

SMD Wire Wound Ceramic Chip Inductors IWC0402 Series

APPLICATIONS

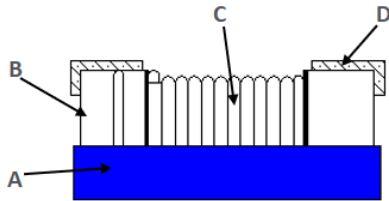
Resonant circuits, impedance matching for

- Antenna amplifiers
- Multimedia
- Wireless communication systems

FEATURES

- High resonance frequency
- Narrow inductance tolerance
- Suitable for lead-free reflow soldering
- RoHS-compatible

MATERIAL LIST



- (A) Epoxy
- (B) Ceramic
- (C) Wire
- (D) Terminal

Part Numbering

| IWC | 0402 | D | 24N | R | -3□ |
|---------------------|-----------|---|---|--------------------------|--|
| Product Series Code | Size Code | Rated Current Code | Inductance Value Code | Packing Code R-Tape&Reel | Additional Description |
| | | A ≤ 100mA B=200mA C=300mA D=400mA E=500mA F=600mA G=700mA H=800mA I=900mA | 0N3=0.3nH 6N8=6.8nH 24N=24nH R10=100nH | | □-Tolerance Code G - ±2% J - ±5% |

Notes

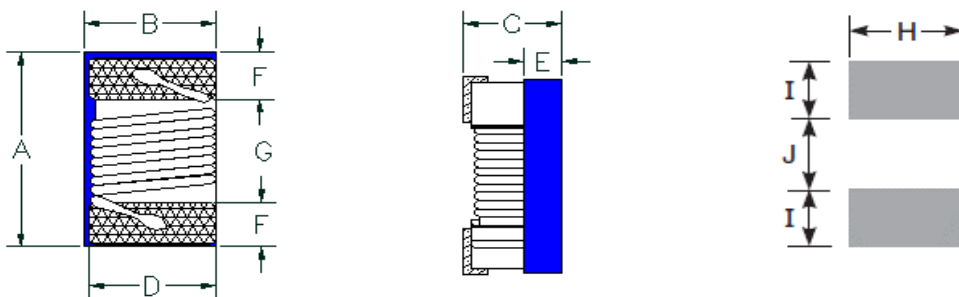
Standard testing conditions , unless otherwise specified

- Temperature: 15 °C to 35°C
- Humidity: 25% to 85% (RH)
- L、 Q、 SRF : Agilent E4991A+ Agilent 16197A
- Operating Temperature: -40 °C to +125 °C
- Storage Temperature: -10 °C to +40 °C
- Products should be used within 12 months, from the time of delivery
- Cosmetic specification refer to WI-QA-124

1.SPECIFICATION

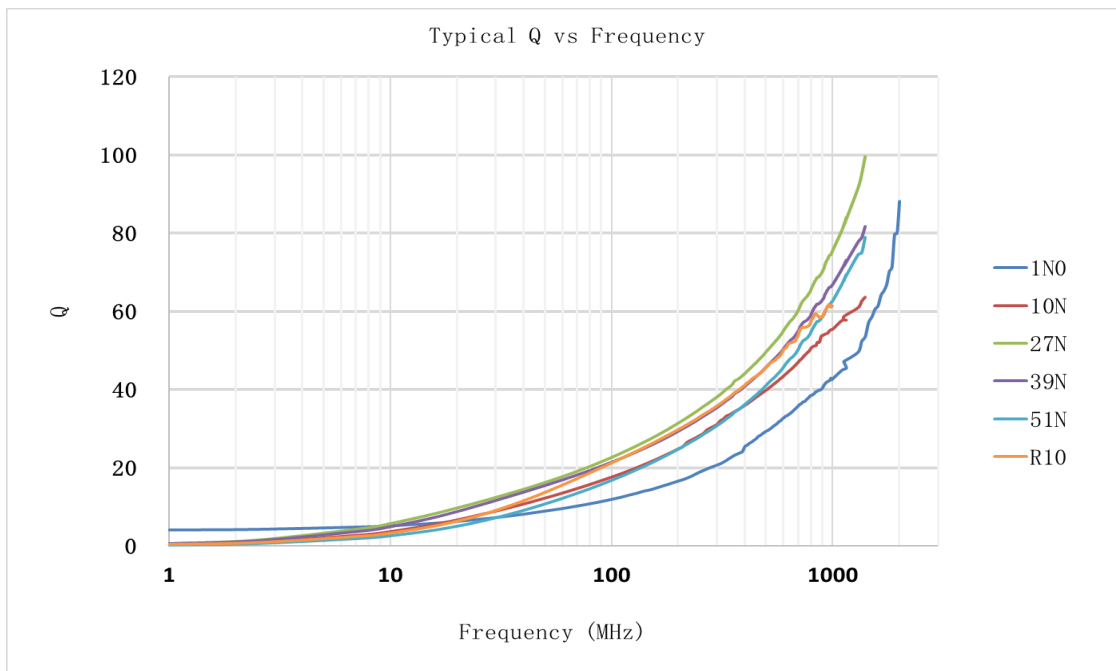
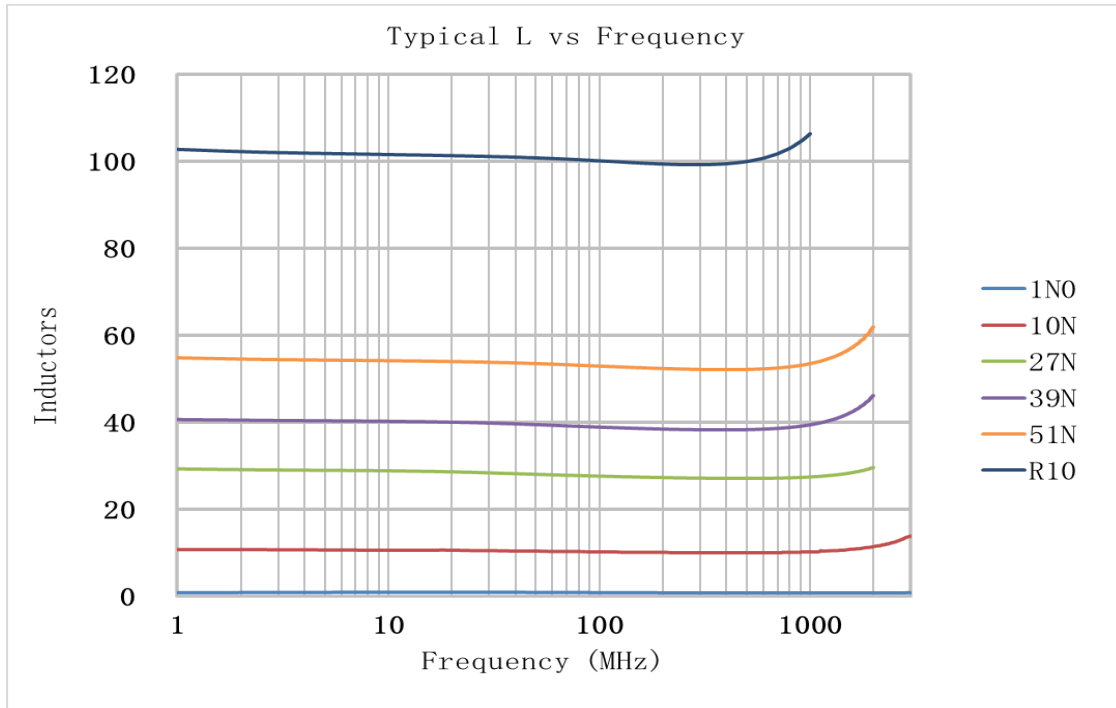
| Part Number | L (nH) | Tolerance | L Test Fre (MHz) | Q Min | Q Test Fre (MHz) | DCR Max (Ω) | Rated current (mA) | SRF (MHz) |
|-----------------|--------|-----------|------------------|-------|------------------|----------------------|--------------------|-----------|
| IWC0402D22NR-3G | 22 | $\pm 2\%$ | 250 | 25 | 250 | 0.3 | 400 | 2800 |
| IWC0402D22NR-3J | 22 | $\pm 5\%$ | 250 | 25 | 250 | 0.3 | 400 | 2800 |
| IWC0402D27NR-3G | 27 | $\pm 2\%$ | 250 | 24 | 250 | 0.4 | 400 | 2480 |
| IWC0402D27NR-3J | 27 | $\pm 5\%$ | 250 | 24 | 250 | 0.4 | 400 | 2480 |
| IWC0402D33NR-3G | 33 | $\pm 2\%$ | 250 | 24 | 250 | 0.45 | 400 | 2350 |
| IWC0402D33NR-3J | 33 | $\pm 5\%$ | 250 | 24 | 250 | 0.45 | 400 | 2350 |
| IWC0402B39NR-3G | 39 | $\pm 2\%$ | 250 | 25 | 250 | 0.55 | 200 | 2100 |
| IWC0402B39NR-3J | 39 | $\pm 5\%$ | 250 | 25 | 250 | 0.55 | 200 | 2100 |
| IWC0402A47NR-3G | 47 | $\pm 2\%$ | 250 | 20 | 250 | 0.83 | 150 | 2100 |
| IWC0402A47NR-3J | 47 | $\pm 5\%$ | 250 | 20 | 250 | 0.83 | 150 | 2100 |
| IWC0402A68NR-3G | 68 | $\pm 2\%$ | 250 | 22 | 250 | 1.12 | 100 | 1620 |
| IWC0402A68NR-3J | 68 | $\pm 5\%$ | 250 | 22 | 250 | 1.12 | 100 | 1620 |
| IWC0402A82NR-3G | 82 | $\pm 2\%$ | 250 | 20 | 250 | 1.55 | 50 | 1230 |
| IWC0402A82NR-3J | 82 | $\pm 5\%$ | 250 | 20 | 250 | 1.55 | 50 | 1230 |
| IWC0402AR10R-3G | 100 | $\pm 2\%$ | 250 | 20 | 250 | 2 | 30 | 1160 |
| IWC0402AR10R-3J | 100 | $\pm 5\%$ | 250 | 20 | 250 | 2 | 30 | 1160 |
| IWC0402AR12R-3G | 120 | $\pm 2\%$ | 100 | 20 | 100 | 2.66 | 110 | 1000 |
| IWC0402AR12R-3J | 120 | $\pm 5\%$ | 100 | 20 | 100 | 2.66 | 110 | 1000 |
| | | | | | | | | |

2.Dimensions



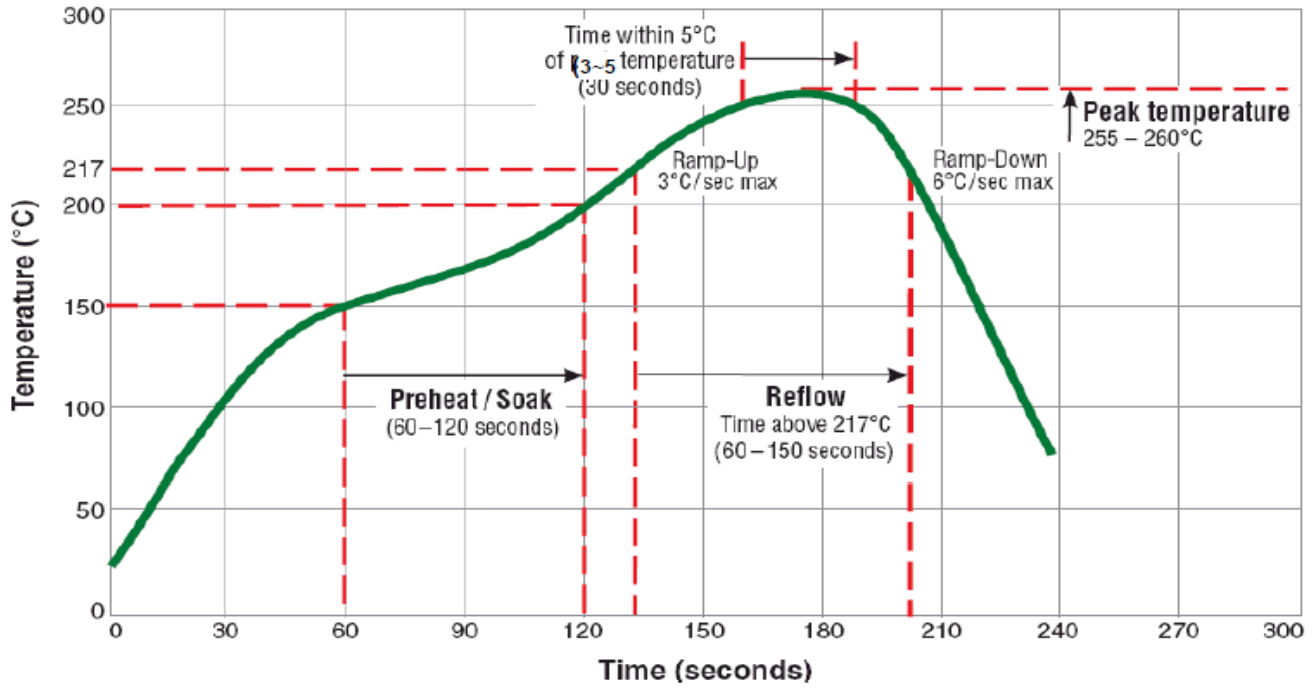
| A Max | B Max | C Max | D Ref | E Ref | F Ref | G Ref | H Ref | I Ref | J Ref |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.19 | 0.7 | 0.66 | 0.51 | 0.25 | 0.23 | 0.56 | 0.66 | 0.36 | 0.46 |

3.CURVES



4. SOLDERING

Typical RoHS Reflow Profile

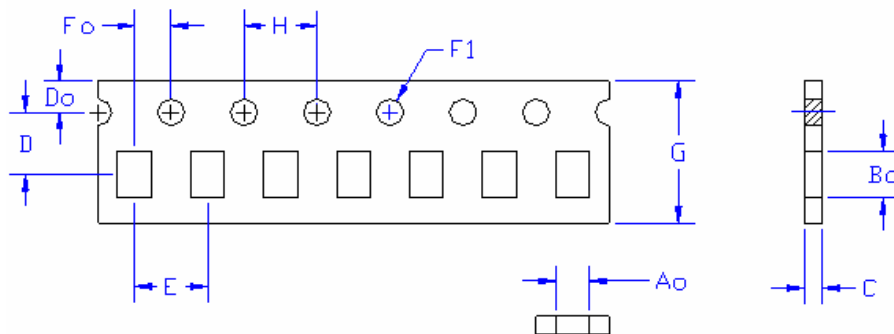


5. PACKAGING

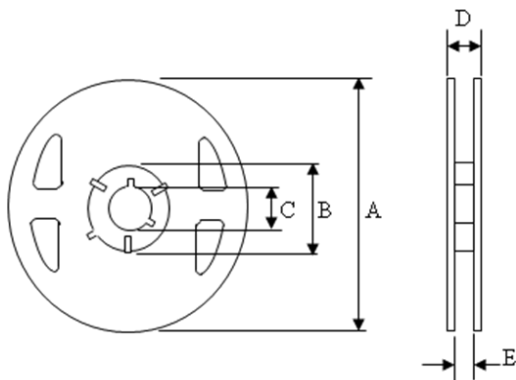
Packaging Style and Quantity

| Laird Part Number | Packaging Type | Reel Quantity | Inner box Quantity |
|-------------------|----------------|---------------|--------------------|
| IWC0402 Series | Tape & Reel | 4000 | 20000 |

Taping Condition (Typ)

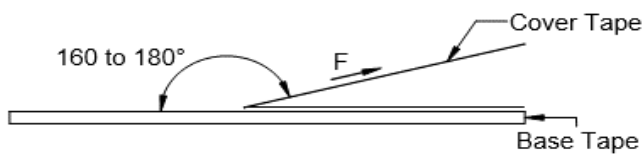


| | | | | |
|-----------|-----------|-----------|----------|-----------|
| Ao | Bo | C | D | Do |
| 0.78 | 1.35 | 0.75 | 3.5 | 1.75 |
| E | Fo | F1 | G | H |
| 4 | 2 | 1.5 | 81 | 4 |



| Reel Specifications (Typ) | |
|---------------------------|------|
| A | 180 |
| B | 60 |
| C | 13 |
| D | 14.4 |
| E | 8.4 |

Tape Strength



| Tape Width | Peeling Force |
|------------|---------------|
| 8 mm | 0.1N to 0.6N |

6.RELIABILITY

| No | Stress | Reference | Additional Requirements |
|----|-------------------------------------|-------------------------|--|
| 1 | High Temperature Exposure (Storage) | MIL-STD-202 Method 108 | 85±2°C, 168+24hours Inductance:within±10% of initial value |
| 2 | Temperature Cycling | JESD22 Method JA-104 | -40°C~+85°C, 100cycles Inductance:within±10% of initial value |
| 3 | Operational Life | MIL-PRF-27 | 85°C(Including self-heating), 168hrs, rated current applied(as the part drawing). Inductance:within±10% of initial value |
| 4 | External Visual | MIL-STD-883 Method 2009 | Inspect device construction, marking and workmanship. Electrical Test not required. |
| 5 | Physical Dimension | JESD22 Method JB-100 | Verify physical dimensions to the applicable device detail specification. Note: User(s) and Suppliers spec. Electrical Test not required. |
| 6 | Vibration | MIL-STD-202 Method 204 | 10~55Hz,1.5mm,2 hours in each 3mutually perpendicular directions,(total of 6 hours) Inductance:within±10% of initial value |
| 7 | Resistance to Soldering Heat | MIL-STD-202 Method 210 | 1. Max. 260±5°C,10±1s, 2 times 2.Solder Composition: Sn/3Ag/0.5Cu |
| 8 | Solderability | J-STD-002 | 245±5°C, 5±1sec, Solder: Sn/3.0Ag/0.5Cu |
| 9 | Electrical Characterization | User Spec. | Parametrically test per lot and sample size requirements, summary to show Min, Max, Mean and Standard deviation at room as well as Min and Max Operating temperatures. |
| 10 | Board Flex | AEC-Q200-005 | 2mm(min), Dwell:30±1 sec. |
| 11 | Terminal Strength | AEC-Q200-006 | Force:≥2.94N, Dwell:5+1 sec, X, Y direct |

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