

# Low Profile Shielded SMD Chip Power Inductor



## ASPI-2512 Series

Request Samples



Check Inventory



2.5 x 2.0 x 1.2 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

### Features

- Small size and low profile: 1.2mm
- 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

| Part Number   | Inductance | Inductance Tolerance | DCR      |       | Saturation Current | Temperature Rise Current |
|---------------|------------|----------------------|----------|-------|--------------------|--------------------------|
| Units         | μH         | %                    | mΩ ± 20% |       | A                  | A                        |
| Symbol        | L          | M, N                 | Max      | Typ   | Isat               | Irms                     |
| ASPI-2512-R47 | 0.47       | N                    | 0.061    | 0.047 | 3.82               | 2.15                     |
| ASPI-2512-R68 | 0.68       | N                    | 0.074    | 0.057 | 3.28               | 1.95                     |
| ASPI-2512-1R0 | 1.0        | N                    | 0.090    | 0.069 | 2.59               | 1.93                     |
| ASPI-2512-1R2 | 1.2        | N                    | 0.129    | 0.099 | 2.38               | 1.46                     |
| ASPI-2512-1R5 | 1.5        | N                    | 0.147    | 0.113 | 2.24               | 1.40                     |
| ASPI-2512-2R2 | 2.2        | M                    | 0.216    | 0.166 | 1.85               | 1.15                     |
| ASPI-2512-2R7 | 2.7        | M                    | 0.239    | 0.184 | 1.72               | 1.09                     |
| ASPI-2512-3R3 | 3.3        | M                    | 0.264    | 0.203 | 1.61               | 1.04                     |
| ASPI-2512-3R6 | 3.6        | M                    | 0.348    | 0.268 | 1.46               | 0.90                     |
| ASPI-2512-4R3 | 4.3        | M                    | 0.377    | 0.290 | 1.37               | 0.87                     |
| ASPI-2512-4R7 | 4.7        | M                    | 0.377    | 0.290 | 1.12               | 0.84                     |
| ASPI-2512-5R1 | 5.1        | M                    | 0.500    | 0.385 | 1.23               | 0.75                     |
| ASPI-2512-5R6 | 5.6        | M                    | 0.538    | 0.414 | 1.11               | 0.73                     |
| ASPI-2512-6R2 | 6.2        | M                    | 0.542    | 0.417 | 1.03               | 0.73                     |
| ASPI-2512-6R8 | 6.8        | M                    | 0.581    | 0.447 | 0.98               | 0.69                     |
| ASPI-2512-7R5 | 7.5        | M                    | 0.611    | 0.470 | 0.97               | 0.68                     |
| ASPI-2512-8R2 | 8.2        | M                    | 0.658    | 0.506 | 0.98               | 0.65                     |
| ASPI-2512-9R1 | 9.1        | M                    | 0.690    | 0.531 | 0.91               | 0.62                     |
| ASPI-2512-100 | 10.0       | M                    | 0.690    | 0.531 | 0.79               | 0.62                     |
| ASPI-2512-120 | 12.0       | M                    | 1.075    | 0.827 | 0.78               | 0.51                     |
| ASPI-2512-150 | 15.0       | M                    | 1.591    | 1.224 | 0.68               | 0.42                     |
| ASPI-2512-220 | 22.0       | M                    | 1.976    | 1.520 | 0.53               | 0.38                     |

### Test Conditions

1. Inductance is measured in HP-4285A Precision LCR Meter.
2. RDC is measured in DU-5011 milli ohm meter.(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: 100KHz, 1Vrms

**Operating Temperature:** -25°C ~ +120°C (including self-heating)

**Storage Temperature:** -10°C ~ +40°C (in original packaging)



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## Part Identification

ASPI-2512-  -

### Inductance Code

Please refer to the electrical specifications table

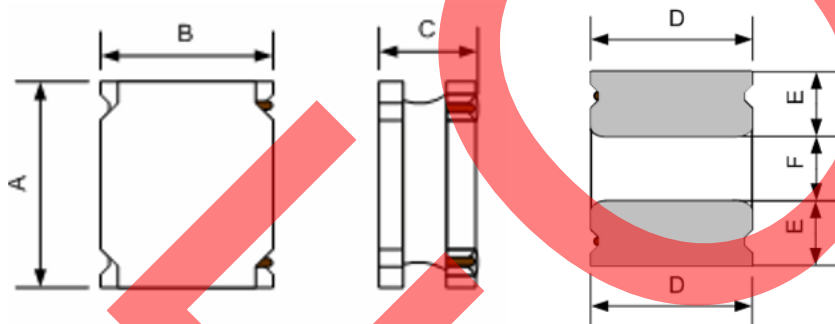
### Tolerance

N:  $\pm 30\%$   
M:  $\pm 20\%$

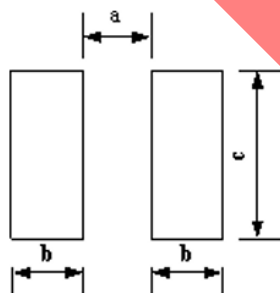
### Packaging

T2: Tape and Reel (2kpcs / reel)

## Mechanical Specifications



| Series    | A             | B             | C       | D             | E              | F              |
|-----------|---------------|---------------|---------|---------------|----------------|----------------|
| ASPI-2512 | 2.5 $\pm$ 0.1 | 2.0 $\pm$ 0.1 | 1.2Max. | 2.0 $\pm$ 0.2 | 0.80 $\pm$ 0.2 | 0.80 $\pm$ 0.2 |



| Series    | a        | b        | c        |
|-----------|----------|----------|----------|
| ASPI-2512 | 0.80 Typ | 0.85 Typ | 2.00 Typ |

Recommended Land Pattern

Dimensions: mm



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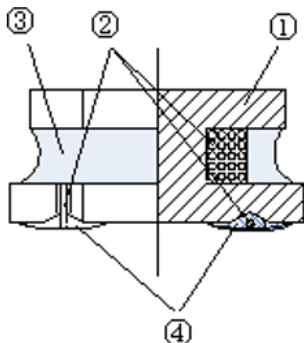


Check Inventory



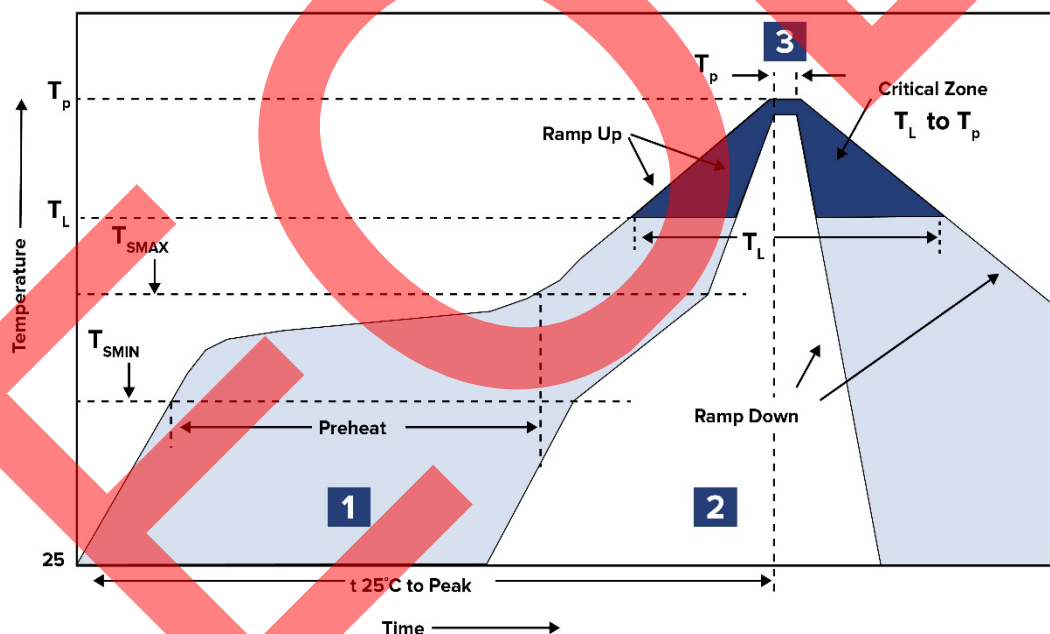
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RoHS/RoHS II Compliant  
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## Materials



| No. | Components    | Material                                 |
|-----|---------------|------------------------------------------|
| 1   | Ferrite Core  | Ni-Zn Ferrite                            |
| 2   | Wire          | Polyurethane system enameled copper wire |
| 3   | Magnetic Glue | Epoxy resin and magnetic powder          |
| 4   | Electrodes    | AgNiSn or FeNiCu +Sn Alloy               |

## Reflow Profile



| Zone | Description | Temperature                               | Times        |
|------|-------------|-------------------------------------------|--------------|
| 1    | Preheat     | $T_{SMIN} \sim T_{SMAX}$<br>150°C ~ 200°C | 60 ~ 90 sec. |
| 2    | Reflow      | $T_L$<br>217°C                            | 60 ~ 90 sec. |
| 3    | Peak heat   | $T_P$<br>260°C                            | 5 sec. MAX   |

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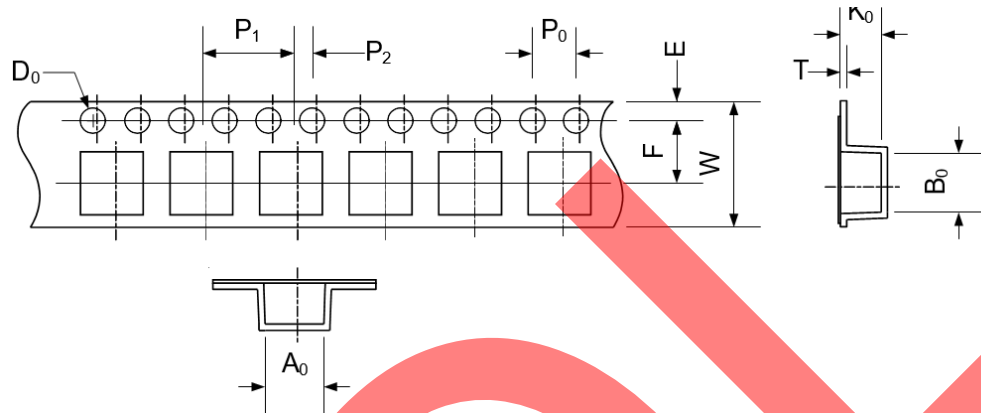
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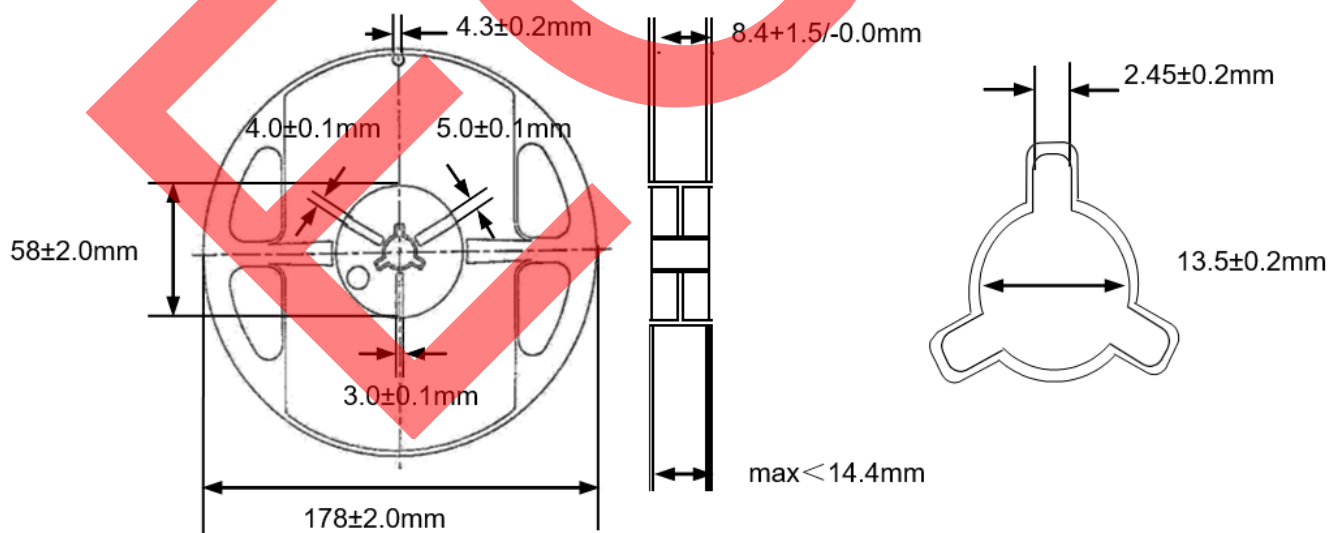
## Packaging

T2: 2,000pcs/Reel



| A0        | B0        | W     | E        | F        | P0      | P1      | P2      | D0           | T         | K0      |
|-----------|-----------|-------|----------|----------|---------|---------|---------|--------------|-----------|---------|
| 2.35±0.05 | 2.65±0.05 | 8±0.3 | 1.75±0.1 | 3.5±0.05 | 4.0±0.1 | 4.0±0.1 | 2.0±0.1 | 1.5+0.1/-0.0 | 0.25±0.03 | 1.4±0.1 |

Dimensions: mm



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