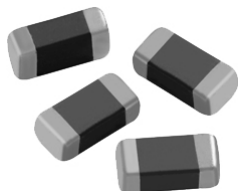


## Monolithic Chip Inductors



### MECHANICAL SPECIFICATIONS

**Solderability:** 90 % coverage after 5 s dip in 235 °C solder following 60 s preheat at 120 °C to 150 °C and type R flux dip

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

**Termination:** 100 % Sn

**Terminal Strength:** 0.5 kg for 30 s

**Beam Strength:** 0.3 kg

### FEATURES

- High reliability
- Surface mountable
- Magnetically self shielded
- Nickel barrier plating virtually eliminates silver migration
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



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

### ENVIRONMENTAL SPECIFICATIONS

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

**Thermal Shock:** -40 °C to +85 °C

**Humidity:** 90 % RH at 40 °C, 1000 h at full rated current

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

### STANDARD ELECTRICAL SPECIFICATIONS

| INDUCTANCE<br>( $\mu$ H) | TOL. | THICKNESS "D"<br>(INCHES [mm])     | TEST FREQ.<br>(MHz) | Q<br>MIN. | SRF MIN.<br>(MHz) | DCR<br>MAX.<br>( $\Omega$ ) | RATED<br>DC CURRENT<br>(mA) |
|--------------------------|------|------------------------------------|---------------------|-----------|-------------------|-----------------------------|-----------------------------|
|                          |      |                                    | L AND Q             |           |                   |                             |                             |
| 0.047                    | 20 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 50                  | 10        | 260               | 0.15                        | 50                          |
| 0.068                    | 20 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 50                  | 10        | 250               | 0.25                        | 50                          |
| 0.082                    | 20 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 50                  | 10        | 245               | 0.25                        | 50                          |
| 0.10                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 276               | 0.50                        | 50                          |
| 0.12                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 236               | 0.50                        | 50                          |
| 0.15                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 207               | 0.60                        | 50                          |
| 0.18                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 190               | 0.60                        | 50                          |
| 0.22                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 173               | 0.80                        | 50                          |
| 0.27                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 157               | 0.80                        | 50                          |
| 0.33                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 144               | 0.85                        | 35                          |
| 0.39                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 127               | 1.00                        | 35                          |
| 0.47                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 121               | 1.35                        | 35                          |
| 0.56                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 110               | 1.55                        | 35                          |
| 0.68                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 104               | 1.70                        | 35                          |
| 0.82                     | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 25                  | 15        | 98                | 2.10                        | 35                          |
| 1.0                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10                  | 35        | 87                | 0.60                        | 25                          |
| 1.2                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10                  | 35        | 74                | 0.80                        | 25                          |
| 1.5                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10                  | 35        | 69                | 0.80                        | 25                          |
| 1.8                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10                  | 35        | 64                | 0.95                        | 25                          |
| 2.2                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10                  | 35        | 58                | 1.15                        | 15                          |
| 2.7                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10                  | 35        | 52                | 1.35                        | 15                          |
| 3.3                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10                  | 35        | 46                | 1.55                        | 15                          |
| 3.9                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10                  | 35        | 41                | 1.70                        | 15                          |
| 4.7                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10                  | 35        | 38                | 2.10                        | 15                          |
| 5.6                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 4                   | 30        | 22                | 1.55                        | 15                          |
| 6.8                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 4                   | 30        | 20                | 1.70                        | 15                          |
| 8.2                      | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 4                   | 30        | 18                | 2.10                        | 15                          |
| 10                       | 10 % | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 2                   | 30        | 17                | 2.55                        | 15                          |

### DESCRIPTION

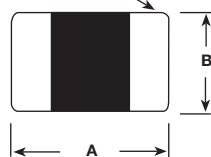
|                  |                              |                              |              |                                |
|------------------|------------------------------|------------------------------|--------------|--------------------------------|
| <b>ILSB-0603</b> | <b>3.3 <math>\mu</math>H</b> | <b><math>\pm</math> 10 %</b> | <b>ER</b>    | <b>e3</b>                      |
| MODEL            | INDUCTANCE VALUE             | INDUCTANCE TOLERANCE         | PACKAGE CODE | JEDEC® LEAD (Pb)-FREE STANDARD |

### GLOBAL PART NUMBER

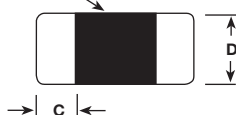
|                |          |          |          |          |          |          |          |              |          |                  |          |          |          |
|----------------|----------|----------|----------|----------|----------|----------|----------|--------------|----------|------------------|----------|----------|----------|
| <b>I</b>       | <b>L</b> | <b>S</b> | <b>B</b> | <b>0</b> | <b>6</b> | <b>0</b> | <b>3</b> | <b>E</b>     | <b>R</b> | <b>3</b>         | <b>R</b> | <b>3</b> | <b>K</b> |
| PRODUCT FAMILY |          |          |          | SIZE     |          |          |          | PACKAGE CODE |          | INDUCTANCE VALUE |          |          | TOL.     |

**DIMENSIONS** in inches [millimeters]

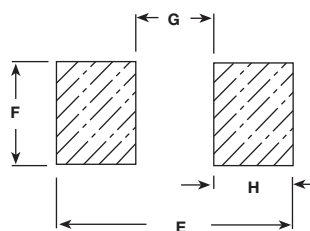
100 % Sn Termination



Ferrite Body



Dimensional Outline

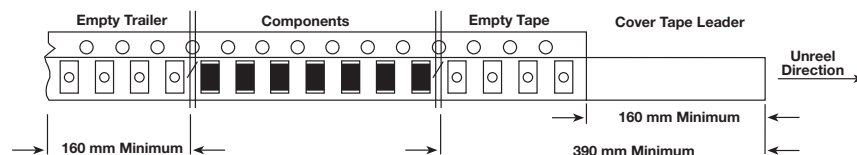
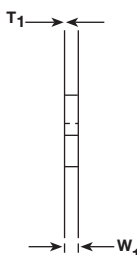
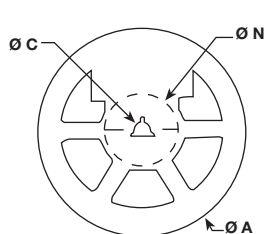
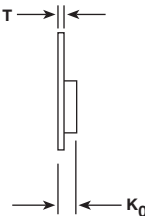
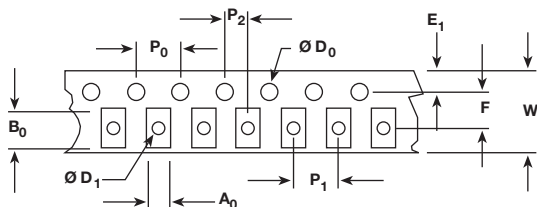


Suggested Pad Layout

| A                             | B                             | C                             | D                            | E              | F              | G               | H              |
|-------------------------------|-------------------------------|-------------------------------|------------------------------|----------------|----------------|-----------------|----------------|
| 0.063 ± 0.006<br>[1.6 ± 0.15] | 0.031 ± 0.006<br>[0.8 ± 0.15] | 0.012 ± 0.006<br>[0.3 ± 0.15] | 0.031 ± 0.008<br>[0.8 ± 0.2] | 0.105<br>[2.7] | 0.035<br>[0.9] | 0.025<br>[0.64] | 0.040<br>[1.0] |

**TAPE AND REEL SPECIFICATIONS 0603 SIZE PER EIA-481-1** in inches [millimeters]

4000 Piece/Reel



|                |                                     |
|----------------|-------------------------------------|
| A <sub>0</sub> | 0.045 ± 0.004 [1.14 ± 0.1]          |
| B <sub>0</sub> | 0.068 ± 0.004 [1.75 ± 0.1]          |
| D <sub>0</sub> | 0.059 + 0.005/- 0.000 [1.5 + 0.127] |
| D <sub>1</sub> | 0.039 min. [1.0 min.]               |
| E <sub>1</sub> | 0.069 ± 0.004 [1.75 ± 0.1]          |
| F              | 0.138 ± 0.002 [3.50 ± 0.05]         |
| K <sub>0</sub> | 0.045 ± 0.002 [1.15 ± 0.05]         |
| P <sub>0</sub> | 0.157 ± 0.004 [4.00 ± 0.1]          |
| P <sub>1</sub> | 0.157 ± 0.004 [4.00 ± 0.1]          |
| P <sub>2</sub> | 0.079 ± 0.002 [2.00 ± 0.05]         |
| W              | 0.327 max. [8.3 max.]               |
| T              | 0.008 ± 0.002 [0.2 ± 0.05]          |
| A              | 7.000 ± 0.079 [178 ± 2.0]           |
| N              | 2.500 [63.5]                        |
| C              | 0.512 ± 0.020 [13.00 ± 0.50]        |
| W <sub>1</sub> | 0.315 + 0.059/- 0.000 [8.00 + 1.5]  |
| T <sub>1</sub> | 0.079 ± 0.002 [2.00 ± 0.05]         |



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