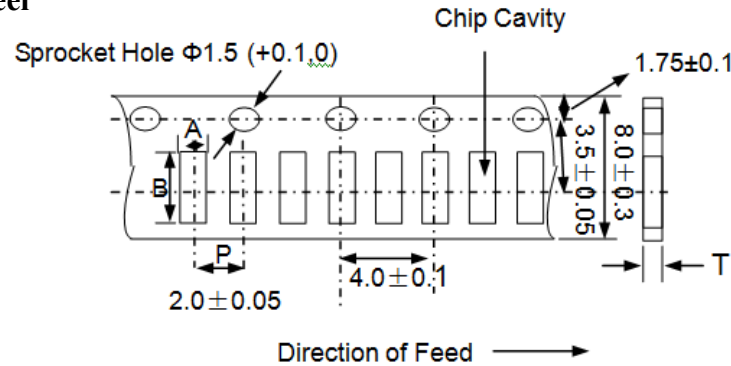
## REFLOW PROFILE:



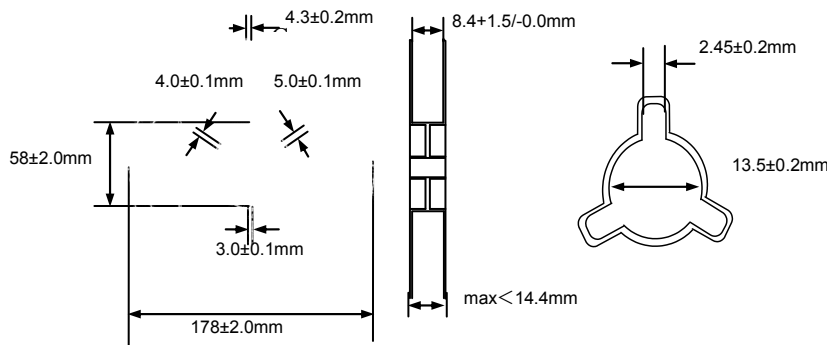
- Δ Preheat condition: 150 ~200°C /60~120sec.
- Δ Allowed time above 217°C: 60~90sec.
- Δ Max temp: 260°C
- Δ Max time at max temp: 10sec.
- Δ Solder paste: Sn/3.0Ag/0.5Cu
- Δ Allowed Reflow time: 2x max

## TAPE & REEL:

T: 10,000pcs / reel



A	B	P	T(max)
0.72±0.1	1.15±0.1	2.0±0.05	0.8



### Storage Conditions

- To maintain the solderability of terminal electrodes and to keep the packing material in good condition, temperature and humidity in the storage area should be controlled. Recommended conditions:  $\leq +40^{\circ}\text{C}$ , 70% RH (Max.)
- The solderability of the external electrode may be deteriorated if packages are stored where they are exposed to dust of harmful gas (e.g. HCl, sulfurous gas of  $\text{H}_2\text{S}$ ).
- Packaging material may be deformed if package are stored where they are exposed to heat of direct sunlight.
- In case of storage over 12 months, solderability shall be checked before actual usage.

Dimension: mm

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