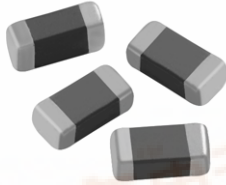


# ILSB-0603



Vishay Dale

## Monolithic Chip Inductors



### MECHANICAL SPECIFICATIONS

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

**Resistance To Solder Heat:** 10 seconds in 260 °C solder after preheat and flux per above

**Termination:** 100 % Sn

### FEATURES

- High reliability
- Surface mountable
- Magnetically self shielded
- Nickel barrier plating virtually eliminates silver migration
- 100 % Lead (Pb)-free and RoHS compliant



**RoHS**  
COMPLIANT

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

**Beam Strength:** 0.3 kg

### ENVIRONMENTAL SPECIFICATIONS

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

**Thermal Shock:** - 40 °C to + 85 °C

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

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

| STANDARD ELECTRICAL SPECIFICATIONS     |            |                                    |             |                                     |   |                       |               |
|--|------------|------------------------------------|-------------|-------------------------------------|---|-----------------------|---------------|
| INDUCTANCE<br>( $\mu$ H)<br>$\pm 10\%$ | TOLERANCE  | THICKNESS "D"<br>Inches [mm]       | Q<br>(Min.) | TEST<br>FREQUENCY<br>L & Q<br>(MHz) | MIN.<br>SELF-RESONANT<br>FREQUENCY<br>(MHz) | MAX.<br>DCR<br>(Ohms) | RATED<br>(mA) |
| 0.047                                  | $\pm 20\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10          | 50                                  | 260   | 0.15                  | 50            |
| 0.068                                  | $\pm 20\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10          | 50                                  | 250   | 0.25                  | 50            |
| 0.082                                  | $\pm 20\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 10          | 50                                  | 245   | 0.25                  | 50            |
| 0.10                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 276   | 0.50                  | 50            |
| 0.12                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 236   | 0.50                  | 50            |
| 0.15                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 207   | 0.60                  | 50            |
| 0.18                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 190   | 0.60                  | 50            |
| 0.22                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 173   | 0.80                  | 50            |
| 0.27                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 157   | 0.80                  | 50            |
| 0.33                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 144   | 0.85                  | 35            |
| 0.39                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 127   | 1.00                  | 35            |
| 0.47                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 121   | 1.35                  | 35            |
| 0.56                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 110   | 1.55                  | 35            |
| 0.68                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 104   | 1.70                  | 35            |
| 0.82                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 15          | 25                                  | 98  | 2.10                  | 35            |
| 1.0                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 35          | 10                                  | 87  | 0.60                  | 25            |
| 1.2                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 35          | 10                                  | 74  | 0.80                  | 25            |
| 1.5                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 35          | 10                                  | 69  | 0.80                  | 25            |
| 1.8                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 35          | 10                                  | 64  | 0.95                  | 25            |
| 2.2                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 35          | 10                                  | 58  | 1.15                  | 15            |
| 2.7                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 35          | 10                                  | 52  | 1.35                  | 15            |
| 3.3                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 35          | 10                                  | 46  | 1.55                  | 15            |
| 3.9                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 35          | 10                                  | 41  | 1.70                  | 15            |
| 4.7                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 35          | 10                                  | 38  | 2.10                  | 15            |
| 5.6                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 30          | 4.0                                 | 22  | 1.55                  | 15            |
| 6.8                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 30          | 4.0                                 | 20  | 1.70                  | 15            |
| 8.2                                    | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 30          | 4.0                                 | 18  | 2.10                  | 15            |
| 10.0                                   | $\pm 10\%$ | 0.031 $\pm$ 0.008 [0.80 $\pm$ 0.2] | 30          | 2.0                                 | 17  | 2.55                  | 15            |

| DESCRIPTION          |                  |                      |              |                               |
|----------------------|------------------|----------------------|--------------|-------------------------------|
| ILSB-0603            | 3.3 $\mu$ H      | $\pm 10\%$           | ER           | e3                            |
| MODEL                | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC LEAD (Pb)-FREE STANDARD |
| GLOBAL PART NUMBER   |                  |                      |              |                               |
| I                    | L                | S                    | B            |                               |
| MODEL                |                  |                      |              |                               |
| 0                    | 6                | 0                    | 3            |                               |
| SIZE                 |                  |                      |              |                               |
| E                    | R                |                      |              |                               |
| PACKAGE CODE         |                  |                      |              |                               |
| 3                    | R                | 3                    |              |                               |
| INDUCTANCE VALUE     |                  |                      |              |                               |
|                      |                  |                      | K            |                               |
| INDUCTANCE TOLERANCE |                  |                      |              |                               |



| DIMENSIONS in inches [millimeters]   |                               |                               |                              |                |                |                 |                |
|--|-------------------------------|-------------------------------|------------------------------|----------------|----------------|-----------------|----------------|
| <p>100 % Sn Termination</p> <p>Ferrite Body</p> <p>Dimensional Outline</p> <p>Suggested Pad Layout</p> |                               |                               |                              |                |                |                 |                |
| 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]   |                |                                    |
|--|----------------|------------------------------------|
| <p>4000 Piece/Reel</p> <p>Empty Trailer</p> <p>Components</p> <p>Empty Tape</p> <p>Cover Tape Leader</p> <p>Unreel Direction</p> <p>160 mm Minimum</p> <p>390 mm Minimum</p> | 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 ± 0.05]       |
|  | W <sub>1</sub> | 0.315 + 0.059/-0.00 [8.00 ± 1.5]   |
|  | T <sub>1</sub> | 0.079 ± 0.002 [2.00 ± 0.05]        |



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