

Multilayer Ceramic Inductors

Features

- Monolithic structure with high reliability
- Standard EIA/EIAJ chip sizes such as 0402/1005, 0603/1608 and 0805/2012
- 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 overlated 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

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) |
| 0805(2012) | 0.118 (3.00) | 0.026 (0.66) | 0.057 (1.45) |

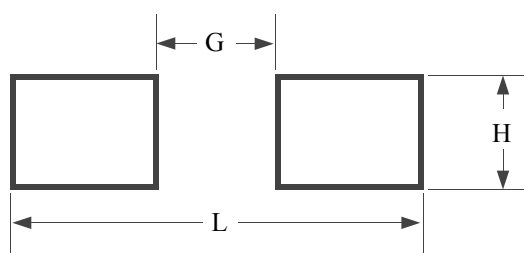
Operating Temperature

-40°C — +125°C

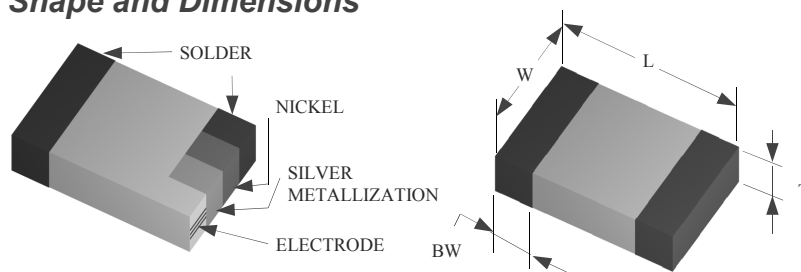
Product Identification

MHI 0805 C 1N8 J T
(1) (2) (3) (4) (5) (6)

- (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 μ H (1000 nH)
Example: R12 = 0.12 μ H = 120 nH
- (5) Tolerance code:
S = ± 0.3 nH
J = $\pm 5\%$
K = $\pm 10\%$
- (6) Package code:
T = Tape & Reel
B = Bulk



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 \pm 0.004 (1.00 \pm 0.10) | 0.020 \pm 0.004 (0.50 \pm 0.10) | 0.020 \pm 0.004 (0.50 \pm 0.10) | 0.008 \pm 0.004 (0.20 \pm 0.10) |
| 0603/1608 | 0.063 \pm 0.006 (1.60 \pm 0.15) | 0.031 \pm 0.006 (0.80 \pm 0.15) | 0.031 \pm 0.006 (0.80 \pm 0.15) | 0.016 \pm 0.008 (0.40 \pm 0.20) |
| 0805/2012 | 0.079 \pm 0.008 (2.00 \pm 0.20) | 0.047 \pm 0.008 (1.20 \pm 0.20) | 0.035 \pm 0.008 (0.90 \pm 0.20) | 0.020 \pm 0.012 (0.50 \pm 0.30) |

MHI Series (High Frequency)

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

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

MHI Series (for high frequency)

| <i>AEM Part Number</i> | <i>L, nH</i> | <i>Tolerance</i> | <i>Typ. Q @100 MHz</i> | <i>Typ. Q @800 MHz</i> | <i>Test Frequency MHz</i> | <i>Min. SRF MHz</i> | <i>Max. R_{DC} Ω</i> | <i>Max. I A</i> |
|------------------------|--------------|------------------|------------------------|------------------------|---------------------------|---------------------|------------------------------|-----------------|
| MHI0603C1N5 | 1.5 | S | 14 | 46 | 100 | 6000 | 0.10 | 1.0 |
| MHI0603C1N8 | 1.8 | S | 14 | 46 | 100 | 6000 | 0.10 | 1.0 |
| MHI0603C2N2 | 2.2 | S | 14 | 46 | 100 | 6000 | 0.10 | 1.0 |
| MHI0603C2N7 | 2.7 | S | 14 | 46 | 100 | 6000 | 0.10 | 1.0 |
| MHI0603C3N3 | 3.3 | S, K | 14 | 46 | 100 | 6000 | 0.13 | 1.0 |
| MHI0603C3N9 | 3.9 | S, K | 14 | 46 | 100 | 6000 | 0.15 | 1.0 |
| MHI0603C4N7 | 4.7 | S, K | 14 | 46 | 100 | 4000 | 0.20 | 1.0 |
| MHI0603C5N6 | 5.6 | S, K | 14 | 46 | 100 | 4000 | 0.23 | 0.6 |
| MHI0603C6N8 | 6.8 | J, K | 15 | 46 | 100 | 4000 | 0.25 | 0.6 |
| MHI0603C8N2 | 8.2 | J, K | 15 | 46 | 100 | 3500 | 0.28 | 0.6 |
| MHI0603C10N | 10 | J, K | 15 | 46 | 100 | 3200 | 0.30 | 0.6 |
| MHI0603C12N | 12 | J, K | 15 | 46 | 100 | 2600 | 0.35 | 0.6 |
| MHI0603C15N | 15 | J, K | 15 | 46 | 100 | 2300 | 0.40 | 0.6 |
| MHI0603C18N | 18 | J, K | 15 | 46 | 100 | 2000 | 0.45 | 0.6 |
| MHI0603C22N | 22 | J, K | 15 | 46 | 100 | 1600 | 0.50 | 0.6 |
| MHI0603C27N | 27 | J, K | 15 | 46 | 100 | 1400 | 0.55 | 0.6 |
| MHI0603C33N | 33 | J, K | 15 | 46 | 100 | 1200 | 0.60 | 0.6 |
| MHI0603C39N | 39 | J, K | 15 | 46 | 100 | 1100 | 0.65 | 0.5 |
| MHI0603C47N | 47 | J, K | 15 | 39 | 100 | 900 | 0.70 | 0.5 |
| MHI0603C56N | 56 | J, K | 15 | 37 | 100 | 900 | 0.75 | 0.5 |
| MHI0603C68N | 68 | J, K | 15 | 36 | 100 | 700 | 0.80 | 0.4 |
| MHI0603C82N | 82 | J, K | 15 | 29 | 100 | 600 | 0.85 | 0.3 |
| MHI0603CR10 | 100 | J, K | 15 | 16 | 100 | 600 | 0.90 | 0.3 |
| MHI0603CR12 | 120 | J, K | 15 | 16 | 50 | 500 | 1.00 | 0.3 |
| MHI0603CR15 | 150 | J, K | 13 | | 50 | 500 | 1.20 | 0.3 |
| MHI0603CR18 | 180 | J, K | 13 | | 50 | 400 | 1.30 | 0.3 |
| MHI0603CR22 | 220 | J, K | 13 | | 50 | 400 | 1.50 | 0.3 |

Other values may be available upon request.
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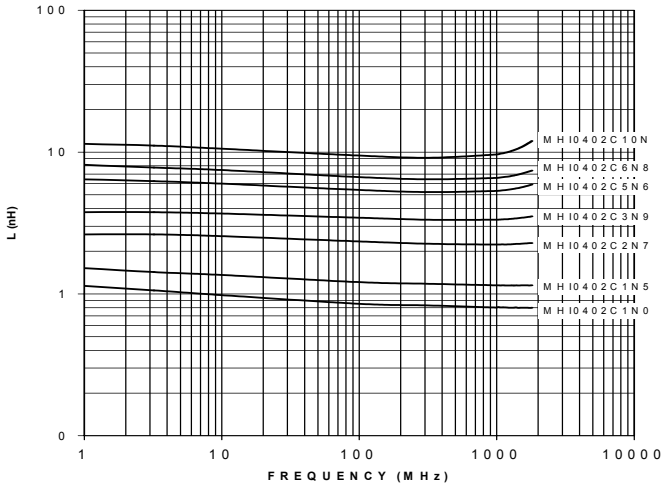
MHI Series (for high frequency)

| <i>AEM Part Number</i> | <i>L, nH</i> | <i>Tolerance</i> | <i>Typ. Q @100 MHz</i> | <i>Typ. Q @800 MHz</i> | <i>Test Frequency MHz</i> | <i>Min. SRF MHz</i> | <i>Max. R_{DC} Ω</i> | <i>Max. I A</i> |
|------------------------|--------------|------------------|------------------------|------------------------|---------------------------|---------------------|------------------------------|-----------------|
| MHI0805C1N5 | 1.5 | S | 13 | 40 | 100 | 6000 | 0.10 | 0.3 |
| MHI0805C1N8 | 1.8 | S | 13 | 45 | 100 | 6000 | 0.10 | 0.3 |
| MHI0805C2N2 | 2.2 | S | 13 | 48 | 100 | 6000 | 0.10 | 0.3 |
| MHI0805C2N7 | 2.7 | S | 13 | 36 | 100 | 6000 | 0.10 | 0.3 |
| MHI0805C3N3 | 3.3 | S, K | 13 | 56 | 100 | 6000 | 0.13 | 0.3 |
| MHI0805C3N9 | 3.9 | S, K | 15 | 54 | 100 | 5400 | 0.15 | 0.3 |
| MHI0805C4N7 | 4.7 | S, K | 15 | 50 | 100 | 4500 | 0.20 | 0.3 |
| MHI0805C5N6 | 5.6 | S, K | 15 | 53 | 100 | 4000 | 0.23 | 0.3 |
| MHI0805C6N8 | 6.8 | J, K | 15 | 51 | 100 | 3650 | 0.25 | 0.3 |
| MHI0805C8N2 | 8.2 | J, K | 15 | 53 | 100 | 3000 | 0.28 | 0.3 |
| MHI0805C10N | 10 | J, K | 16 | 45 | 100 | 2500 | 0.30 | 0.3 |
| MHI0805C12N | 12 | J, K | 16 | 48 | 100 | 2450 | 0.35 | 0.3 |
| MHI0805C15N | 15 | J, K | 17 | 48 | 100 | 2000 | 0.40 | 0.3 |
| MHI0805C18N | 18 | J, K | 17 | 43 | 100 | 1750 | 0.45 | 0.3 |
| MHI0805C22N | 22 | J, K | 17 | 47 | 100 | 1700 | 0.50 | 0.3 |
| MHI0805C27N | 27 | J, K | 18 | 38 | 100 | 1550 | 0.55 | 0.3 |
| MHI0805C33N | 33 | J, K | 18 | 35 | 100 | 1350 | 0.60 | 0.3 |
| MHI0805C39N | 39 | J, K | 18 | 40 | 100 | 1300 | 0.65 | 0.3 |
| MHI0805C47N | 47 | J, K | 18 | 33 | 100 | 1200 | 0.70 | 0.3 |
| MHI0805C56N | 56 | J, K | 19 | 31 | 100 | 1150 | 0.75 | 0.3 |
| MHI0805C68N | 68 | J, K | 19 | 28 | 100 | 1000 | 0.85 | 0.3 |
| MHI0805C82N | 82 | J, K | 19 | 9 | 100 | 850 | 0.90 | 0.3 |
| MHI0805CR10 | 100 | J, K | 19 | | 100 | 730 | 1.0 | 0.3 |
| MHI0805CR12 | 120 | J, K | 19 | | 50 | 650 | 1.3 | 0.25 |
| MHI0805CR15 | 150 | J, K | 20 | | 50 | 550 | 1.5 | 0.25 |
| MHI0805CR18 | 180 | J, K | 20 | | 50 | 500 | 1.8 | 0.25 |
| MHI0805CR22 | 220 | J, K | 20 | | 50 | 450 | 2.0 | 0.2 |
| MHI0805CR27 | 270 | J, K | 20 | | 50 | 400 | 2.5 | 0.2 |
| MHI0805CR33 | 330 | J, K | 20 | | 50 | 380 | 3.0 | 0.15 |
| MHI0805CR39 | 390 | J, K | 20 | | 50 | 330 | 3.5 | 0.15 |
| MHI0805CR47 | 470 | J, K | 19 | | 50 | 300 | 4.0 | 0.1 |

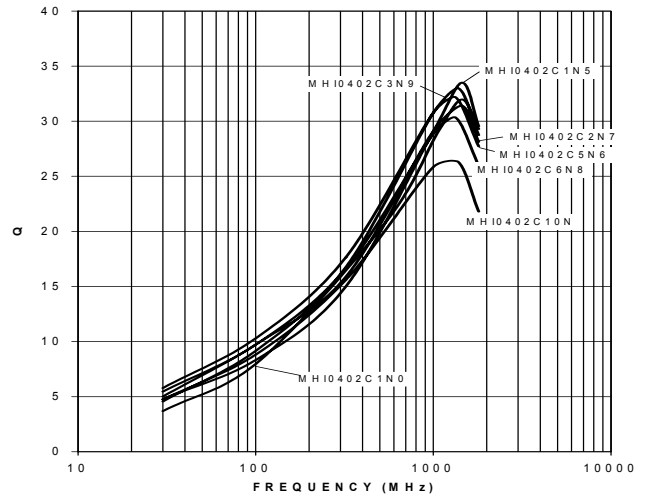
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Typical Electrical Characteristics
 (Curves not listed are available upon request)

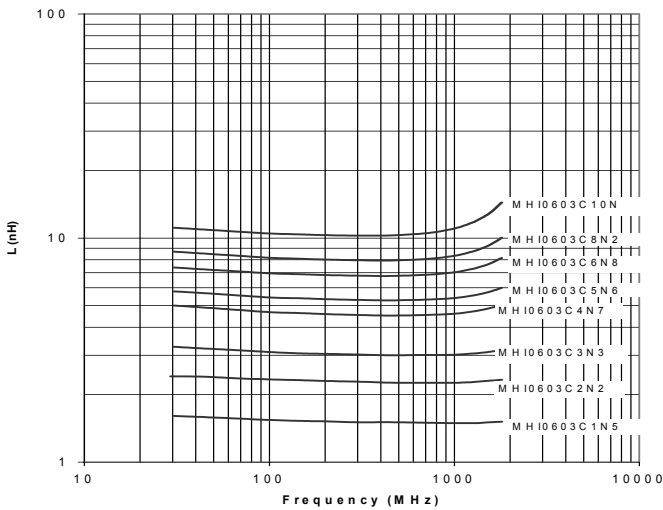
MHI0402 SERIES



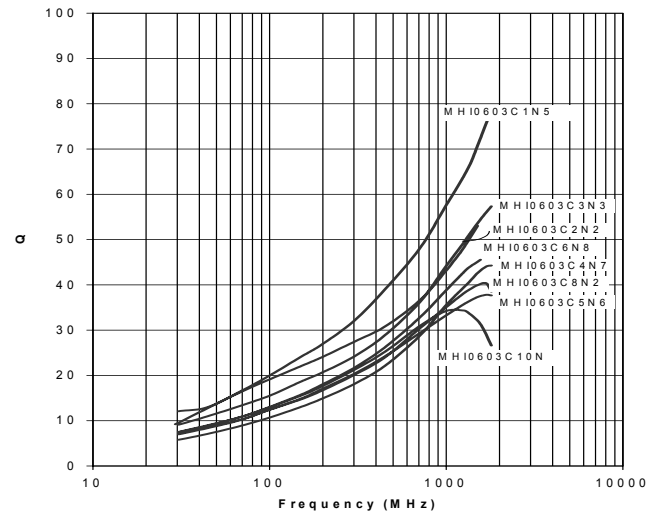
MHI0402 Series



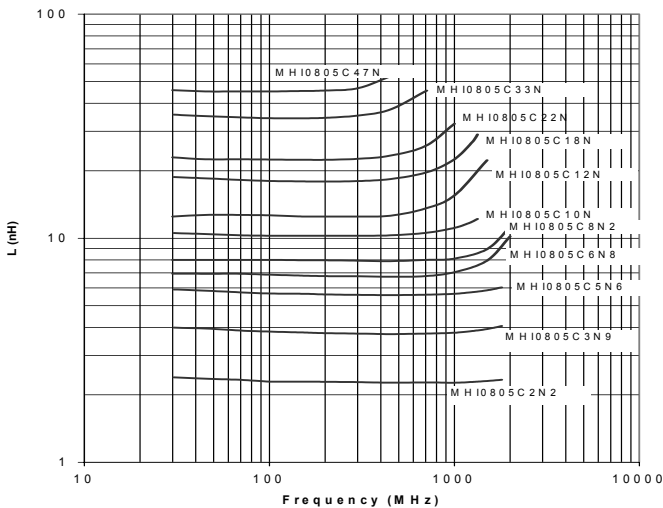
MHI0603 Series



MHI0603 Series



MHI0805 Series



MHI0805 Series

