



# MULTILAYER CERAMIC CHIP INDUCTORS

AIMC-0402

RoHS  
Compliant



1.0 x 0.5 x 0.5mm

## FEATURES:

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

## 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-0402-xxx Series |
| Operating temperature: | -55°C to + 125°C     |

| Part No.      | L(nH) | Tolerance | L,Q Test Freq. (MHz) | Q (MIN) | SRF(MHz) (min) | DCR(Ω) (max) | Ir(mA) (max) |
|---------------|-------|-----------|----------------------|---------|----------------|--------------|--------------|
| AIMC-0402-1N0 | 1.0   | C, S      | 100                  | 9       | 10000          | 0.08         | 400          |
| AIMC-0402-1N2 | 1.2   | C, S      | 100                  | 9       | 10000          | 0.08         | 400          |
| AIMC-0402-1N5 | 1.5   | C, S      | 100                  | 9       | 6000           | 0.10         | 400          |
| AIMC-0402-1N8 | 1.8   | C, S      | 100                  | 9       | 6000           | 0.12         | 400          |
| AIMC-0402-2N2 | 2.2   | C, S      | 100                  | 9       | 6000           | 0.12         | 400          |
| AIMC-0402-2N7 | 2.7   | C, S      | 100                  | 9       | 6000           | 0.13         | 400          |
| AIMC-0402-3N3 | 3.3   | C, S      | 100                  | 9       | 6000           | 0.15         | 400          |
| AIMC-0402-3N9 | 3.9   | C, S      | 100                  | 9       | 4500           | 0.21         | 400          |
| AIMC-0402-4N7 | 4.7   | C, S      | 100                  | 9       | 4500           | 0.21         | 300          |
| AIMC-0402-5N6 | 5.6   | C, S      | 100                  | 9       | 4000           | 0.23         | 300          |
| AIMC-0402-6N8 | 6.8   | C, S      | 100                  | 9       | 4000           | 0.25         | 300          |
| AIMC-0402-8N2 | 8.2   | C, S      | 100                  | 9       | 3600           | 0.35         | 300          |
| AIMC-0402-10N | 10    | J         | 100                  | 9       | 3200           | 0.42         | 300          |
| AIMC-0402-12N | 12    | J         | 100                  | 9       | 2800           | 0.50         | 300          |
| AIMC-0402-15N | 15    | J         | 100                  | 9       | 2500           | 0.60         | 300          |
| AIMC-0402-18N | 18    | J         | 100                  | 9       | 2200           | 0.80         | 300          |
| AIMC-0402-22N | 22    | J         | 100                  | 9       | 1900           | 0.85         | 300          |
| AIMC-0402-27N | 27    | J         | 100                  | 9       | 1600           | 1.00         | 300          |
| AIMC-0402-33N | 33    | J         | 100                  | 9       | 1300           | 1.00         | 200          |
| AIMC-0402-39N | 39    | J         | 100                  | 9       | 1200           | 1.30         | 200          |
| AIMC-0402-47N | 47    | J         | 100                  | 9       | 1000           | 1.50         | 200          |
| AIMC-0402-56N | 56    | J         | 100                  | 9       | 800            | 1.80         | 200          |
| AIMC-0402-68N | 68    | J         | 100                  | 9       | 800            | 1.95         | 180          |
| AIMC-0402-82N | 82    | J         | 100                  | 9       | 600            | 2.10         | 150          |
| AIMC-0402-R10 | 100   | J         | 100                  | 9       | 600            | 2.50         | 150          |
| AIMC-0402-R12 | 120   | J         | 100                  | 9       | 600            | 2.80         | 150          |

### Test Conditions and equipments

L, Q: HP4291 Impedance Analyzer, 100MHz, 50mV

DCR: HP4263A LCR meter

SRF: HP4291 Impedance analyzer, HP8753 Network analyzer

Ir: DC Power Supplier, Current Meter,

Thermometer.  $\Delta L/L$  (initial)  $\geq -5\%$  or  $\Delta T \leq 20^\circ\text{C}$

### Unless otherwise specified

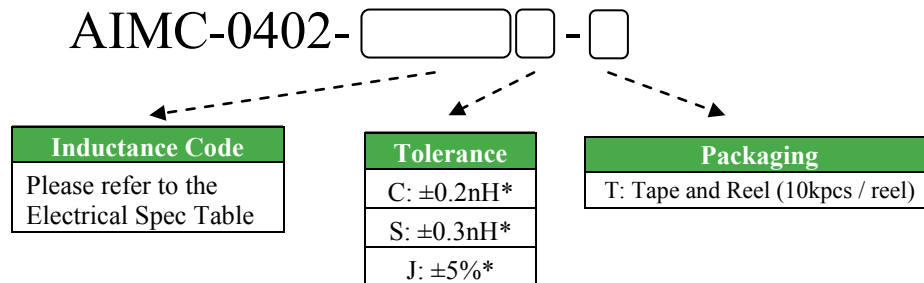
Temperature : Ordinary Temperature ( 5 to 35°C)

Humidity : Ordinary Humidity (25 to 85% RH)

Atmospheric Pressure : 86 to 106 kPa

## OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)



\* C, S for L = 1.0~8.2nH

J for L = 10~120nH

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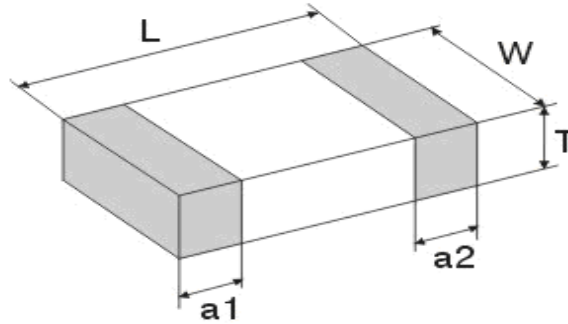
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1.0 x 0.5 x 0.5mm

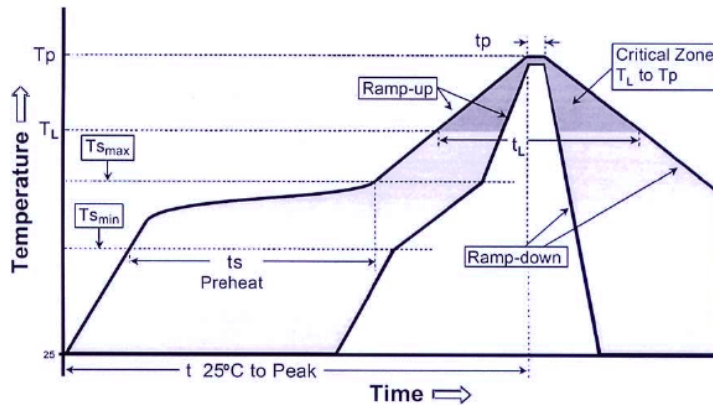
## OUTLINE DRAWING:



Dimensions: mm [inch]

| Series    | L            | W            | T            | a1,a2        |
|-----------|--------------|--------------|--------------|--------------|
| AIMC-0402 | 1.00±0.15    | 0.50±0.15    | 0.50±0.15    | 0.25±0.10    |
|           | [0.04±0.006] | [0.02±0.006] | [0.02±0.006] | [0.01±0.004] |

## REFLOW PROFILE:



| Profile Feature   | Lead-Free Assembly                 |
|---|------------------------------------|
| Average Ramp-Up Rate<br>(T <sub>smax</sub> to T <sub>p</sub> )  | 3°C /second max.                   |
| Preheat<br>- Temperature Min (T <sub> Amin</sub> )<br>- Temperature Max (T <sub>smax</sub> )<br>- Time (t <sub> Amin</sub> to t <sub>smax</sub> )<br>min to t <sub>smax</sub> ) | 150 °C<br>200 °C<br>60-180 seconds |
| Time maintained above:<br>- Temperature (T <sub>L</sub> )<br>- Time (t <sub>L</sub> )   | 217 °C<br>60-150 seconds           |
| Peak/Classification Temperature (T <sub>p</sub> )<br>Peak/Classification Time (T <sub>p</sub> )   | 260 °C<br>3-4 seconds              |
| Time within 5 °C of actual Peak Temperature (t <sub>p</sub> )   | 20-40 seconds                      |
| Ramp-Down Rate  | 6°C/second max.                    |
| Time 25 °C to Peak Temperature  | 8 minutes max.                     |

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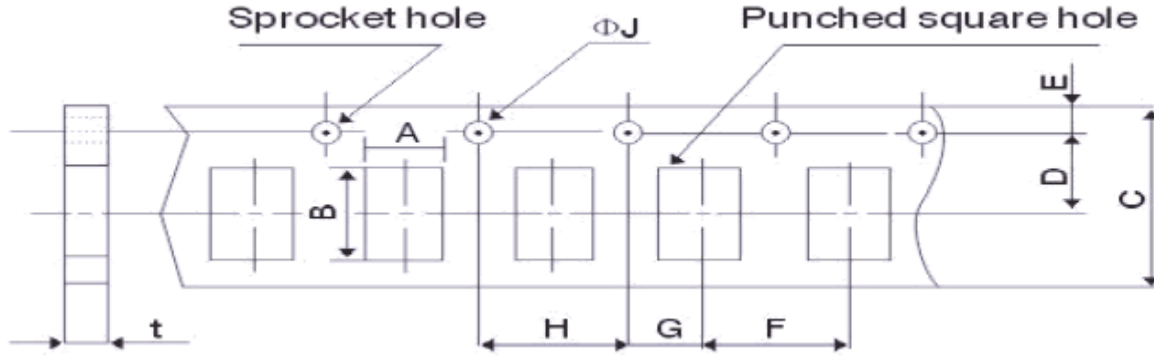
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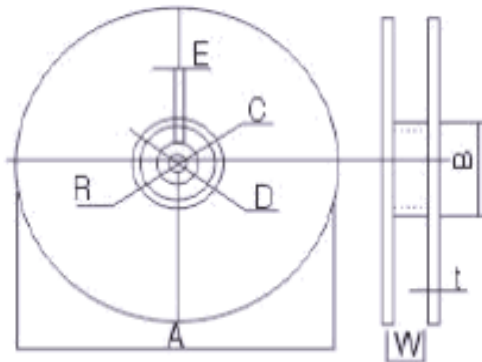
1.0 x 0.5 x 0.5mm

## TAPE & REEL:

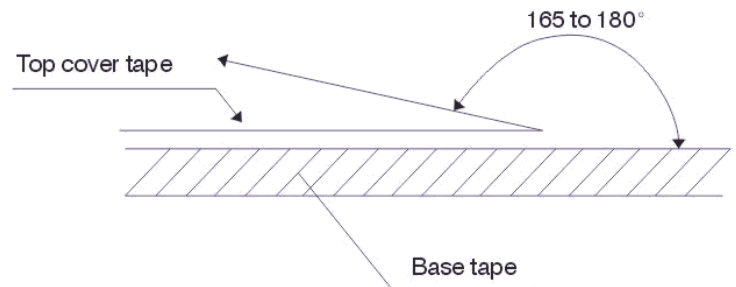
T = Tape and reel 10,000pcs/reel



| Codes     | A         | B         | C       | D        | E        | F        | G        | H       | ΦJ         | t(max)   |
|-----------|-----------|-----------|---------|----------|----------|----------|----------|---------|------------|----------|
| AIMC-0402 | 0.65±0.10 | 1.15±0.10 | 8.0±0.3 | 3.5±0.05 | 1.75±0.1 | 2.0±0.05 | 2.0±0.05 | 4.0±0.1 | 1.5+0.1/-0 | 0.8±0.05 |



|   |           |
|---|-----------|
| A | 178±2     |
| B | 60±2      |
| C | 13.0±0.5  |
| D | 21.0±0.8  |
| E | 2.0±0.5   |
| W | 10.0±1.15 |
| t | 1.2±0.2   |
| R | 1.0±0.25  |



- Test condition:
- 1) peel angle: 165°~180° vs. carrier tape.
  - 2) peel speed: 300 mm/min±10%.

Dimension: mm

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