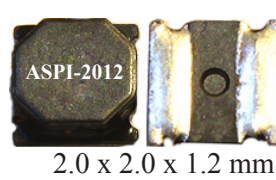




**THE DATASHEET OF
ASPI-2012-4R7M-T**



Wire Wound Magnetically Shielded SMD Power Inductor



ASPI-2012 series



RoHS/RoHS II Compliant

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:

| | |
|------------------------------------|---|
| Abracon P/N: | ASPI-2012 series |
| Operating Temperature & Humidity : | -40°C ~ +125°C (including self heating) |
| Storage Temperature & Humidity: | -10°C ~ +40°C and 70% R.H. max. |

| Part Number ASPI-2012- Inductance Code | Inductance | L Tolerance | DC Resistance Typ | DC Resistance Max | Saturation Current Max | Saturation Current Typ | Temperature Rise Current Max | Temperature Rise Current Typ |
|---|------------|-------------|----------------------|----------------------|---------------------------|---------------------------|------------------------------------|------------------------------------|
| Units | µH | — | Ω Typ | Ω Max | A Max | A Typ | A Max | A Typ |
| Symbol | L | M | DCR | | Isat | | Irms | |
| ASPI-2012-R16 | 0.16 | M | 0.026 | 0.031 | 5.20 | 5.80 | 2.50 | 2.75 |
| ASPI-2012-R24 | 0.24 | M | 0.035 | 0.042 | 4.70 | 5.20 | 2.20 | 2.40 |
| ASPI-2012-R33 | 0.33 | M | 0.035 | 0.042 | 3.50 | 4.00 | 2.20 | 2.40 |
| ASPI-2012-R47 | 0.47 | M | 0.042 | 0.050 | 3.55 | 3.75 | 2.00 | 2.20 |
| ASPI-2012-R68 | 0.68 | M | 0.050 | 0.060 | 2.95 | 3.10 | 1.80 | 2.00 |
| ASPI-2012-1R0 | 1.0 | M | 0.073 | 0.088 | 2.70 | 2.85 | 1.50 | 1.65 |
| ASPI-2012-1R5 | 1.5 | M | 0.093 | 0.112 | 2.00 | 2.20 | 1.30 | 1.45 |
| ASPI-2012-2R2 | 2.2 | M | 0.106 | 0.127 | 1.40 | 1.65 | 1.20 | 1.35 |
| ASPI-2012-3R3 | 3.3 | M | 0.230 | 0.276 | 1.20 | 1.35 | 0.85 | 0.95 |
| ASPI-2012-4R7 | 4.7 | M | 0.245 | 0.294 | 0.97 | 1.10 | 0.82 | 0.90 |
| ASPI-2012-6R8 | 6.8 | M | 0.399 | 0.479 | 0.82 | 0.92 | 0.64 | 0.70 |
| ASPI-2012-100 | 10 | M | 0.654 | 0.785 | 0.72 | 0.82 | 0.49 | 0.54 |
| ASPI-2012-150 | 15 | M | 1.140 | 1.368 | 0.55 | 0.65 | 0.38 | 0.42 |
| ASPI-2012-180 | 18 | M | 1.400 | 1.680 | 0.60 | 0.68 | 0.35 | 0.38 |
| ASPI-2012-220 | 22 | M | 1.400 | 1.680 | 0.40 | 0.50 | 0.35 | 0.38 |
| ASPI-2012-330 | 33 | M | 1.800 | 2.160 | 0.35 | 0.40 | 0.30 | 0.33 |

Test Conditions:

- Ambient Temperature: 20± 15°C
- Relative Humidity: 65%±20%
- Air Pressure: 86KPa to 106KPa

Inductance (L): WK3260B LCR meter or equivalent, 1MHz

Direct Current Resistance (DCR): HIOKI 3540 or equivalent

Saturation Current (I_{sat}): WK3260B LCR meter or equivalent

I_{sat} max. is the DC current at which the inductance drops less than 30% from its value without current.

I_{sat} typ. is the DC current at which the inductance drops approximate 30% from its value without current.

Temperature rise current (I_{rms}): Electric Power, Electric current meter, Thermometer

For I_{rms} max, ΔT<40°C. For I_{rms} typ, ΔT is approximate 40°C.

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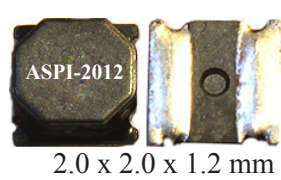


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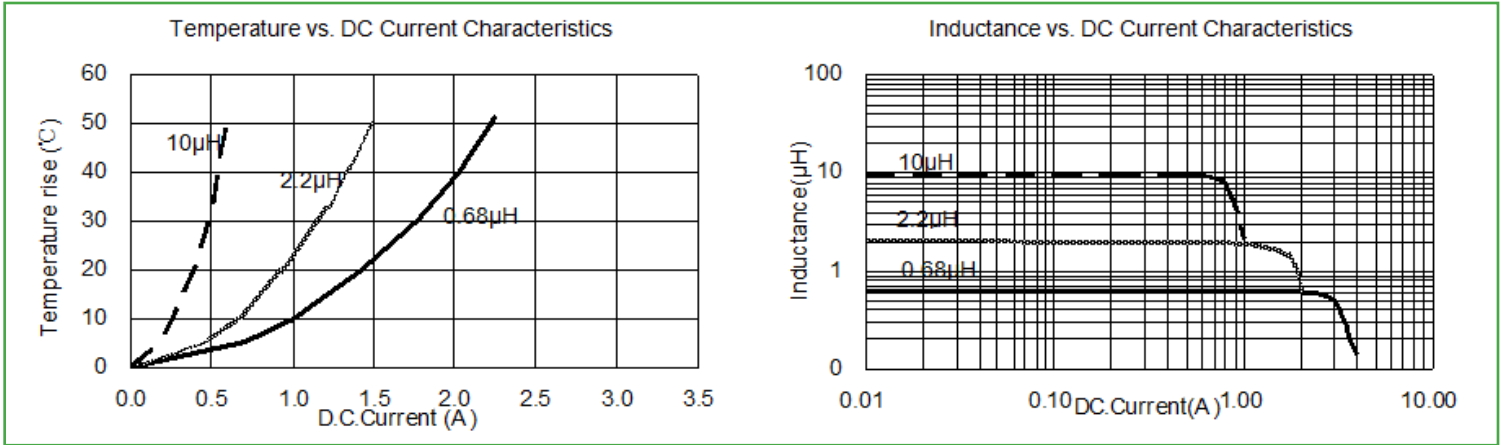
Wire Wound Magnetically Shielded SMD Power Inductor



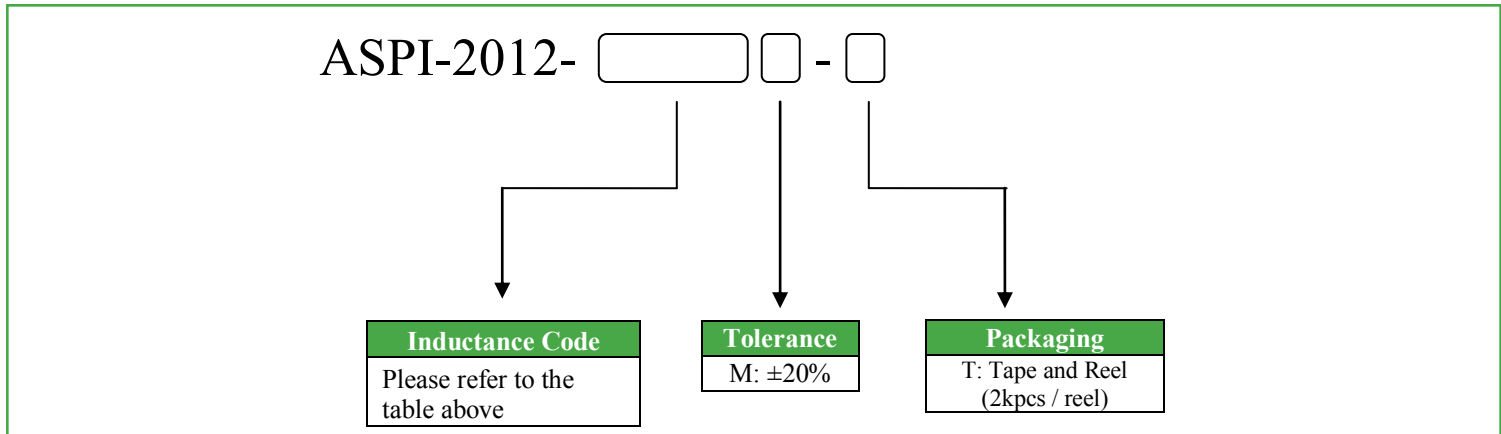
ASPI-2012 series

Pb RoHS/RoHS II Compliant

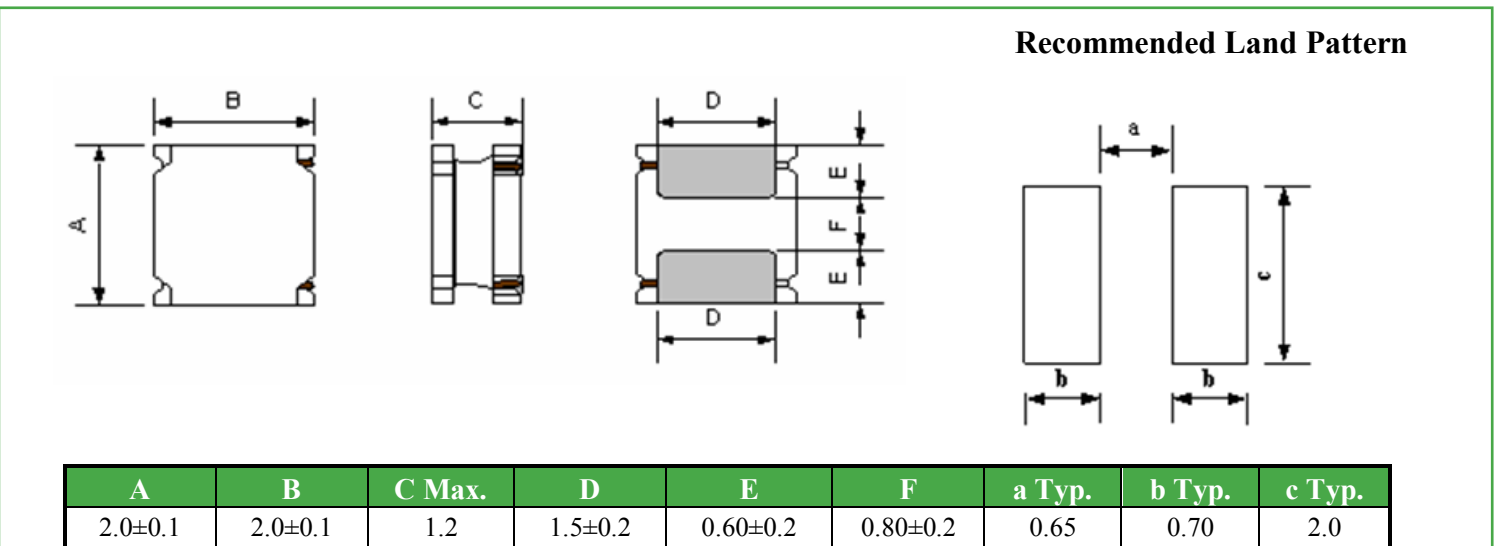
ELECTRICAL CHARACTERISTICS CURVES



PART IDENTIFICATION:

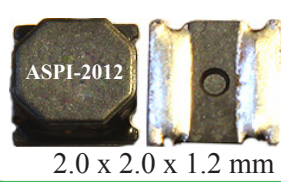


OUTLINE DIMENSION:



Dimensions: mm

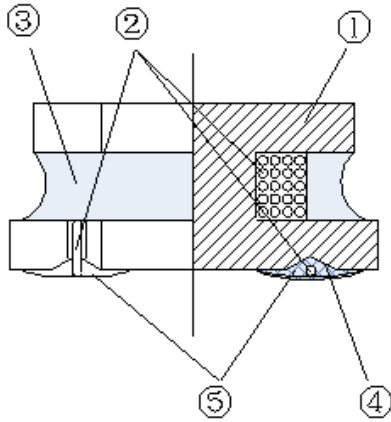
Wire Wound Magnetically Shielded SMD Power Inductor



ASPI-2012 series

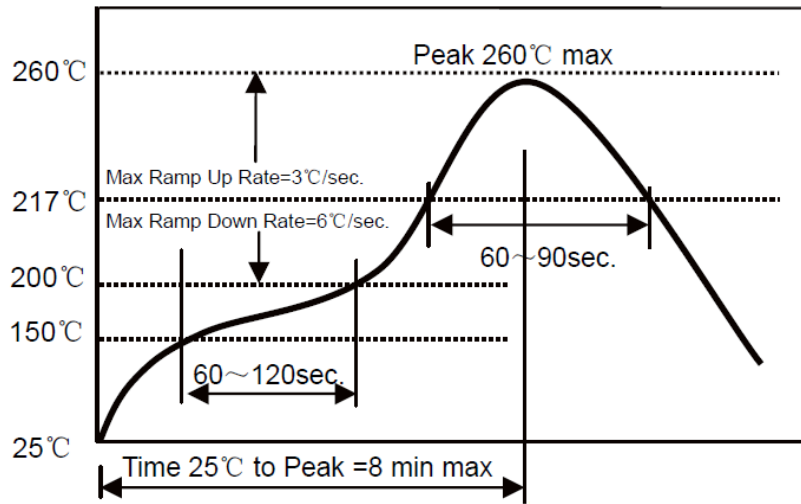
RoHS/RoHS II Compliant

MATERIAL:



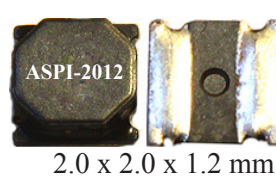
| No | Components | Material |
|----|--------------------|---|
| 1 | Ferrite Core | Ni-Zn Ferrite |
| 2 | Wire | Polyurethane System enameled copper wire |
| 3 | Magnetic Glue | Epoxy resin and magnetic powder |
| 4 | Plating Electrodes | Plating: Ag/Ni/Sn |
| 5 | Outer Electrodes | Top surface solder coating: Sn96.5%/Ag3%/Cu0.5% |

REFLOW PROFILE:



- △ Preheat condition: 150 ~200°C /60~120sec.
- △ Allowed time above 217°C: 60~90sec.
- △ Max temp: 260°C
- △ Max time at max temp: 5sec.
- △ Solder paste: Sn/3.0Ag/0.5Cu
- △ Allowed Reflow time: 2x max

Wire Wound Magnetically Shielded SMD Power Inductor



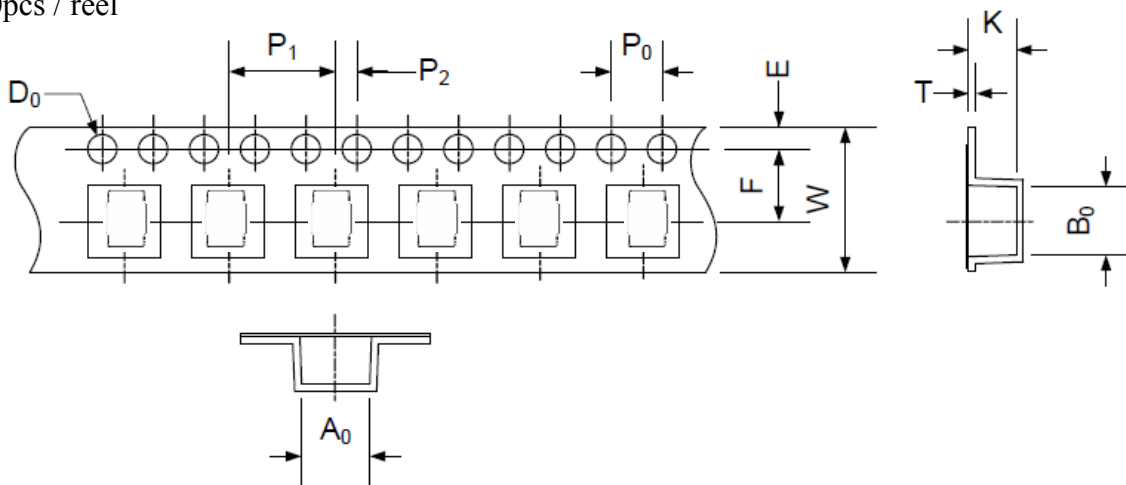
ASPI-2012 series



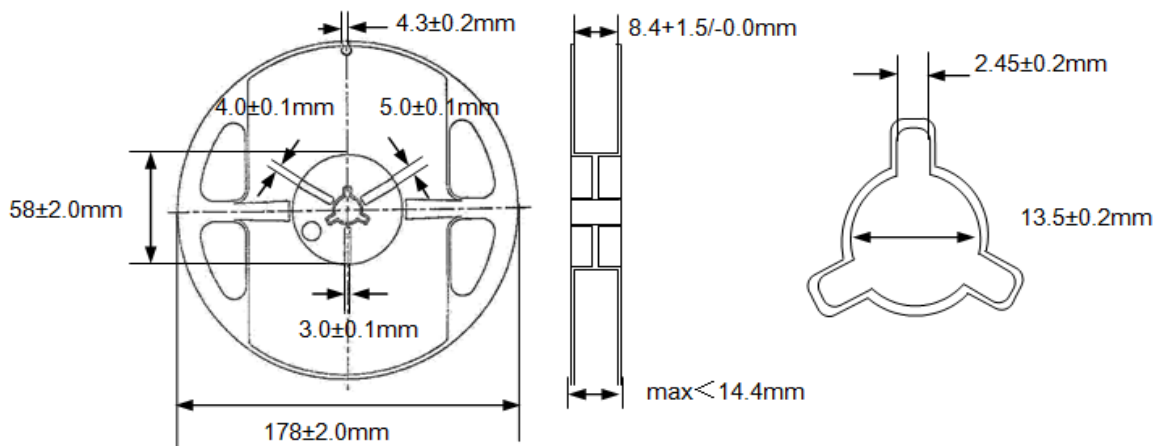
RoHS/RoHS II Compliant

TAPE & REEL:

T: 2,000pcs / reel



| A ₀ | B ₀ | W | E | F | P ₀ | P ₁ | P ₂ | D ₀ | T | K ₀ |
|----------------|----------------|---------|----------|----------|----------------|----------------|----------------|----------------|-----------|----------------|
| 2.35±0.05 | 2.35±0.05 | 8.0±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±0.02 | 1.40±0.05 |



Storage Conditions

- To maintain the solderability of terminal electrodes and to keep the packing material in good condition, temperature and humidity in the storage area should be controlled.
- Recommended conditions: -10°C ~ +40 °C, 70% RH (Max.)
- Even under ideal storage conditions, solderability of products electrodes may decrease as time passes. For this reason, product should be used within one year from the time of delivery.
- In case of storage over 6 months, solderability shall be checked before actual usage.

Dimension: mm

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