

# Surface Mount, Multi Layer High Frequency Ceramic Inductors



## MECHANICAL SPECIFICATIONS

**Solderability:** 90 % coverage after 5 s dip in 235 °C solder following 60 s preheat at 120 °C and type R flux dip

**Resistance to Solder Heat:** 10 s in 260 °C solder, after preheat and flux above

**Terminal Strength:** 0.2 kg (0.44 lbs) for 30 s

**Beam Strength:** 0.2 kg (0.44 lbs)

**Flex:** 0.0788" [2.0 mm] min. mounted on 0.063" [1.6 mm] thick PC board

## FEATURES

- High reliability
- Surface mountable
- Reflow or wave solderable
- Tape and reel packaging per EIA specifications: 4000 pieces on 7" reel
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

## ENVIRONMENTAL SPECIFICATIONS

**Operating Temperature:** - 55 °C to 125 °C

**Thermal Shock:** 100 cycles, - 40 °C to + 85 °C

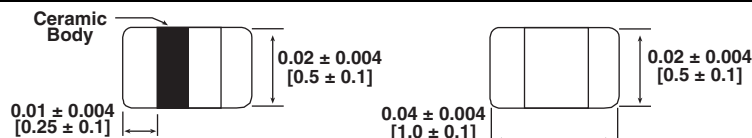
**Humidity:** + 40 °C, 85 % RH, 1000 h at full rated current

**Load Life:** 85 °C for 1000 h at full rated current

## STANDARD ELECTRICAL SPECIFICATIONS

| PART NUMBER   | IND.<br>(nH) | TOL.   | TEST<br>FREQUENCY<br>(MHz) | Q<br>MIN. | Q TYPICAL |         |          | SRF (MHz) |        | DCR<br>MAX.<br>(Ω) | RATED DC<br>CURRENT<br>MAX. (mA) |
|---------------|--------------|--------|----------------------------|-----------|-----------|---------|----------|-----------|--------|--------------------|----------------------------------|
|               |              |        |                            |           | 100 MHz   | 500 MHz | 1000 MHz | MIN.      | TYP.   |                    |                                  |
| ILC0402ER1N0S | 1.0          | 0.3 nH | 100                        | 8         | 10        | 21      | 30       | 10 000    | 18 000 | 0.12               | 300                              |
| ILC0402ER1N2S | 1.2          | 0.3 nH | 100                        | 8         | 10        | 23      | 31       | 10 000    | 17 000 | 0.12               | 300                              |
| ILC0402ER1N5S | 1.5          | 0.3 nH | 100                        | 8         | 10        | 25      | 35       | 6000      | 11 000 | 0.13               | 300                              |
| ILC0402ER1N8S | 1.8          | 0.3 nH | 100                        | 8         | 10        | 25      | 35       | 6000      | 11 000 | 0.14               | 300                              |
| ILC0402ER2N2S | 2.2          | 0.3 nH | 100                        | 8         | 10        | 23      | 32       | 6000      | 8700   | 0.16               | 300                              |
| ILC0402ER2N7S | 2.7          | 0.3 nH | 100                        | 8         | 10        | 21      | 30       | 6000      | 7800   | 0.17               | 300                              |
| ILC0402ER3N3S | 3.3          | 0.3 nH | 100                        | 8         | 10        | 22      | 31       | 6000      | 6400   | 0.19               | 300                              |
| ILC0402ER3N9S | 3.9          | 0.3 nH | 100                        | 8         | 10        | 19      | 26       | 4000      | 5800   | 0.22               | 300                              |
| ILC0402ER4N7S | 4.7          | 0.3 nH | 100                        | 8         | 10        | 19      | 26       | 4000      | 5100   | 0.24               | 300                              |
| ILC0402ER5N6S | 5.6          | 0.3 nH | 100                        | 8         | 10        | 20      | 26       | 4000      | 4700   | 0.27               | 300                              |
| ILC0402ER6N8J | 6.8          | 5 %    | 100                        | 8         | 10        | 19      | 26       | 3900      | 4200   | 0.32               | 250                              |
| ILC0402ER8N2J | 8.2          | 5 %    | 100                        | 8         | 10        | 22      | 29       | 3600      | 3800   | 0.37               | 250                              |
| ILC0402ER10NJ | 10           | 5 %    | 100                        | 8         | 10        | 18      | 23       | 3200      | 3400   | 0.42               | 250                              |
| ILC0402ER12NJ | 12           | 5 %    | 100                        | 8         | 10        | 18      | 23       | 2700      | 2900   | 0.50               | 250                              |
| ILC0402ER15NJ | 15           | 5 %    | 100                        | 8         | 10        | 19      | 24       | 2300      | 2500   | 0.55               | 250                              |
| ILC0402ER18NJ | 18           | 5 %    | 100                        | 8         | 10        | 20      | 25       | 2100      | 2400   | 0.65               | 200                              |
| ILC0402ER22NJ | 22           | 5 %    | 100                        | 8         | 10        | 22      | 26       | 1900      | 2200   | 0.80               | 200                              |
| ILC0402ER27NJ | 27           | 5 %    | 100                        | 8         | 10        | 22      | 25       | 1600      | 2000   | 0.90               | 200                              |
| ILC0402ER33NJ | 33           | 5 %    | 100                        | 8         | 10        | 19      | 20       | 1300      | 1800   | 1.00               | 200                              |
| ILC0402ER39NJ | 39           | 5 %    | 100                        | 8         | 10        | 21      | 20       | 1200      | 1600   | 1.20               | 150                              |
| ILC0402ER47NJ | 47           | 5 %    | 100                        | 8         | 10        | 18      | 15       | 1000      | 1500   | 1.30               | 150                              |
| ILC0402ER56NJ | 56           | 5 %    | 100                        | 8         | 11        | 21      | 14       | 750       | 1200   | 1.40               | 150                              |
| ILC0402ER68NJ | 68           | 5 %    | 100                        | 8         | 11        | 18      | 12       | 750       | 1250   | 1.40               | 150                              |
| ILC0402ER82NJ | 82           | 5 %    | 100                        | 8         | 11        | 19      | 8        | 600       | 1100   | 2.00               | 100                              |
| ILC0402ERR10J | 100          | 5 %    | 100                        | 8         | 11        | 17      | 2        | 600       | 1000   | 2.00               | 100                              |

## DIMENSIONS in inches [millimeters]



## DESCRIPTION

| ILC-0402 | 10 nH            | ± 10 %               | ER           | e3                            |
|----------|------------------|----------------------|--------------|-------------------------------|
| MODEL    | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC LEAD (Pb)-FREE STANDARD |

## GLOBAL PART NUMBER

|                |   |   |      |   |   |   |              |   |                  |   |   |      |
|----------------|---|---|------|---|---|---|--------------|---|------------------|---|---|------|
| I              | L | C | 0    | 4 | 0 | 2 | E            | R | 1                | 0 | N | K    |
| PRODUCT FAMILY |   |   | SIZE |   |   |   | PACKAGE CODE |   | INDUCTANCE VALUE |   |   | TOL. |



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