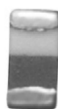




# Surface Mount, Multi Layer High Frequency Ceramic Inductors



## MECHANICAL SPECIFICATIONS

**Solderability:** 95 % coverage after 3 s  $\pm$  1 s dip in 240 °C  $\pm$  5 °C solder following 60 s preheat at 150 °C and type R flux dip

**Resistance to Solder Heat:** 6 s  $\pm$  1 s in 265 °C  $\pm$  3 °C solder after preheat and flux above

**Terminal Strength:** 1.02 kg for 10 s

**Flex:** 3.0 mm min. mounted on 0.8 mm thick PC board

## ENVIRONMENTAL SPECIFICATIONS

**Operating Temperature:** -55 °C to +125 °C (including self-temperature rise)

**Thermal Shock:** 1000 cycles, -55 °C  $\pm$  5 °C to +125 °C  $\pm$  5 °C

**Humidity:** 85 °C  $\pm$  2 °C, 85 %  $\pm$  5 % RH, 1000 h  $\pm$  12 h

**Load Life:** 125 °C  $\pm$  2 °C for 1000 h  $\pm$  12 h at full rated current

## FEATURES

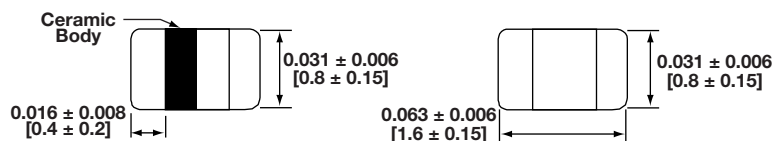
- High reliability
- Surface mountable
- Reflow or wave solderable
- Tape and reel packaging per EIA specifications: 4000 pieces on 7" reel
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



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

## STANDARD ELECTRICAL SPECIFICATIONS

| PART NUMBER   | IND. (nH) | TOL.   | TEST FREQUENCY (MHz) | Q MIN. | Q TYPICAL |         |          | SRF (MHz) |        | DCR MAX. ( $\Omega$ ) | RATED DC CURRENT MAX. (mA) |
|---------------|-----------|--------|----------------------|--------|-----------|---------|----------|-----------|--------|-----------------------|----------------------------|
|               |           |        |                      |        | 100 MHz   | 500 MHz | 1000 MHz | MIN.      | TYP.   |                       |                            |
| ILC0603ER1N0S | 1.0       | 0.3 nH | 100                  | 8      | 15        | 43      | 63       | 10 000    | 15 000 | 0.05                  | 300                        |
| ILC0603ER1N2S | 1.2       | 0.3 nH | 100                  | 8      | 14        | 38      | 55       | 10 000    | 14 000 | 0.05                  | 300                        |
| ILC0603ER1N5S | 1.5       | 0.3 nH | 100                  | 8      | 11        | 28      | 40       | 6000      | 13 000 | 0.10                  | 300                        |
| ILC0603ER1N8S | 1.8       | 0.3 nH | 100                  | 8      | 10        | 24      | 35       | 6000      | 11 000 | 0.10                  | 300                        |
| ILC0603ER2N2S | 2.2       | 0.3 nH | 100                  | 8      | 14        | 35      | 40       | 6000      | 10 000 | 0.10                  | 300                        |
| ILC0603ER2N7S | 2.7       | 0.3 nH | 100                  | 10     | 12        | 29      | 45       | 6000      | 7000   | 0.10                  | 300                        |
| ILC0603ER3N3S | 3.3       | 0.3 nH | 100                  | 10     | 16        | 40      | 47       | 4000      | 5900   | 0.12                  | 300                        |
| ILC0603ER3N9S | 3.9       | 0.3 nH | 100                  | 10     | 11        | 25      | 35       | 3500      | 4500   | 0.14                  | 300                        |
| ILC0603ER4N7S | 4.7       | 0.3 nH | 100                  | 10     | 11        | 26      | 35       | 3500      | 4500   | 0.16                  | 300                        |
| ILC0603ER5N6S | 5.6       | 0.3 nH | 100                  | 10     | 15        | 36      | 46       | 3500      | 4000   | 0.18                  | 300                        |
| ILC0603ER6N8J | 6.8       | 5 %    | 100                  | 10     | 15        | 38      | 47       | 3000      | 3600   | 0.22                  | 300                        |
| ILC0603ER8N2J | 8.2       | 5 %    | 100                  | 10     | 13        | 31      | 41       | 3000      | 3500   | 0.24                  | 300                        |
| ILC0603ER10NJ | 10        | 5 %    | 100                  | 12     | 15        | 34      | 47       | 2800      | 3000   | 0.26                  | 300                        |
| ILC0603ER12NJ | 12        | 5 %    | 100                  | 12     | 12        | 27      | 49       | 2000      | 2500   | 0.28                  | 300                        |
| ILC0603ER15NJ | 15        | 5 %    | 100                  | 12     | 15        | 30      | 36       | 2000      | 2200   | 0.32                  | 300                        |
| ILC0603ER18NJ | 18        | 5 %    | 100                  | 12     | 15        | 28      | 31       | 1800      | 2000   | 0.35                  | 300                        |
| ILC0603ER22NJ | 22        | 5 %    | 100                  | 12     | 17        | 34      | 36       | 1800      | 1900   | 0.40                  | 300                        |
| ILC0603ER27NJ | 27        | 5 %    | 100                  | 12     | 15        | 31      | 30       | 1500      | 1700   | 0.45                  | 300                        |
| ILC0603ER33NJ | 33        | 5 %    | 100                  | 12     | 15        | 28      | 24       | 1200      | 1500   | 0.55                  | 300                        |
| ILC0603ER39NJ | 39        | 5 %    | 100                  | 12     | 14        | 31      | 28       | 1100      | 1300   | 0.60                  | 300                        |
| ILC0603ER47NJ | 47        | 5 %    | 100                  | 12     | 17        | 31      | 28       | 900       | 1300   | 0.70                  | 300                        |
| ILC0603ER56NJ | 56        | 5 %    | 100                  | 12     | 19        | 34      | 26       | 900       | 1200   | 0.75                  | 300                        |
| ILC0603ER68NJ | 68        | 5 %    | 100                  | 12     | 17        | 30      | 20       | 700       | 1000   | 0.85                  | 300                        |
| ILC0603ER82NJ | 82        | 5 %    | 100                  | 12     | 16        | 29      | 18       | 600       | 1000   | 0.95                  | 300                        |
| ILC0603ERR10J | 100       | 5 %    | 100                  | 12     | 16        | 24      | 3        | 600       | 800    | 1.00                  | 300                        |
| ILC0603ERR12J | 120       | 5 %    | 100                  | 8      | 17        | 21      | -        | 500       | 800    | 1.20                  | 300                        |
| ILC0603ERR15J | 150       | 5 %    | 100                  | 8      | 19        | 20      | -        | 500       | 700    | 1.20                  | 300                        |
| ILC0603ERR18J | 180       | 5 %    | 100                  | 8      | 18        | 13      | -        | 400       | 600    | 1.30                  | 300                        |
| ILC0603ERR22J | 220       | 5 %    | 100                  | 8      | 18        | -       | -        | 400       | 500    | 1.50                  | 300                        |
| ILC0603ERR27J | 270       | 5 %    | 100                  | 8      | 19        | -       | -        | 350       | 490    | 1.90                  | 300                        |

**DIMENSIONS** in inches [millimeters]

**DESCRIPTION**

|                 |                  |                      |              |                                |
|-----------------|------------------|----------------------|--------------|--------------------------------|
| <b>ILC-0603</b> | <b>10 nH</b>     | <b>± 5 %</b>         | <b>ER</b>    | <b>e3</b>                      |
| MODEL           | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC® LEAD (Pb)-FREE STANDARD |

**GLOBAL PART NUMBER**

|                |          |          |          |          |          |          |              |          |                  |          |          |          |
|----------------|----------|----------|----------|----------|----------|----------|--------------|----------|------------------|----------|----------|----------|
| <b>I</b>       | <b>L</b> | <b>C</b> | <b>0</b> | <b>6</b> | <b>0</b> | <b>3</b> | <b>E</b>     | <b>R</b> | <b>1</b>         | <b>0</b> | <b>N</b> | <b>J</b> |
| PRODUCT FAMILY |          |          | SIZE     |          |          |          | PACKAGE CODE |          | INDUCTANCE VALUE |          |          | TOL.     |



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