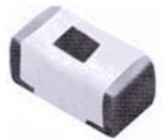


# MULTILAYER CHIP CERAMIC INDUCTORS

AIMC-0402HQ



**RoHS**  
Compliant



1.0 x 0.6 x 0.5 mm

## 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<br>(nH) | Tolerance | Q  | L, Q<br>Test.<br>Freq.<br>(MHz) | Q (Typ.) Freq. (MHz) |     |     |      | S.R.F.<br>(MHz) | DCR<br>(Ω) | Ir<br>(mA) | Inductance<br>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.  $\Delta T \leq 20^\circ\text{C}$

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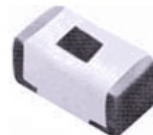
Revised: 11.27.12

# MULTILAYER CHIP CERAMIC INDUCTORS

AIMC-0402HQ



**RoHS**  
Compliant



1.0 x 0.6 x 0.5 mm

## OPTIONS AND PART IDENTIFICATION:

AIMC-0402HQ -  -

| Inductance Code                 |
|---------------------------------|
| Please refer to the table above |

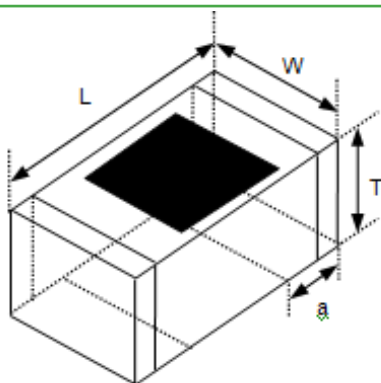
| Tolerance               |
|-------------------------|
| B: $\pm 0.1\text{nH}$ * |
| C: $\pm 0.2\text{nH}$ * |
| S: $\pm 0.3\text{nH}$ * |
| G: $\pm 2\%$ *          |
| H: $\pm 3\%$ *          |
| J: $\pm 5\%$ *          |

| Packaging                           |
|-------------------------------------|
| T: Tape and Reel<br>(10kpcs / reel) |

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

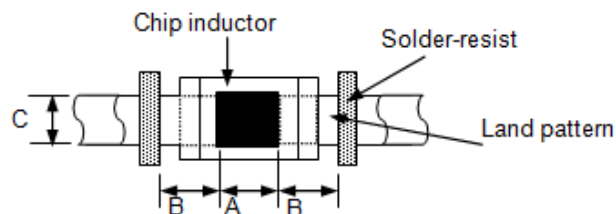
\*G,H,J for L=6.8nH~15nH

## OUTLINE DIMENSIONS:



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

### Recommended Land Pattern

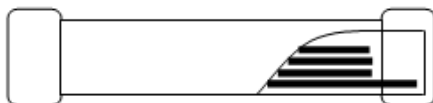


| A         | B         | C         |
|-----------|-----------|-----------|
| 0.45~0.55 | 0.40~0.50 | 0.55~0.65 |

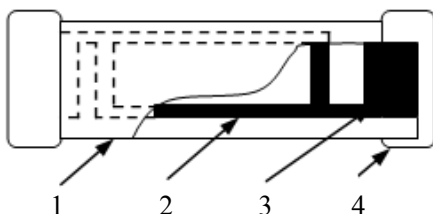
Dimensions: mm [inch]

### 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)<br>Ni-Sn (Outer layer) |

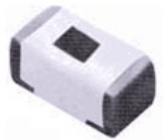


# MULTILAYER CHIP CERAMIC INDUCTORS

AIMC-0402HQ

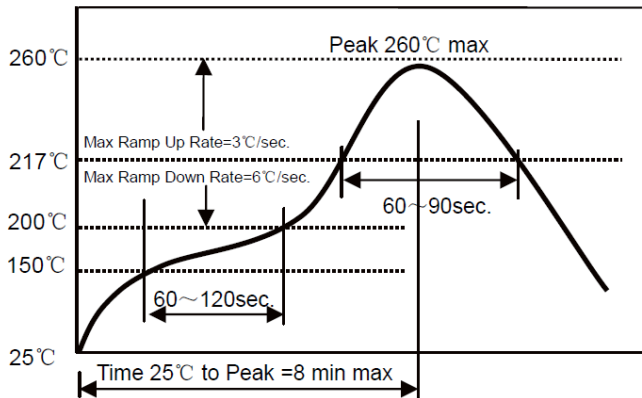


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1.0 x 0.6 x 0.5 mm

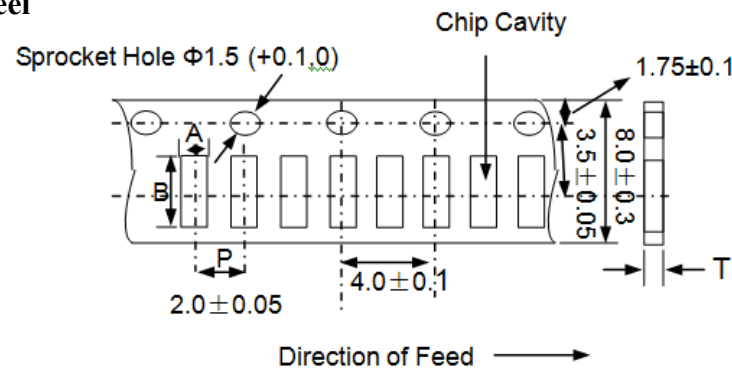
## REFLOW PROFILE:



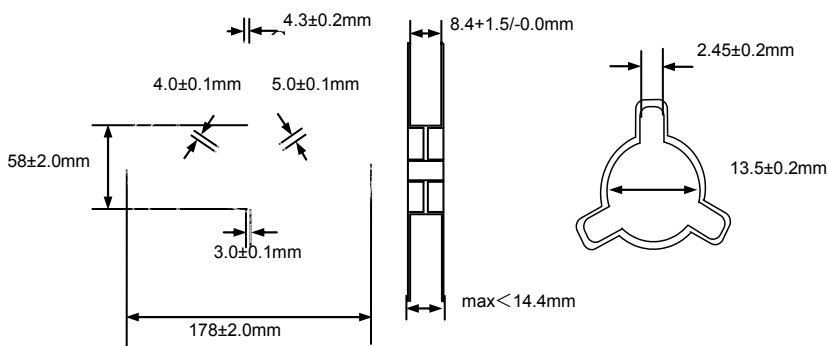
- Δ Preheat condition: 150 ~200°C /60~120sec.
- Δ Allowed time above 217°C: 60~90sec.
- Δ Max temp: 260°C
- Δ Max time at max temp: 10sec.
- Δ Solder paste: Sn/3.0Ag/0.5Cu
- Δ Allowed Reflow time: 2x max

## 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 or harmful gas (e.g. HCl, sulfurous gas of  $\text{H}_2\text{S}$ ).
- Packaging material may be deformed if packages are stored where they are exposed to heat or direct sunlight.
- In case of storage over 12 months, solderability shall be checked before actual usage.

Dimension: mm

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