

# Low Profile Shielded SMD Chip Power Inductor



ASPI-2515 series



2.5 x 2.0 x 1.5mm  
RoHS/RoHS II Compliant  
MSL Level: 1

## Features

- Small size and low profile: 1.5mm
- Small DCR and high rated current
- High reliability to mechanical stress
- Magnetically shielded by magnetic powder molding
- Suitable for RoHS reflow profile

## Applications

- Mobile phones
- MP3 & 4 and other portable communication equipment
- Digital cameras

## Electrical Specifications

|  |   |
|--|---|
| <b>Operating Temperature &amp; Humidity:</b> | -40°C to +125°C (Including self generated heat) |
| <b>Storage Temperature &amp; Humidity:</b>   | -10°C to +40°C, 70% RH                          |

| Part Number   | Inductance | Inductance Tolerance | DC Resistance |      | Saturation Current | Temperature Rise Current | Self-Resonant Frequency |
|---------------|------------|----------------------|---------------|------|--------------------|--------------------------|-------------------------|
|               |            |                      | Max           | Typ  |                    |                          |                         |
| Units         | μH         | %                    | mΩ            | mΩ   | A                  | A                        | MHz                     |
| Symbol        | L          | M, N                 | DCR           |      | Isat               | Irms                     | SRF                     |
| ASPI-2515-R16 | 0.16       | M                    | 22            | 18   | 6.50               | 4.05                     | 380                     |
| ASPI-2515-R24 | 0.24       | M                    | 22            | 18   | 4.00               | 4.05                     | 260                     |
| ASPI-2515-R33 | 0.33       | M                    | 29            | 24   | 4.00               | 3.35                     | 230                     |
| ASPI-2515-R47 | 0.47       | M                    | 36            | 30   | 3.70               | 3.00                     | 170                     |
| ASPI-2515-R68 | 0.68       | M                    | 42            | 35   | 3.20               | 2.50                     | 150                     |
| ASPI-2515-1R0 | 1.0        | M                    | 44            | 37   | 1.70               | 2.20                     | 85                      |
| ASPI-2515-1R2 | 1.2        | M                    | 78            | 65   | 2.20               | 1.95                     | 75                      |
| ASPI-2515-1R5 | 1.5        | M                    | 78            | 65   | 2.00               | 1.95                     | 75                      |
| ASPI-2515-2R2 | 2.2        | M                    | 96            | 80   | 1.80               | 1.80                     | 55                      |
| ASPI-2515-3R3 | 3.3        | M                    | 144           | 120  | 1.15               | 1.40                     | 43                      |
| ASPI-2515-4R7 | 4.7        | M                    | 210           | 175  | 1.10               | 1.12                     | 36                      |
| ASPI-2515-6R8 | 6.8        | M                    | 360           | 300  | 0.80               | 0.95                     | 25                      |
| ASPI-2515-100 | 10.0       | M                    | 522           | 435  | 0.70               | 0.87                     | 21                      |
| ASPI-2515-150 | 15         | M                    | 1000          | 830  | 0.65               | 0.57                     | 18                      |
| ASPI-2515-180 | 18         | M                    | 1000          | 830  | 0.50               | 0.57                     | 14                      |
| ASPI-2515-220 | 22         | M                    | 1090          | 910  | 0.45               | 0.54                     | 11                      |
| ASPI-2515-330 | 33         | M                    | 1840          | 1530 | 0.35               | 0.42                     | 7.5                     |
| ASPI-2515-470 | 47         | M                    | 2220          | 1850 | 0.25               | 0.30                     | 8.9                     |
| ASPI-2515-680 | 68         | M                    | 3000          | 2500 | 0.30               | 0.28                     | 8                       |
| ASPI-2515-101 | 100        | M                    | 5400          | 4500 | 0.22               | 0.21                     | 6                       |

## Test Conditions

1. Inductance is measured with a WK3260B LCR meter or equivalent.
2. RDC is measured with a HIOKI 3540 or equivalent.(or equivalent).
3. Isat : Based on inductance change ( $\Delta L/L_o : \leq -30\%$ )
4. Irms : Based on temperature rise ( $\Delta T : 40^\circ\text{C TYP.}$  )
5. Test Freq: 1MHz, 1Vrms



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RoHS/RoHS II Compliant  
MSL Level: 1

## Part Number Identification

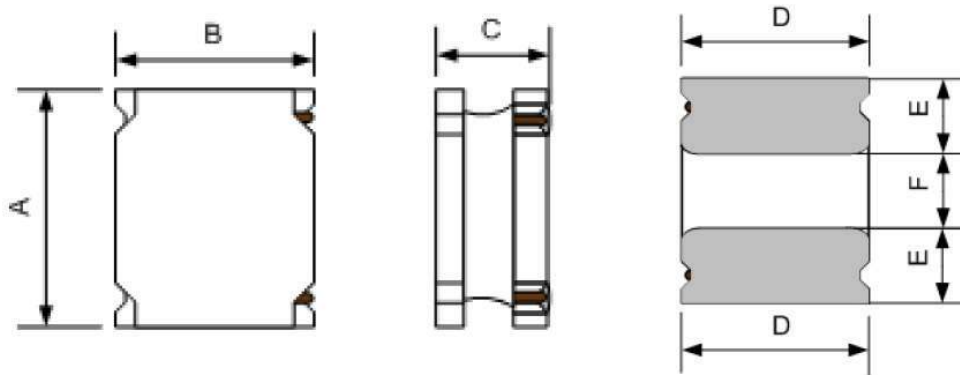
ASPI-2515-   -

**Inductance Code**  
Please refer to the  
Electrical Spec Table

**Tolerance**  
M:  $\pm 20\%^*$

**Packaging**  
T2: Tape and Reel (2kpcs / reel)

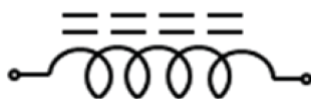
## Mechanical Information



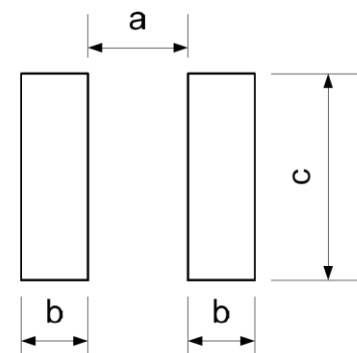
| A             | B             | C       | D              | E             | F             | a Typ. | b Typ. | c Typ. |
|---------------|---------------|---------|----------------|---------------|---------------|--------|--------|--------|
| 2.5 $\pm$ 0.2 | 2.0 $\pm$ 0.2 | 1.2 Max | 2.00 $\pm$ 0.2 | 0.8 $\pm$ 0.2 | 0.8 $\pm$ 0.2 | 0.8    | 0.85   | 2.0    |

## Recommended Land Pattern

### Circuit Schematic



No Polarity



Dimensions: mm

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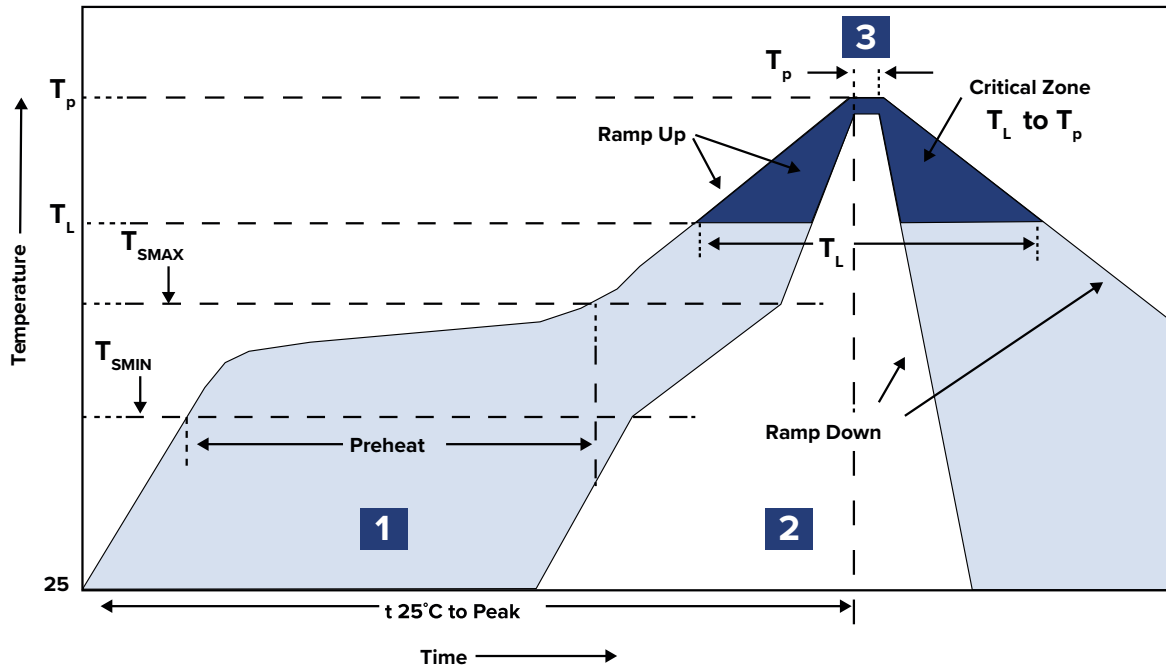


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## Reflow Profile



| Zone | Description    | Temperature                               | Time          |
|------|----------------|---|---------------|
| 1    | Preheat / Soak | $T_{SMIN} \sim T_{SMAX}$<br>150°C ~ 180°C | 60 ~ 100 sec. |
| 2    | Reflow         | $T_L$<br>200°C                            | 20 sec.       |
| 3    | Peak heat      | $T_P$<br>260°C                            | 10 sec. MAX   |

# Low Profile Shielded SMD Chip Power Inductor

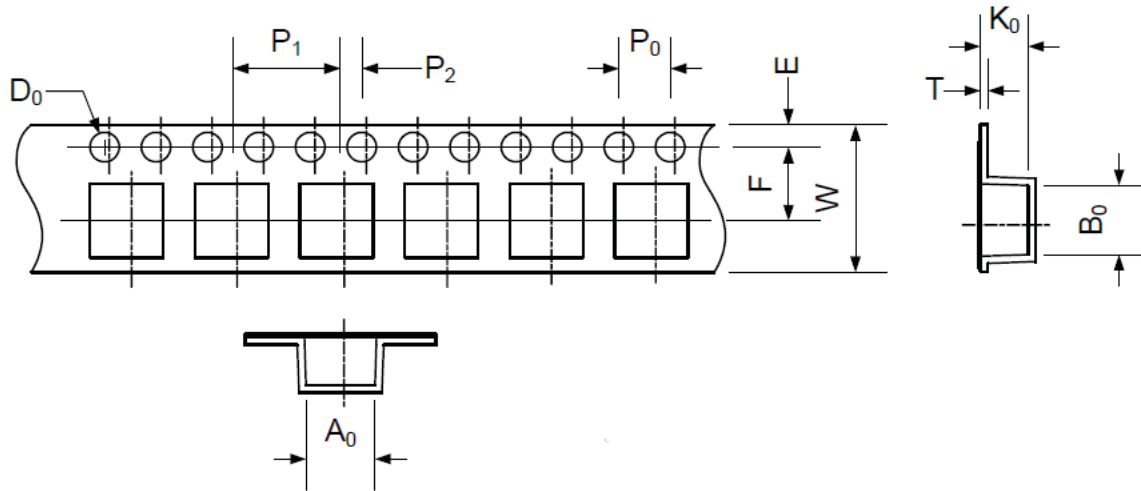


ASPI-2515 series



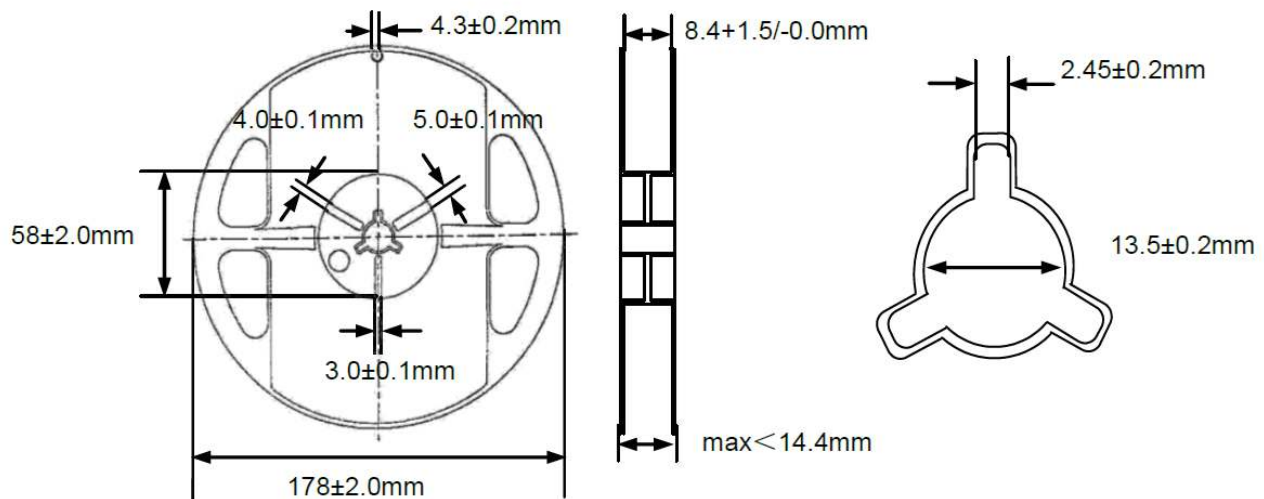
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## Packaging



| $A_0$              | $B_0$              | $W$              | $E$               | $F$               | $P_0$            | $P_1$            | $P_2$             | $D_0$              | $T$                | $K_0$              |
|--------------------|--------------------|------------------|-------------------|-------------------|------------------|------------------|-------------------|--------------------|--------------------|--------------------|
| 2.45<br>$\pm 0.05$ | 2.75<br>$\pm 0.05$ | 8.0<br>$\pm 0.3$ | 1.75<br>$\pm 0.1$ | 3.5<br>$\pm 0.05$ | 4.0<br>$\pm 0.1$ | 4.0<br>$\pm 0.1$ | 2.0<br>$\pm 0.05$ | 1.5<br>$+0.1/-0.0$ | 0.25<br>$\pm 0.03$ | 1.55<br>$\pm 0.05$ |

## Dimensions: mm



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