

## 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
- 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:** - 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

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

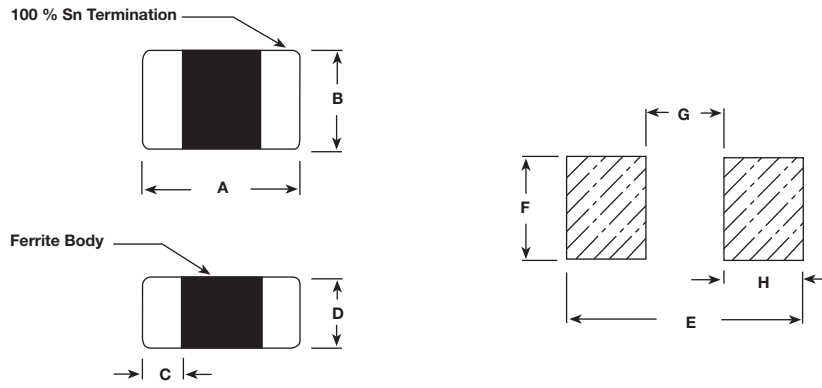
### DESCRIPTION

|                  |                  |                      |              |                               |
|------------------|------------------|----------------------|--------------|-------------------------------|
| <b>ILSB-0603</b> | <b>3.3 μH</b>    | <b>± 10 %</b>        | <b>ER</b>    | <b>e3</b>                     |
| MODEL            | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC LEAD (Pb)-FREE STANDARD |

### GLOBAL PART NUMBER

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

**DIMENSIONS** in inches [millimeters]



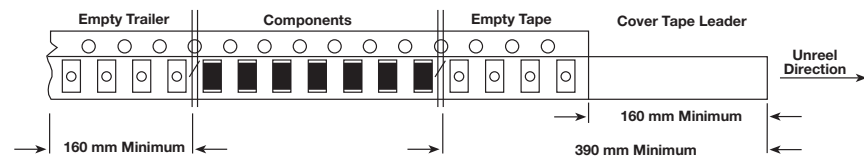
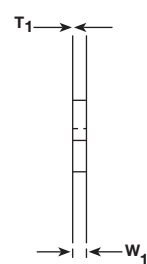
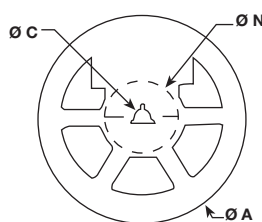
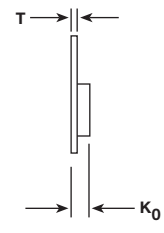
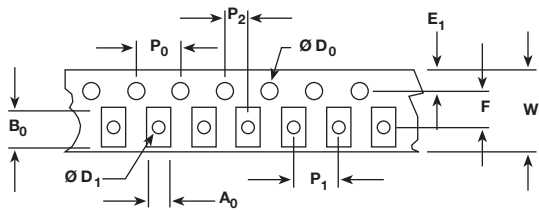
Dimensional Outline

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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Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А