

Thin Film Chip Inductors

Features

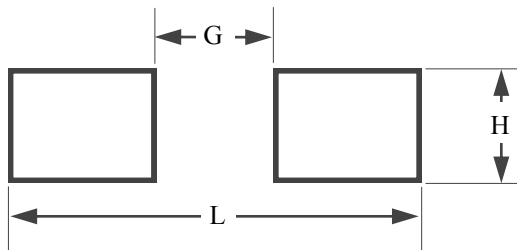
- Photolithographic single layer ceramic chip
- High SRF, superior Q, and excellent temperature stability
- Precision within $\pm 1\%$ or ± 0.1 nH

Applications

- Cellular telephone, digital camera and GPS products
- VCO, TCXO Circuits and RF transceiver modules
- Wireless LANs, bluetooth modules, communication appliances

Recommended PC Board Land Patterns

| CHIP SIZE EIA/EIAJ | L INCH (mm) | G INCH (mm) | H INCH (mm) |
|-----------------------|----------------|----------------|----------------|
| 0201(0502) | 0.033 (0.85) | 0.010 (0.25) | 0.016 (0.40) |
| 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) |



Operating Temperature

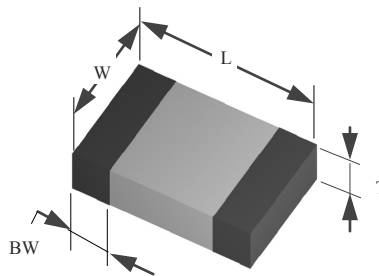
-40°C — +85°C

Product Identification

TFI 0402 C 1N8 S I - I
(1) (2) (3) (4) (5) (6) (7)

- (1) Series code :
TFI: Thin Film 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: R10 = 0.10 μ H = 100 nH
- (5) Tolerance code:
F = $\pm 1\%$ B = ± 0.1 nH
G = $\pm 2\%$ C = ± 0.2 nH
H = $\pm 3\%$ S = ± 0.3 nH
J = $\pm 5\%$
- (6) Package code:
T = Tape & Reel
- (7) Termination type code:
T = 100% Sn plating

Shape and Dimensions



| SIZE EIA/EIAJ | LENGTH (L) INCH (mm) | WIDTH (W) INCH (mm) | THICKNESS (T) INCH (mm) | TERMINATION (BW) INCH (mm) |
|------------------|--|--|--|--|
| 0201/0502 | 0.024 \pm 0.002 (0.60 \pm 0.05) | 0.012 \pm 0.002 (0.30 \pm 0.05) | 0.009 \pm 0.002 (0.23 \pm 0.05) | 0.006 \pm 0.002 (0.15 \pm 0.05) |
| 0402/1005 | 0.039 \pm 0.004 (1.00 \pm 0.10) | 0.020 \pm 0.004 (0.50 \pm 0.10) | 0.013 \pm 0.004 (0.32 \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) | 0.018 \pm 0.004 (0.45 \pm 0.10) | 0.012 \pm 0.008 (0.30 \pm 0.20) |

TFI Series

| <i>AEM Part Number</i> | <i>L, nH</i> | <i>Tolerance</i> | <i>Min. Q</i> | <i>Test Frequency MHz</i> | <i>Min. SRF GHz</i> | <i>Max. R_{DC} Ω</i> | <i>Max. I A</i> |
|------------------------|--------------|------------------|---------------|---------------------------|---------------------|------------------------------|-----------------|
| TFI0201C0N1 | 0.1 | B, C, S | 8 | 500 | 9 | 0.20 | 0.40 |
| TFI0201C0N2 | 0.2 | B, C, S | 8 | 500 | 9 | 0.20 | 0.40 |
| TFI0201C0N3 | 0.3 | B, C, S | 8 | 500 | 9 | 0.20 | 0.40 |
| TFI0201C0N4 | 0.4 | B, C, S | 8 | 500 | 9 | 0.25 | 0.35 |
| TFI0201C0N5 | 0.5 | B, C, S | 8 | 500 | 9 | 0.25 | 0.35 |
| TFI0201C0N6 | 0.6 | B, C, S | 8 | 500 | 9 | 0.25 | 0.35 |
| TFI0201C0N7 | 0.7 | B, C, S | 8 | 500 | 9 | 0.30 | 0.30 |
| TFI0201C0N8 | 0.8 | B, C, S | 8 | 500 | 9 | 0.30 | 0.30 |
| TFI0201C0N9 | 0.9 | B, C, S | 8 | 500 | 9 | 0.30 | 0.30 |
| TFI0201C1N0 | 1.0 | B, C, S | 8 | 500 | 9 | 0.30 | 0.30 |
| TFI0201C1N1 | 1.1 | B, C, S | 8 | 500 | 9 | 0.35 | 0.30 |
| TFI0201C1N2 | 1.2 | B, C, S | 8 | 500 | 9 | 0.35 | 0.30 |
| TFI0201C1N3 | 1.3 | B, C, S | 8 | 500 | 9 | 0.45 | 0.25 |
| TFI0201C1N4 | 1.4 | B, C, S | 8 | 500 | 9 | 0.45 | 0.25 |
| TFI0201C1N5 | 1.5 | B, C, S | 8 | 500 | 9 | 0.45 | 0.25 |
| TFI0201C1N6 | 1.6 | B, C, S | 8 | 500 | 9 | 0.55 | 0.20 |
| TFI0201C1N7 | 1.7 | B, C, S | 8 | 500 | 9 | 0.55 | 0.20 |
| TFI0201C1N8 | 1.8 | B, C, S | 8 | 500 | 9 | 0.55 | 0.20 |
| TFI0201C1N9 | 1.9 | B, C, S | 8 | 500 | 9 | 0.55 | 0.20 |
| TFI0201C2N0 | 2.0 | B, C, S | 8 | 500 | 8 | 0.70 | 0.20 |
| TFI0201C2N1 | 2.1 | B, C, S | 8 | 500 | 8 | 0.70 | 0.20 |
| TFI0201C2N2 | 2.2 | B, C, S | 8 | 500 | 8 | 0.70 | 0.20 |
| TFI0201C2N3 | 2.3 | B, C, S | 8 | 500 | 8 | 0.80 | 0.15 |
| TFI0201C2N4 | 2.4 | B, C, S | 8 | 500 | 8 | 0.80 | 0.15 |
| TFI0201C2N5 | 2.5 | B, C, S | 8 | 500 | 8 | 0.80 | 0.15 |
| TFI0201C2N6 | 2.6 | B, C, S | 8 | 500 | 8 | 0.80 | 0.15 |
| TFI0201C2N7 | 2.7 | B, C, S | 8 | 500 | 8 | 0.80 | 0.15 |
| TFI0201C2N8 | 2.8 | B, C, S | 8 | 500 | 6 | 1.00 | 0.15 |
| TFI0201C2N9 | 2.9 | B, C, S | 8 | 500 | 6 | 1.00 | 0.15 |
| TFI0201C3N0 | 3.0 | B, C, S | 8 | 500 | 6 | 1.00 | 0.15 |
| TFI0201C3N1 | 3.1 | B, C, S | 8 | 500 | 6 | 1.00 | 0.15 |
| TFI0201C3N2 | 3.2 | B, C, S | 8 | 500 | 6 | 1.00 | 0.15 |
| TFI0201C3N3 | 3.3 | B, C, S | 8 | 500 | 6 | 1.00 | 0.15 |
| TFI0201C3N4 | 3.4 | B, C, S | 8 | 500 | 6 | 1.20 | 0.15 |

Other values may be available upon request.

TFI Series

| <i>AEM Part Number</i> | <i>L, nH</i> | <i>Tolerance</i> | <i>Min. Q</i> | <i>Test Frequency MHz</i> | <i>Min. SRF GHz</i> | <i>Max. R_{DC} Ω</i> | <i>Max. I A</i> |
|------------------------|--------------|------------------|---------------|---------------------------|---------------------|------------------------------|-----------------|
| TFI0201C3N5 | 3.5 | B, C, S | 8 | 500 | 6 | 1.20 | 0.15 |
| TFI0201C3N6 | 3.6 | B, C, S | 8 | 500 | 6 | 1.20 | 0.15 |
| TFI0201C3N7 | 3.7 | B, C, S | 8 | 500 | 6 | 1.20 | 0.15 |
| TFI0201C3N8 | 3.8 | B, C, S | 8 | 500 | 6 | 1.20 | 0.15 |
| TFI0201C3N9 | 3.9 | B, C, S | 8 | 500 | 6 | 1.20 | 0.15 |
| TFI0201C4N0 | 4.0 | B, C, S | 8 | 500 | 6 | 1.20 | 0.15 |
| TFI0201C4N4 | 4.4 | B, C, S | 8 | 500 | 6 | 1.30 | 0.15 |
| TFI0201C4N7 | 4.7 | B, C, S | 8 | 500 | 6 | 1.40 | 0.13 |
| TFI0201C4N9 | 4.9 | B, C, S | 8 | 500 | 6 | 1.60 | 0.13 |
| TFI0201C5N6 | 5.6 | G, J | 8 | 500 | 4 | 1.80 | 0.13 |
| TFI0201C6N1 | 6.1 | G, J | 8 | 500 | 4 | 2.00 | 0.12 |
| TFI0201C6N8 | 6.8 | G, J | 8 | 500 | 4 | 2.30 | 0.11 |
| TFI0201C7N4 | 7.4 | G, J | 8 | 500 | 4 | 2.80 | 0.11 |
| TFI0201C8N2 | 8.2 | G, J | 8 | 500 | 3 | 3.00 | 0.11 |
| TFI0201C9N1 | 9.1 | G, J | 8 | 500 | 3 | 3.25 | 0.10 |
| TFI0201C9N2 | 9.2 | G, J | 8 | 500 | 3 | 3.25 | 0.10 |
| TFI0201C10N | 10 | G, J | 8 | 500 | 2 | 3.50 | 0.08 |
| TFI0402C0N2 | 0.2 | B, C, S | 13 | 500 | 14 | 0.10 | 0.80 |
| TFI0402C0N3 | 0.3 | B, C, S | 13 | 500 | 14 | 0.10 | 0.80 |
| TFI0402C0N4 | 0.4 | B, C, S | 13 | 500 | 14 | 0.10 | 0.80 |
| TFI0402C0N5 | 0.5 | B, C, S | 13 | 500 | 14 | 0.15 | 0.70 |
| TFI0402C0N8 | 0.8 | B, C, S | 13 | 500 | 14 | 0.15 | 0.70 |
| TFI0402C0N9 | 0.9 | B, C, S | 13 | 500 | 14 | 0.15 | 0.70 |
| TFI0402C1N0 | 1.0 | B, C, S | 13 | 500 | 12 | 0.15 | 0.70 |
| TFI0402C1N1 | 1.1 | B, C, S | 13 | 500 | 12 | 0.15 | 0.70 |
| TFI0402C1N2 | 1.2 | B, C, S | 13 | 500 | 12 | 0.15 | 0.70 |
| TFI0402C1N3 | 1.3 | B, C, S | 13 | 500 | 10 | 0.25 | 0.70 |
| TFI0402C1N4 | 1.4 | B, C, S | 13 | 500 | 10 | 0.25 | 0.70 |
| TFI0402C1N5 | 1.5 | B, C, S | 13 | 500 | 10 | 0.25 | 0.70 |
| TFI0402C1N6 | 1.6 | B, C, S | 13 | 500 | 10 | 0.25 | 0.56 |
| TFI0402C1N7 | 1.7 | B, C, S | 13 | 500 | 10 | 0.25 | 0.56 |
| TFI0402C1N8 | 1.8 | B, C, S | 13 | 500 | 10 | 0.25 | 0.56 |
| TFI0402C1N9 | 1.9 | B, C, S | 13 | 500 | 8 | 0.35 | 0.56 |
| TFI0402C2N0 | 2.0 | B, C, S | 13 | 500 | 8 | 0.35 | 0.56 |

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| <i>AEM Part Number</i> | <i>L, nH</i> | <i>Tolerance</i> | <i>Min. Q</i> | <i>Test Frequency MHz</i> | <i>Min. SRF GHz</i> | <i>Max. R_{DC} Ω</i> | <i>Max. I A</i> |
|------------------------|--------------|------------------|---------------|---------------------------|---------------------|------------------------------|-----------------|
| TFI0402C2N1 | 2.1 | B, C, S | 13 | 500 | 8 | 0.35 | 0.44 |
| TFI0402C2N2 | 2.2 | B, C, S | 13 | 500 | 8 | 0.35 | 0.44 |
| TFI0402C2N3 | 2.3 | B, C, S | 13 | 500 | 8 | 0.35 | 0.44 |
| TFI0402C2N4 | 2.4 | B, C, S | 13 | 500 | 8 | 0.35 | 0.44 |
| TFI0402C2N5 | 2.5 | B, C, S | 13 | 500 | 8 | 0.35 | 0.44 |
| TFI0402C2N6 | 2.6 | B, C, S | 13 | 500 | 8 | 0.35 | 0.44 |
| TFI0402C2N7 | 2.7 | B, C, S | 13 | 500 | 8 | 0.35 | 0.44 |
| TFI0402C2N8 | 2.8 | B, C, S | 13 | 500 | 6 | 0.45 | 0.38 |
| TFI0402C2N9 | 2.9 | B, C, S | 13 | 500 | 6 | 0.45 | 0.38 |
| TFI0402C3N0 | 3.0 | B, C, S | 13 | 500 | 6 | 0.45 | 0.38 |
| TFI0402C3N1 | 3.1 | B, C, S | 13 | 500 | 6 | 0.45 | 0.38 |
| TFI0402C3N2 | 3.2 | B, C, S | 13 | 500 | 6 | 0.45 | 0.38 |
| TFI0402C3N3 | 3.3 | B, C, S | 13 | 500 | 6 | 0.45 | 0.38 |
| TFI0402C3N4 | 3.4 | B, C, S | 13 | 500 | 6 | 0.55 | 0.38 |
| TFI0402C3N5 | 3.5 | B, C, S | 13 | 500 | 6 | 0.55 | 0.38 |
| TFI0402C3N6 | 3.6 | B, C, S | 13 | 500 | 6 | 0.55 | 0.38 |
| TFI0402C3N7 | 3.7 | B, C, S | 13 | 500 | 6 | 0.55 | 0.34 |
| TFI0402C3N8 | 3.8 | B, C, S | 13 | 500 | 6 | 0.55 | 0.34 |
| TFI0402C3N9 | 3.9 | B, C, S | 13 | 500 | 6 | 0.55 | 0.34 |
| TFI0402C4N3 | 4.3 | B, C, S | 13 | 500 | 6 | 0.65 | 0.32 |
| TFI0402C4N7 | 4.7 | B, C, S | 13 | 500 | 6 | 0.65 | 0.32 |
| TFI0402C5N4 | 5.4 | B, C, S | 13 | 500 | 6 | 0.85 | 0.28 |
| TFI0402C5N6 | 5.6 | B, C, S | 13 | 500 | 6 | 0.85 | 0.28 |
| TFI0402C5N6 | 5.9 | B, C, S | 13 | 500 | 6 | 0.85 | 0.28 |
| TFI0402C6N5 | 6.5 | B, C, S | 13 | 500 | 6 | 1.05 | 0.26 |
| TFI0402C6N8 | 6.8 | B, C, S | 13 | 500 | 6 | 1.05 | 0.26 |
| TFI0402C7N2 | 7.2 | B, C, S | 13 | 500 | 6 | 1.05 | 0.26 |
| TFI0402C8N0 | 8.0 | B, C, S | 13 | 500 | 5.5 | 1.25 | 0.22 |
| TFI0402C8N1 | 8.1 | B, C, S | 13 | 500 | 5.5 | 1.25 | 0.22 |
| TFI0402C8N2 | 8.2 | B, C, S | 13 | 500 | 5.5 | 1.25 | 0.22 |
| TFI0402C9N1 | 9.1 | B, C, S | 13 | 500 | 5.5 | 1.25 | 0.22 |
| TFI0402C10N | 10 | F, G, H, J | 13 | 500 | 4.5 | 1.35 | 0.20 |
| TFI0402C10N8 | 10.8 | F, G, H, J | 13 | 500 | 4.5 | 1.35 | 0.20 |
| TFI0402C12N | 12 | F, G, H, J | 13 | 500 | 3.7 | 1.55 | 0.18 |
| TFI0402C13N8 | 13.8 | F, G, H, J | 13 | 500 | 3.7 | 1.75 | 0.18 |
| TFI0402C15N | 15 | F, G, H, J | 13 | 500 | 3.3 | 1.75 | 0.13 |
| TFI0402C17N | 17 | F, G, H, J | 13 | 500 | 3.1 | 1.95 | 0.10 |

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|------------------------|--------------|------------------|---------------|---------------------------|---------------------|------------------------------|-----------------|
| TFI0402C18N | 18 | F, G, H, J | 13 | 500 | 3.1 | 2.15 | 0.10 |
| TFI0402C20N8 | 20.8 | F, G, H, J | 13 | 500 | 2.8 | 2.55 | 0.09 |
| TFI0402C22N | 22 | F, G, H, J | 13 | 500 | 2.8 | 2.65 | 0.09 |
| TFI0402C27N | 27 | F, G, H, J | 13 | 500 | 2.5 | 3.25 | 0.075 |
| TFI0402C33N | 33 | J | 13 | 500 | 2.5 | 4.50 | 0.075 |
| TFI0603C1N0 | 1.0 | B, C, S | 15 | 300 | 13 | 0.35 | 0.80 |
| TFI0603C1N2 | 1.2 | B, C, S | 15 | 300 | 13 | 0.35 | 0.80 |
| TFI0603C1N5 | 1.5 | B, C, S | 15 | 300 | 10 | 0.35 | 0.80 |
| TFI0603C1N8 | 1.8 | B, C, S | 15 | 300 | 10 | 0.35 | 0.30 |
| TFI0603C2N2 | 2.2 | B, C, S | 15 | 300 | 8 | 0.35 | 0.30 |
| TFI0603C2N7 | 2.7 | B, C, S | 15 | 300 | 6 | 0.45 | 0.30 |
| TFI0603C3N3 | 3.3 | B, C, S | 15 | 300 | 6 | 0.45 | 0.30 |
| TFI0603C3N9 | 3.9 | B, C, S | 15 | 300 | 6 | 0.45 | 0.30 |
| TFI0603C4N7 | 4.7 | B, C, S | 15 | 300 | 5 | 0.55 | 0.30 |
| TFI0603C5N6 | 5.6 | B, C, S | 15 | 300 | 5 | 0.65 | 0.30 |
| TFI0603C6N8 | 6.8 | B, C, S | 15 | 300 | 5 | 0.75 | 0.30 |
| TFI0603C8N2 | 8.2 | B, C, S | 15 | 300 | 4 | 0.95 | 0.30 |
| TFI0603C10N | 10 | F, G, H, J | 15 | 300 | 4 | 0.95 | 0.30 |
| TFI0603C12N | 12 | F, G, H, J | 15 | 300 | 3 | 1.05 | 0.30 |
| TFI0603C15N | 15 | F, G, H, J | 15 | 300 | 3 | 1.35 | 0.30 |
| TFI0603C18N | 18 | F, G, H, J | 15 | 300 | 2 | 1.65 | 0.30 |
| TFI0603C22N | 22 | F, G, H, J | 15 | 300 | 2 | 1.95 | 0.25 |
| TFI0603C27N | 27 | F, G, H, J | 15 | 300 | 2 | 2.35 | 0.25 |
| TFI0603C33N | 33 | F, G, H, J | 15 | 300 | 1.5 | 2.75 | 0.25 |
| TFI0603C39N | 39 | F, G, H, J | 15 | 300 | 1.5 | 3.00 | 0.20 |
| TFI0603C47N | 47 | F, G, H, J | 15 | 300 | 1.5 | 3.00 | 0.20 |
| TFI0603C56N | 56 | F, G, H, J | 15 | 300 | 1 | 5.00 | 0.15 |
| TFI0603C68N | 68 | F, G, H, J | 15 | 300 | 1 | 5.00 | 0.15 |
| TFI0603CR10 | 100 | G, H, J | 15 | 300 | 1 | 7.50 | 0.10 |

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