# Multilayer Ceramic Inductors

## Features

- Monolithic structure with high reliability
- Standard EIA/EIAJ chip sizes such as 0402/1005, 0603/1608
- High quality ceramic material and unique manufacturing processes providing high Q at high frequencies and high self-resonant frequencies
- Superior termination bonding strength
- Nickel barrier with solder overplated termination offering excellent solderability and solder leach resistance, suitable for both wave and reflow soldering processes

## Applications

- High frequency equipment including cellular phones, pagers, radar detectors, computer communications, etc

## Operating Temperature

*-40ºC — +125ºC*

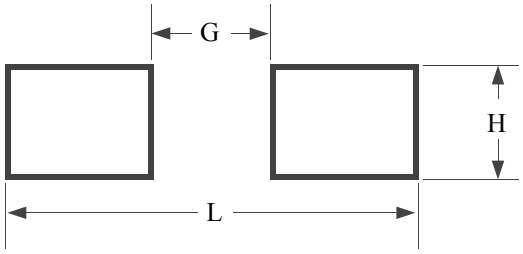
## Product Identification

MHI 0603 C 1N8 J T - T
(1) (2) (3) (4) (5) (6) (7)

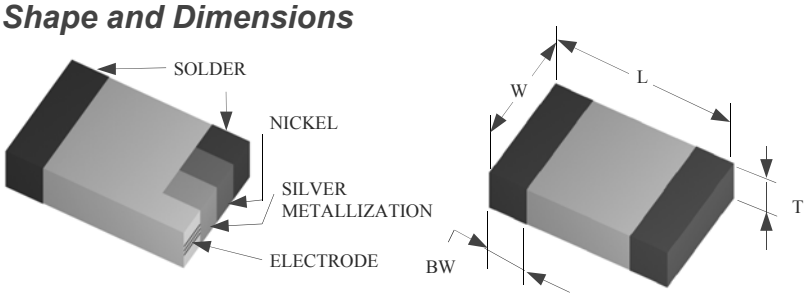
(1) Series code :
MHI: Multilayer Ceramic Inductor
(2) Dimensions: L x W inches
The first two digits: L (length)
The last two digits: W (width)
(3) Characteristic code: C
(4) Value code: Inductance
N — decimal point for nH
Example: 1N8 = 1.8 nH
R — decimal point for µH (1000 nH)
Example: R12 = 0.12 µH = 120 nH
(5) Tolerance code:
S = ±0.3 nH
J = ±5%
K = ±10%
(6) Package code:
T = Tape & Reel
B = Bulk
(7) Termination plating code:
T = 100% Sn Plated Terminations
(must be specified as Sn/Pb plating no longer available.)

## Recommended PC Board Land Patterns

| CHIP SIZE EIA/EIAJ | L INCH (mm) | G INCH (mm) | H INCH (mm) |
|---|---|---|---|
| **0402(1005)** | 0.063 (1.60) | 0.016 (0.40) | 0.024 (0.60) |
| **0603(1608)** | 0.102 (2.60) | 0.022 (0.55) | 0.037 (0.94) |




## Shape and Dimensions




| SIZE EIA/EIAJ | LENGTH (L) INCH (mm) | WIDTH (W) INCH (mm) | THICKNESS (T) INCH (mm) | TERMINATION (BW) INCH (mm) |
|---|---|---|---|---|
| **0402/1005** | 0.039 ± 0.004 (1.00 ± 0.10) | 0.020 ± 0.004 (0.50 ± 0.10) | 0.020 ± 0.004 (0.50 ± 0.10) | 0.008± 0.004 (0.20 ± 0.10) |
| **0603/1608** | 0.063 ± 0.006 (1.60 ± 0.15) | 0.031 ± 0.006 (0.80 ± 0.15) | 0.031 ± 0.006 (0.80 ± 0.15) | 0.016 ± 0.008 (0.40 ± 0.20) |



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# MHI Series (High Frequency)

| AEM Part Number | L, nH | Tolerance | Min.Q | Typ. Q @100 MHz | Typ. Q @800 MHz | Test Frequency MHz | Min. SRF MHz | Max. $R_{DC}$ Ω | Max. I A |
|---|---|---|---|---|---|---|---|---|---|
| **MHI0402C1N0** | 1.0 | S | 8 | 11 | 37 | 100 | 10000 | 0.12 | 0.3 |
| **MHI0402C1N2** | 1.2 | S | 8 | 11 | 36 | 100 | 10000 | 0.12 | 0.3 |
| **MHI0402C1N5** | 1.5 | S | 8 | 11 | 36 | 100 | 6000 | 0.13 | 0.3 |
| **MHI0402C1N8** | 1.8 | S | 8 | 11 | 34 | 100 | 6000 | 0.14 | 0.3 |
| **MHI0402C2N2** | 2.2 | S | 8 | 11 | 34 | 100 | 6000 | 0.16 | 0.3 |
| **MHI0402C2N7** | 2.7 | S | 8 | 11 | 34 | 100 | 6000 | 0.17 | 0.3 |
| **MHI0402C3N3** | 3.3 | S, K | 8 | 11 | 34 | 100 | 6000 | 0.19 | 0.3 |
| **MHI0402C3N9** | 3.9 | S, K | 8 | 11 | 32 | 100 | 4000 | 0.22 | 0.3 |
| **MHI0402C4N7** | 4.7 | S, K | 8 | 11 | 32 | 100 | 4000 | 0.24 | 0.3 |
| **MHI0402C5N6** | 5.6 | S, K | 8 | 11 | 32 | 100 | 4000 | 0.27 | 0.3 |
| **MHI0402C6N8** | 6.8 | J, K | 8 | 11 | 32 | 100 | 3900 | 0.32 | 0.3 |
| **MHI0402C8N2** | 8.2 | J, K | 8 | 11 | 32 | 100 | 3500 | 0.37 | 0.3 |
| **MHI0402C10N** | 10 | J, K | 8 | 11 | 31 | 100 | 3200 | 0.42 | 0.3 |
| **MHI0402C12N** | 12 | J, K | 8 | 11 | 31 | 100 | 2600 | 0.50 | 0.3 |
| **MHI0402C15N** | 15 | J, K | 8 | 11 | 30 | 100 | 2300 | 0.55 | 0.3 |
| **MHI0402C18N** | 18 | J, K | 8 | 11 | 30 | 100 | 2000 | 0.65 | 0.3 |
| **MHI0402C22N** | 22 | J, K | 8 | 11 | 30 | 100 | 1600 | 0.80 | 0.3 |
| **MHI0402C27N** | 27 | J, K | 8 | 11 | 28 | 100 | 1400 | 0.90 | 0.3 |
| **MHI0402C33N** | 33 | J, K | 8 | 11 | 26 | 100 | 1200 | 1.0 | 0.2 |
| **MHI0402C39N** | 39 | J, K | 8 | 11 | 24 | 100 | 1100 | 1.2 | 0.2 |
| **MHI0402C47N** | 47 | J, K | 8 | 11 | 23 | 100 | 900 | 1.3 | 0.2 |
| **MHI0402C56N** | 56 | J, K | 8 | 11 | 21 | 100 | 750 | 1.4 | 0.2 |
| **MHI0402C68N** | 68 | J, K | 8 | 11 | 19 | 100 | 750 | 1.4 | 0.18 |
| **MHI0402C82N** | 82 | J, K | 8 | 10 | 16 | 100 | 600 | 1.6 | 0.15 |
| **MHI0402CR10** | 100 | J, K | 8 | 10 | | 100 | 600 | 1.6 | 0.1 |
| **MHI0402CR12** | 120 | J, K | 8 | 10 | | 100 | 600 | 1.6 | 0.1 |

**Other values may be available upon request.**
**Please add tolerance, packaging and termination type codes when ordering.**



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# MHI Series (for high frequency)

| AEM Part Number | L, nH | Tolerance | Min.Q | Typ. Q @100 MHz | Typ. Q @800 MHz | Test Frequency MHz | Min. SRF MHz | Max. $R_{DC}$ Ω | Max. I A |
|---|---|---|---|---|---|---|---|---|---|
| **MH10603C1N5** | 1.5 | S | 8 | 14 | 46 | 100 | 6000 | 0.10 | 1.0 |
| **MHI0603C1N8** | 1.8 | S | 8 | 14 | 46 | 100 | 6000 | 0.10 | 1.0 |
| **MHI0603C2N2** | 2.2 | S | 8 | 14 | 46 | 100 | 6000 | 0.10 | 1.0 |
| **MHI0603C2N7** | 2.7 | S | 8 | 14 | 46 | 100 | 6000 | 0.10 | 1.0 |
| **MHI0603C3N3** | 3.3 | S, K | 10 | 14 | 46 | 100 | 6000 | 0.13 | 1.0 |
| **MHI0603C3N9** | 3.9 | S, K | 10 | 14 | 46 | 100 | 6000 | 0.15 | 1.0 |
| **MHI0603C4N7** | 4.7 | S, K | 10 | 14 | 46 | 100 | 4000 | 0.20 | 1.0 |
| **MHI0603C5N6** | 5.6 | S, K | 10 | 14 | 46 | 100 | 4000 | 0.23 | 0.6 |
| **MHI0603C6N8** | 6.8 | J, K | 10 | 15 | 46 | 100 | 4000 | 0.25 | 0.6 |
| **MHI0603C8N2** | 8.2 | J, K | 10 | 15 | 46 | 100 | 3500 | 0.28 | 0.6 |
| **MHI0603C10N** | 10 | J, K | 12 | 15 | 46 | 100 | 3200 | 0.30 | 0.6 |
| **MHI0603C12N** | 12 | J, K | 12 | 15 | 46 | 100 | 2600 | 0.35 | 0.6 |
| **MHI0603C15N** | 15 | J, K | 12 | 15 | 46 | 100 | 2300 | 0.40 | 0.6 |
| **MHI0603C18N** | 18 | J, K | 12 | 15 | 46 | 100 | 2000 | 0.45 | 0.6 |
| **MHI0603C22N** | 22 | J, K | 12 | 15 | 46 | 100 | 1600 | 0.50 | 0.6 |
| **MHI0603C27N** | 27 | J, K | 12 | 15 | 46 | 100 | 1400 | 0.55 | 0.6 |
| **MHI0603C33N** | 33 | J, K | 12 | 15 | 46 | 100 | 1200 | 0.60 | 0.6 |
| **MHI0603C39N** | 39 | J, K | 12 | 15 | 46 | 100 | 1100 | 0.65 | 0.5 |
| **MHI0603C47N** | 47 | J, K | 12 | 15 | 39 | 100 | 900 | 0.70 | 0.5 |
| **MHI0603C56N** | 56 | J, K | 12 | 15 | 37 | 100 | 900 | 0.75 | 0.5 |
| **MHI0603C68N** | 68 | J, K | 12 | 15 | 36 | 100 | 700 | 0.80 | 0.4 |
| **MHI0603C82N** | 82 | J, K | 12 | 15 | 29 | 100 | 600 | 0.85 | 0.3 |
| **MHI0603CR10** | 100 | J, K | 12 | 15 | 16 | 100 | 600 | 0.90 | 0.3 |
| **MHI0603CR12** | 120 | J, K | 8 | 15 | 16 | 50 | 500 | 1.00 | 0.3 |
| **MHI0603CR15** | 150 | J, K | 8 | 13 | | 50 | 500 | 1.20 | 0.3 |
| **MHI0603CR18** | 180 | J, K | 8 | 13 | | 50 | 400 | 1.30 | 0.3 |
| **MHI0603CR22** | 220 | J, K | 8 | 13 | | 50 | 400 | 1.50 | 0.3 |

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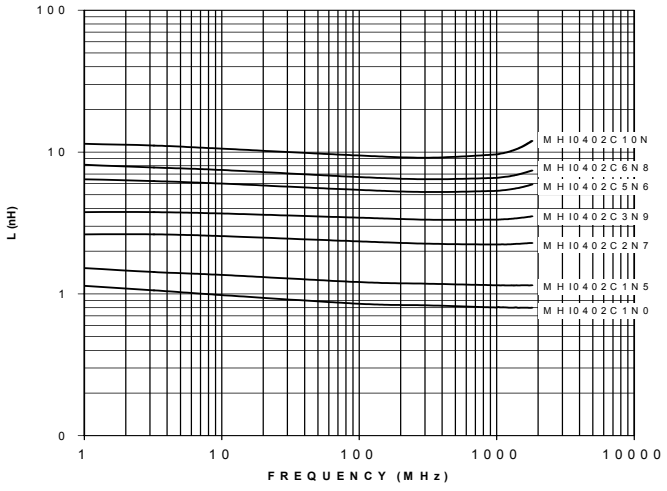
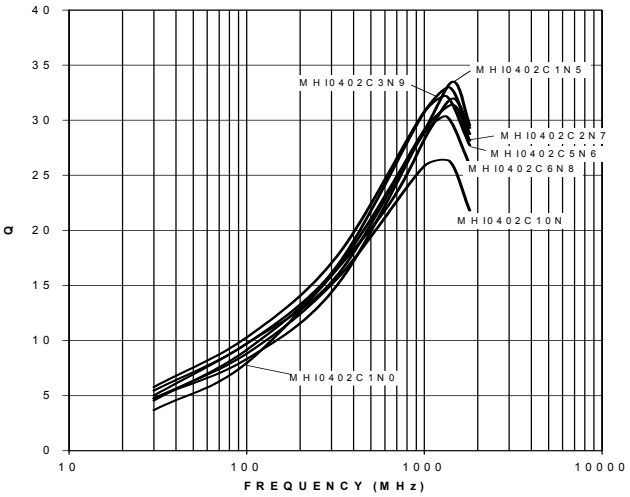
## Typical Electrical Characteristics

(Curves not listed are available upon request)

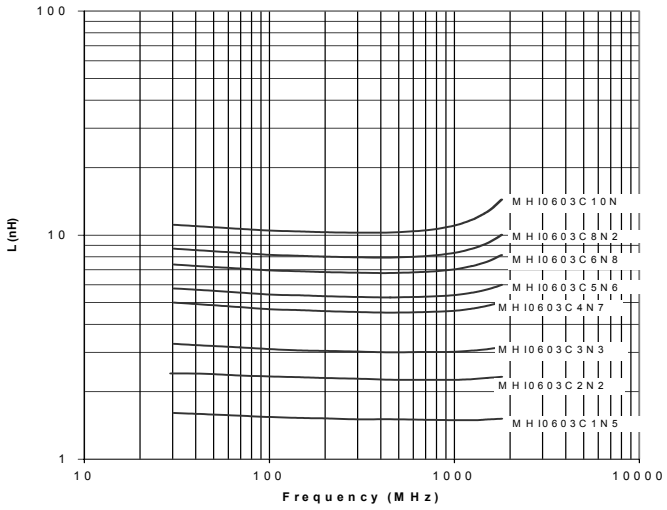
**MHI0402 SERIES**



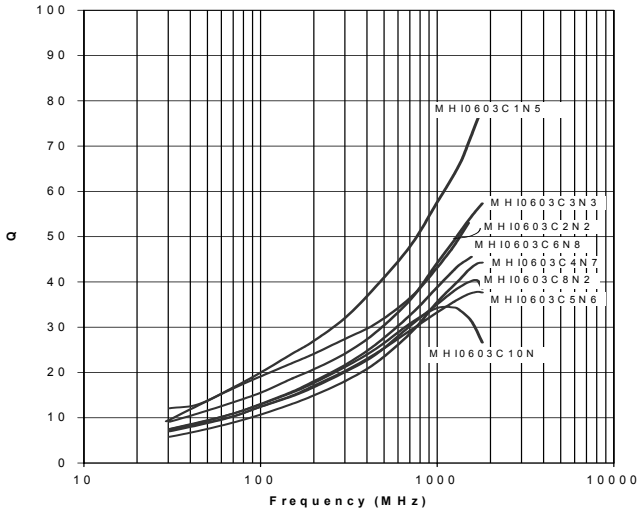

**MHI0402 Series**




**MHI0603 Series**




**MHI0603 Series**



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