# 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:** 0.1 kg for 30 s

**Beam Strength:** 2.5 kg

## FEATURES

- High reliability
- Surface mountable
- Magnetically self shielded
- Nickel barrier plating virtuallly eliminates silver migration
- Compliant to RoHS Directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition

Pb-free
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. AT ± 10 % (μH) | TOL. | THICKNESS "D" (INCHES [mm]) | TEST FREQ. (MHz) L & Q | Q MIN. | SRF MIN. (MHz) | DCR MAX. (Ω) | RATED DC CURRENT (mA) |
|---|---|---|---|---|---|---|---|
| 0.047 | 20 % | 0.043 ± 0.012 [1.10 ± 0.3] | 50 | 20 | 368 | 0.15 | 300 |
| 0.068 | 20 % | 0.043 ± 0.012 [1.10 ± 0.3] | 50 | 20 | 322 | 0.25 | 300 |
| 0.10 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 20 | 271 | 0.25 | 250 |
| 0.12 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 20 | 253 | 0.30 | 250 |
| 0.15 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 20 | 230 | 0.30 | 250 |
| 0.18 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 20 | 213 | 0.40 | 250 |
| 0.22 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 20 | 196 | 0.40 | 250 |
| 0.27 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 20 | 173 | 0.50 | 250 |
| 0.33 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 20 | 167 | 0.60 | 250 |
| 0.39 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 25 | 156 | 0.50 | 200 |
| 0.47 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 25 | 144 | 0.60 | 200 |
| 0.68 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 25 | 25 | 121 | 0.80 | 150 |
| 1.0 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 10 | 45 | 87 | 0.40 | 100 |
| 1.2 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 10 | 45 | 75 | 0.50 | 100 |
| 1.5 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 10 | 45 | 69 | 0.50 | 50 |
| 1.8 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 10 | 45 | 64 | 0.50 | 50 |
| 2.2 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 10 | 45 | 58 | 0.50 | 50 |
| 3.3 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 10 | 45 | 48 | 0.70 | 50 |
| 3.9 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 10 | 45 | 44 | 0.80 | 50 |
| 4.7 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 10 | 45 | 41 | 0.90 | 50 |
| 5.6 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 4 | 45 | 37 | 0.70 | 25 |
| 6.8 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 4 | 45 | 34 | 0.80 | 25 |
| 8.2 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 4 | 45 | 30 | 0.90 | 25 |
| 10 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 2 | 45 | 28 | 1.00 | 25 |
| 12 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 2 | 45 | 26 | 1.05 | 15 |
| 15 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 1 | 45 | 22 | 0.70 | 5 |
| 18 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 1 | 45 | 21 | 0.70 | 5 |
| 22 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 1 | 35 | 19 | 0.90 | 5 |
| 27 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 1 | 35 | 17 | 0.90 | 5 |
| 33 | 10 % | 0.043 ± 0.012 [1.10 ± 0.3] | 1 | 35 | 15 | 1.05 | 5 |

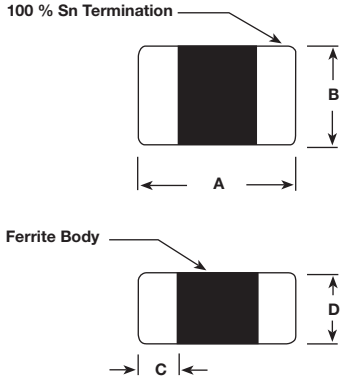
## DESCRIPTION

| ILSB-1206 | 3.3 μH | ± 10 % | ER | e3 |
|---|---|---|---|---|
| MODEL | INDUCTANCE VALUE | INDUCTANCE TOLERANCE | PACKAGE CODE | JEDEC LEAD (Pb)-FREE STANDARD |

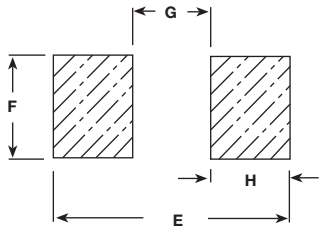
## GLOBAL PART NUMBER

| I | L | S | B | 1 | 2 | 0 | 6 | E | R | 3 | R | 3 | K |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PRODUCT FAMILY | | | | SIZE | | | | PACKAGE CODE | | INDUCTANCE VALUE | | | TOL. |

## DIMENSIONS in inches [millimeters]



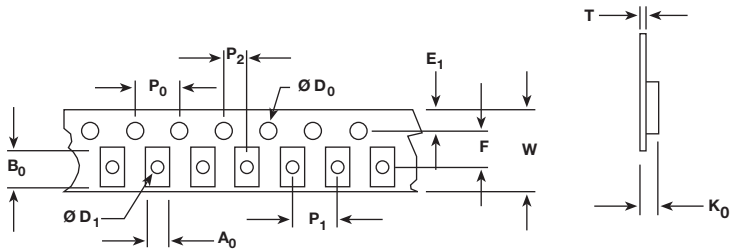

Dimensional Outline

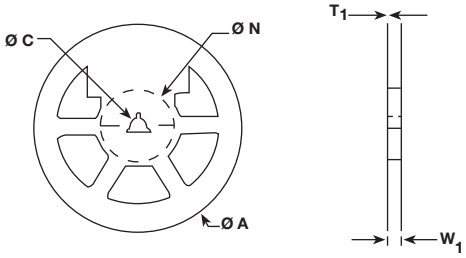


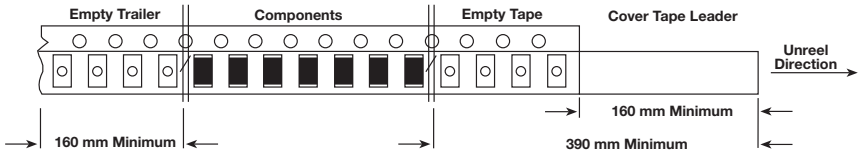

Suggested Pad Layout

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
| 0.126 ± 0.008 [3.2 ± 0.2] | 0.063 ± 0.008 [1.6 ± 0.2] | 0.020 ± 0.012 [0.5 ± 0.3] | 0.043 ± 0.012 [1.10 ± 0.3] | 0.185 [4.7] | 0.070 [1.8] | 0.087 [2.2] | 0.047 [1.2] |

## TAPE AND REEL SPECIFICATIONS 1206 SIE PER EIA-481-1 in inches [millimeters]




| | |
|---|---|
| $A_0$ | 0.073 ± 0.004 [1.85 ± 0.1] |
| $B_0$ | 0.135 ± 0.004 [3.43 ± 0.1] |
| $D_0$ | 0.059 + 0.005/- 0.000 [1.5 + 0.127] |
| $D_1$ | 0.039 min. [1.0 min.] |
| $E_1$ | 0.069 ± 0.004 [1.75 ± 0.1] |
| F | 0.138 ± 0.002 [3.50 ± 0.05] |
| $K_0$ | 0.048 ± 0.002 [1.22 ± 0.05] |
| $P_0$ | 0.157 ± 0.004 [4.00 ± 0.1] |
| $P_1$ | 0.157 ± 0.004 [4.00 ± 0.1] |
| $P_2$ | 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] |
| $W_1$ | 0.315 + 0.059/- 0.000 [8.00 + 1.5] |
| $T_1$ | 0.079 ± 0.002 [2.00 ± 0.05] |

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