

ECN/PCN No.: M1397

| For Manufacturer | | | |
|--|---|--|---|
| Product Description: Low Profile Shielded SMD Chip Power Inductor | Abracon Part Number / Part Series: ASPI-2510 Series | <input type="checkbox"/> Documentation only <input checked="" type="checkbox"/> ECN <input type="checkbox"/> EOL | <input checked="" type="checkbox"/> Series <input type="checkbox"/> Part Number(s) |
| Affected Revision: D | New Revision: E | Application: | <input type="checkbox"/> Safety <input checked="" type="checkbox"/> Non-Safety |
| Prior to Change: | | | |
| <u>Electrical Specifications</u> | | | |
| Operating Temperature: -25°C ~ +120°C (including self-heating) | | | |
| After Change: | | | |
| <u>Electrical Specifications</u> | | | |
| Operating Temperature: -40°C ~ +125°C (including self-heating) | | | |
| Cause/Reason for Change: Correcting Operating Temperature in datasheet | | | |
| Change Plan | | | |
| Effective Date: 11/29/2022 | Additional Remarks: | | |
| Change Declaration: Changes in this document do not affect the products form, fit and function. Extends operating temperature range. | | | |
| Issued Date: 11/29/2022 | Issued By: <i>Gerald Capwell</i> | Issued Department: Engineering | |
| Approval: <i>Syed Raza</i> Engineering VP | Approval: <i>Reuben Quintanilla</i> Quality Director | Approval: <i>Ying Huang</i> Purchasing Director | |
| For Abracon EOL only | | | |
| Last Time Buy (if applicable): | | Alternate Part Number / Part Series: | |
| Additional Approval: | Additional Approval: | Additional Approval: | |
| Customer Approval (If Applicable) | | | |
| Qualification Status: | | | |
| <input type="checkbox"/> Approved <input type="checkbox"/> Not accepted | | | |
| <i>Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.</i> | | | |
| Customer Part Number: | | Customer Project: | |
| Company Name: | Company Representative: | Representative Signature: | |
| Customer Remarks: | | | |

Low Profile Shielded SMD Chip Power Inductor



ASPI-2510 Series

Request Samples



Check Inventory



2.5 x 2.0 x 1.0 mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- Small size and low profile: 1.0mm
- 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 | % | $\Omega \pm 20\%$ | | A | A |
| Symbol | L | M, N | Max | Typ | Isat | Irms |
| ASPI-2510-R22 | 0.24 | M | 0.034 | 0.028 | 3.60 | 2.75 |
| ASPI-2510-R33 | 0.33 | M | 0.043 | 0.036 | 3.80 | 2.40 |
| ASPI-2510-R47 | 0.47 | M | 0.044 | 0.037 | 2.40 | 2.40 |
| ASPI-2510-R68 | 0.68 | M | 0.061 | 0.051 | 2.75 | 2.10 |
| ASPI-2510-1R0 | 1.0 | M | 0.080 | 0.067 | 2.05 | 1.80 |
| ASPI-2510-1R5 | 1.5 | M | 0.108 | 0.090 | 1.70 | 1.55 |
| ASPI-2510-2R2 | 2.2 | M | 0.137 | 0.114 | 1.55 | 1.40 |
| ASPI-2510-3R3 | 3.3 | M | 0.228 | 0.170 | 1.10 | 1.10 |
| ASPI-2510-4R7 | 4.7 | M | 0.323 | 0.269 | 1.00 | 0.91 |
| ASPI-2510-6R8 | 6.8 | M | 0.451 | 0.376 | 0.82 | 0.76 |
| ASPI-2510-100 | 10.0 | M | 0.584 | 0.487 | 0.65 | 0.67 |
| ASPI-2510-150 | 15.0 | M | 0.954 | 0.795 | 0.55 | 0.50 |
| ASPI-2510-220 | 22.0 | M | 1.548 | 1.290 | 0.45 | 0.40 |
| ASPI-2510-330 | 33.0 | M | 1.548 | 1.290 | 0.25 | 0.40 |

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 ($\Delta L/L_0 \leq -30\%$)
4. Irms : Based on temperature rise ($\Delta T : 40^\circ\text{C TYP.}$)
5. Test Freq: 100KHz, 1Vrms

Operating Temperature: $-40^\circ\text{C} \sim +125^\circ\text{C}$ (including self-heating)

Storage Temperature: $-10^\circ\text{C} \sim +40^\circ\text{C}$, 30%-70% RH (in original packaging)



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Low Profile Shielded SMD Chip Power Inductor



ASPI-2510 Series

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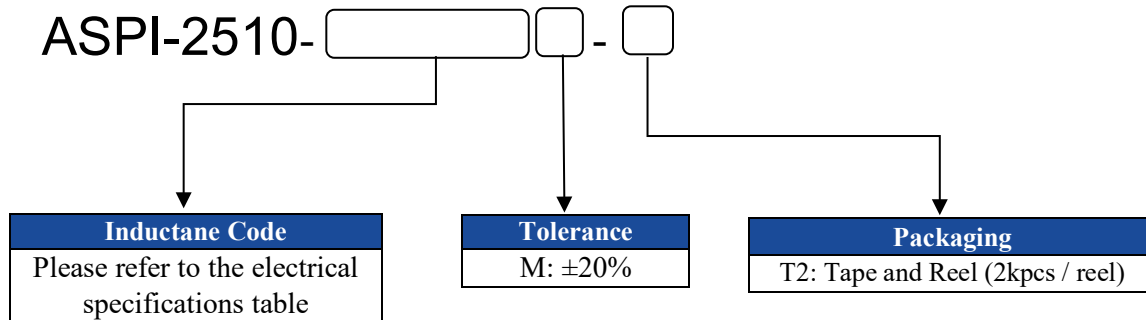


Check Inventory

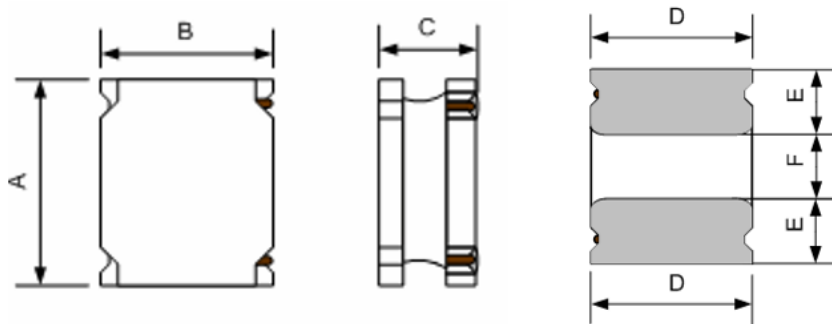


2.5 x 2.0 x 1.0 mm
RoHS/RoHS II Compliant
 MSL Level = 1

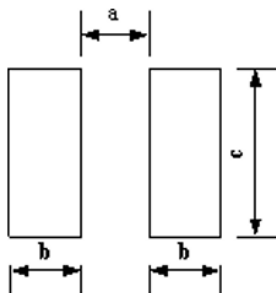
Part Identification



Mechanical Specifications



| Series | A | B | C | D | E | F |
|-----------|---------------|---------------|---------|---------------|----------------|----------------|
| ASPI-2510 | 2.5 \pm 0.2 | 2.0 \pm 0.2 | 1.0Max. | 2.0 \pm 0.2 | 0.80 \pm 0.2 | 0.80 \pm 0.2 |



| Series | a | b | c |
|-----------|----------|----------|----------|
| ASPI-2510 | 0.80 Typ | 0.85 Typ | 2.00 Typ |

Recommended Land Pattern

Dimensions: mm



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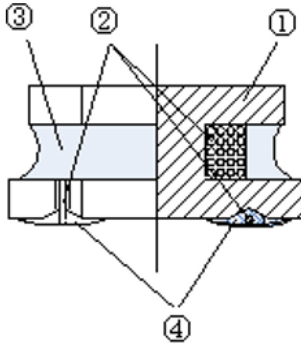


Check Inventory



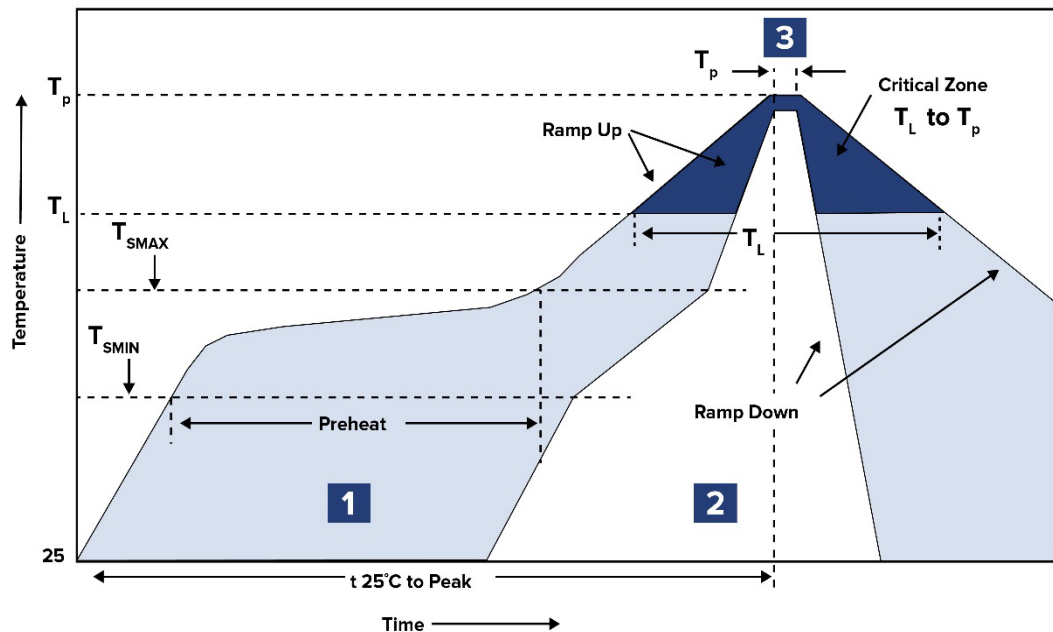
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RoHS/RoHS II Compliant
MSL Level = 1

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 | $T_{SMIN} \sim T_{SMAX}$ 150°C ~ 200°C | 60 ~ 120 sec. |
| 2 | Reflow | T_L 217°C | 60 ~ 90 sec. |
| 3 | Peak heat | T_P 260°C | 5 sec. MAX |

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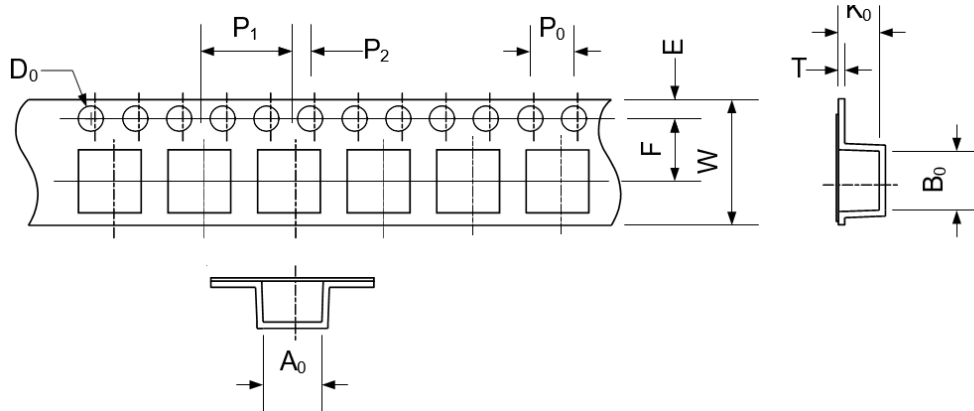
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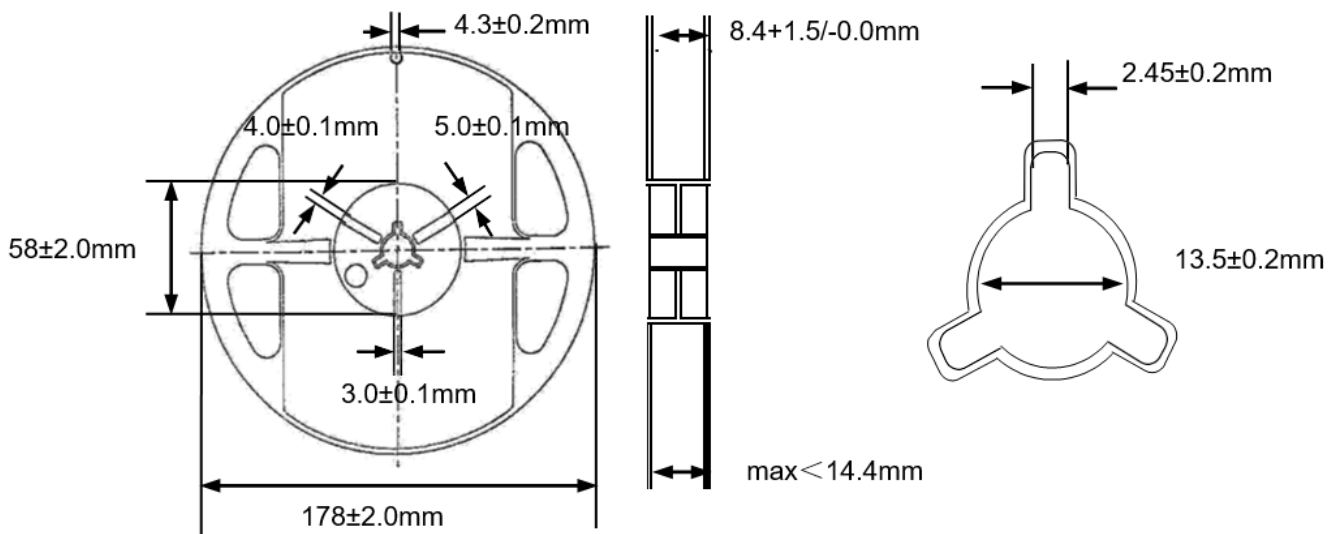
Packaging

T2: 2,000pcs/Reel



| A0 | B0 | W | E | F | P0 | P1 | P2 | D0 | T | K0 |
|-----------|-----------|-------|----------|----------|---------|---------|----------|--------------|-----------|----------|
| 2.45±0.05 | 2.75±0.05 | 8±0.1 | 1.75±0.1 | 3.5±0.05 | 4.0±0.1 | 4.0±0.1 | 2.0±0.05 | 1.5+0.1/-0.0 | 0.25±0.03 | 1.2±0.05 |

Dimensions: mm



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