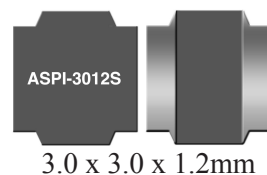


SMD SHIELDED POWER INDUCTOR



ASPI-3012S



RoHS/RoHS II Compliant

3.0 x 3.0 x 1.2mm

FEATURES:

- Shielded magnetics, low radiation
- Large Terminal surface for good PCB bonding
- Low DCR, High Energy storage, suitable for large currents
- Ideal for a variety of DC-DC converter inductor applications

APPLICATIONS:

- Portable communication equipment
- OA equipment
- LCD, DVD, modem, set-top box
- DC/DC converters

ELECTRICAL SPECIFICATIONS:

| | |
|-------------------------|-----------------------------|
| Abrakon P/N: | ASPI-3012S Series |
| Operating Temperature : | -40°C to +125°C |
| Storage Temperature : | -10°C to +40°C and 70% R.H. |

| Part Number ASPI-3012S- Inductance Code | Inductance | L Tolerance | DC Resistance (±30%) | Saturation Current | Temperature Rise Current | Min. Self resonant frequency | Inductance Code |
|---|------------|-------------|-------------------------|-----------------------|-----------------------------|---------------------------------|--------------------|
| Units | μH | — | Ω | A | A | MHz | |
| Symbol | L | N, M | DCR | Isat | Irms | SRF | |
| ASPI-3012S-R82 | 0.82 | N | 0.030 | 2.05 | 2.47 | 180 | R82 |
| ASPI-3012S-1R0 | 1.0 | N | 0.040 | 1.87 | 2.20 | 120 | 1R0 |
| ASPI-3012S-1R2 | 1.2 | N | 0.045 | 2.22 | 2.01 | 120 | 1R2 |
| ASPI-3012S-1R5 | 1.5 | N | 0.045 | 1.62 | 2.01 | 110 | 1R5 |
| ASPI-3012S-1R8 | 1.8 | N | 0.063 | 1.30 | 1.65 | 90 | 1R8 |
| ASPI-3012S-2R2 | 2.2 | N | 0.075 | 1.20 | 1.55 | 84 | 2R2 |
| ASPI-3012S-2R4 | 2.4 | N | 0.068 | 1.15 | 1.60 | 100 | 2R4 |
| ASPI-3012S-2R7 | 2.7 | M,N | 0.085 | 1.14 | 1.48 | 65 | 2R7 |
| ASPI-3012S-3R3 | 3.3 | M,N | 0.100 | 1.05 | 1.36 | 64 | 3R3 |
| ASPI-3012S-3R9 | 3.9 | M,N | 0.145 | 1.00 | 1.24 | 61 | 3R9 |
| ASPI-3012S-4R7 | 4.7 | M,N | 0.120 | 0.90 | 1.24 | 61 | 4R7 |
| ASPI-3012S-6R8 | 6.8 | M,N | 0.190 | 0.75 | 0.98 | 61 | 6R8 |
| ASPI-3012S-100 | 10 | M,N | 0.265 | 0.60 | 0.83 | 42 | 100 |
| ASPI-3012S-120 | 12 | M,N | 0.345 | 0.48 | 0.73 | 32 | 120 |
| ASPI-3012S-150 | 15 | M,N | 0.360 | 0.45 | 0.71 | 27 | 150 |
| ASPI-3012S-180 | 18 | M,N | 0.545 | 0.43 | 0.58 | 25 | 180 |
| ASPI-3012S-220 | 22 | M,N | 0.645 | 0.42 | 0.53 | 23 | 220 |
| ASPI-3012S-270 | 27 | M,N | 0.870 | 0.35 | 0.47 | 21 | 270 |
| ASPI-3012S-330 | 33 | M,N | 0.875 | 0.36 | 0.46 | 18 | 330 |
| ASPI-3012S-360 | 36 | M,N | 0.950 | 0.34 | 0.44 | 18 | 360 |
| ASPI-3012S-390 | 39 | M,N | 1.330 | 0.30 | 0.37 | 18 | 390 |
| ASPI-3012S-470 | 47 | M,N | 1.450 | 0.27 | 0.35 | 14 | 470 |
| ASPI-3012S-680 | 68 | M,N | 1.670 | 0.24 | 0.33 | 12 | 680 |
| ASPI-3012S-820 | 82 | M,N | 2.540 | 0.17 | 0.27 | 12 | 820 |
| ASPI-3012S-101 | 100 | M,N | 2.860 | 0.21 | 0.25 | 12 | 101 |

Test Conditions:

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

Inductance (L): ZM2355 LCR meter or equivalent, 100kHz, 1V_{rms}

Direct Current Resistance (DCR): HIOKI 3540 or equivalent

Saturation Current (Isat): E3260B meter or equivalent

Isat: Based on inductance change (ΔL/Lo :Δ -30%)

Temperature rise current (Irms): Electric Power, Electric current meter, Thermometer

Irms: Based on temperature rise (ΔT : 40 °C TYP.)

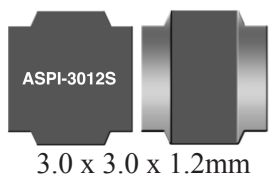
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SMD SHIELDED POWER INDUCTOR



ASPI-3012S

3.0 x 3.0 x 1.2mm

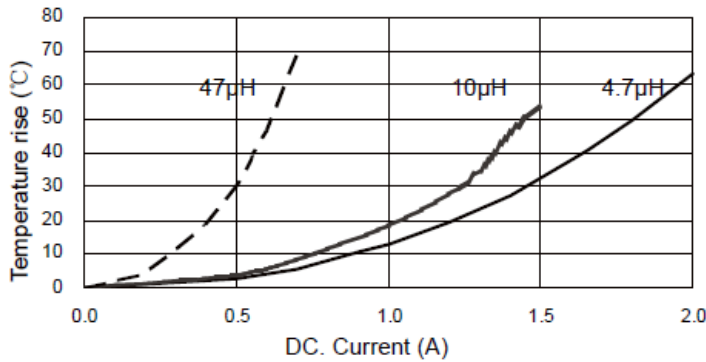
ASPI-3012S



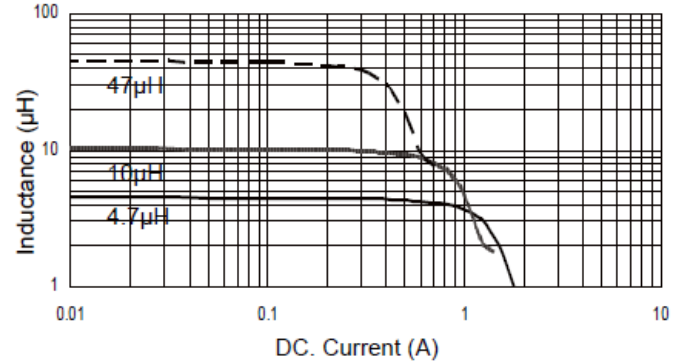
RoHS/RoHS II Compliant

ELECTRICAL SPECIFICATIONS:

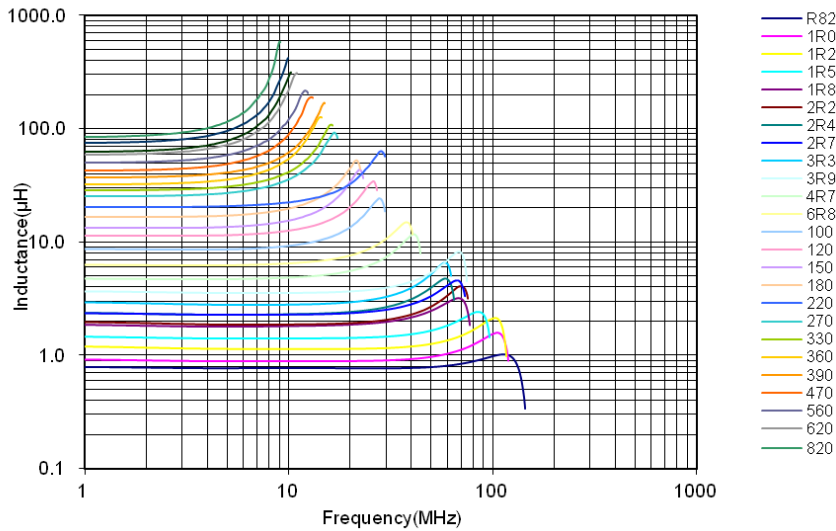
Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics



Inductance VS Frequency



OPTIONS AND PART IDENTIFICATION

ASPI-3012S - -

Inductance Code
Please refer to the table above

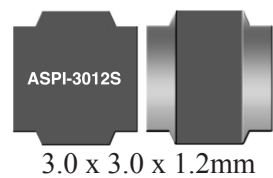
Tolerance
M: ±20% *
N: ±30% *

Packaging
T: Tape and Reel
(2kpcs / reel)

*M for 2.7µH~100µH
*N for 0.82µH~100µH



SMD SHIELDED POWER INDUCTOR



ASPI-3012S

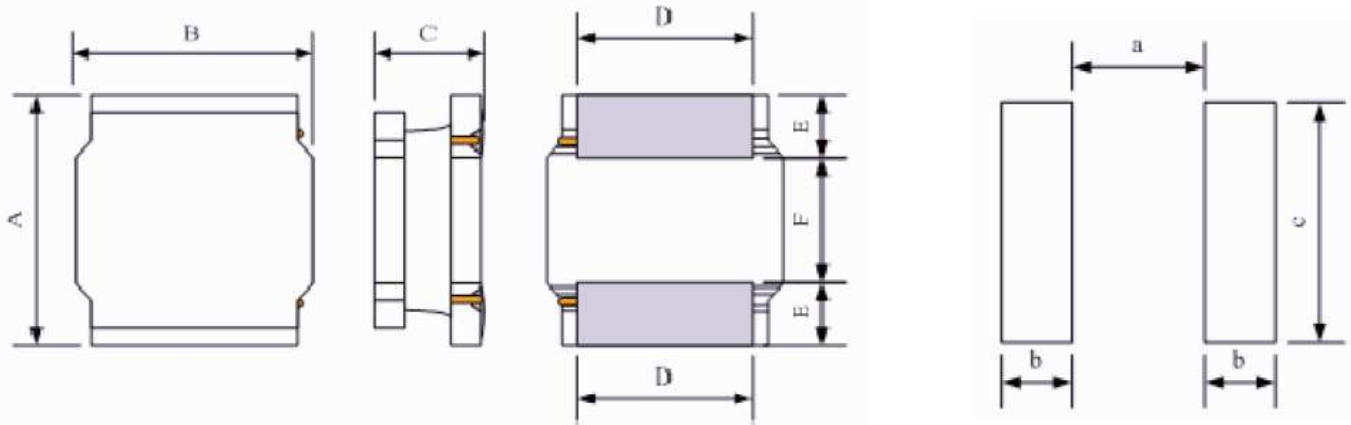


RoHS/RoHS II Compliant

3.0 x 3.0 x 1.2mm

OUTLINE DIMENSIONS:

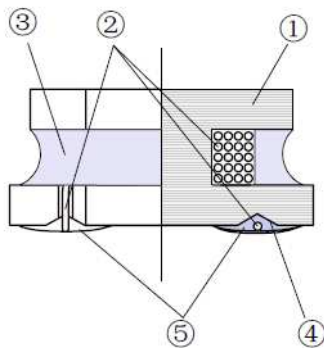
Recommended Land Pattern



| A | B | C Max. | D | E | F | a Typ. | b Typ. | c Typ. |
|---------|---------|---------|---------|----------|---------|---------|---------|---------|
| 3.0±0.2 | 3.0±0.2 | 1.2Max. | 2.5±0.2 | 0.75±0.2 | 1.5±0.2 | 1.5Typ. | 0.8Typ. | 2.7Typ. |

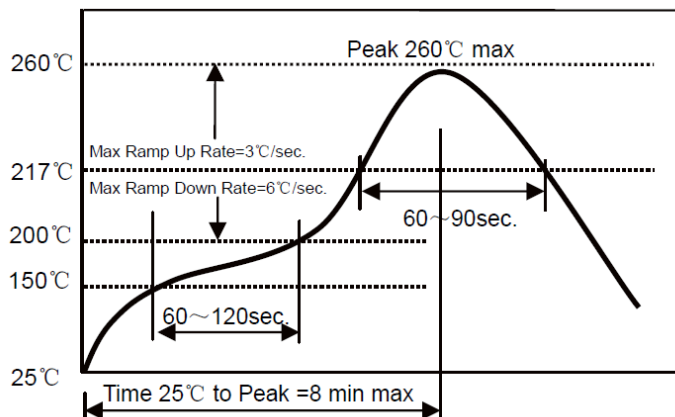
Dimensions: mm

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 | Plating Electrodes | Plating: Ag/Ni/Sn |
| 5 | Outer Electrodes | Top surface solder coating: Sn96.5%/Ag3%/Cu0.5% |

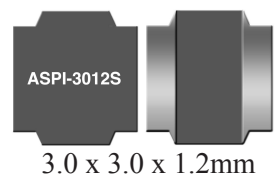
REFLOW PROFILE:



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



SMD SHIELDED POWER INDUCTOR



ASPI-3012S



RoHS/RoHS II Compliant

3.0 x 3.0 x 1.2mm

TAPE & REEL:

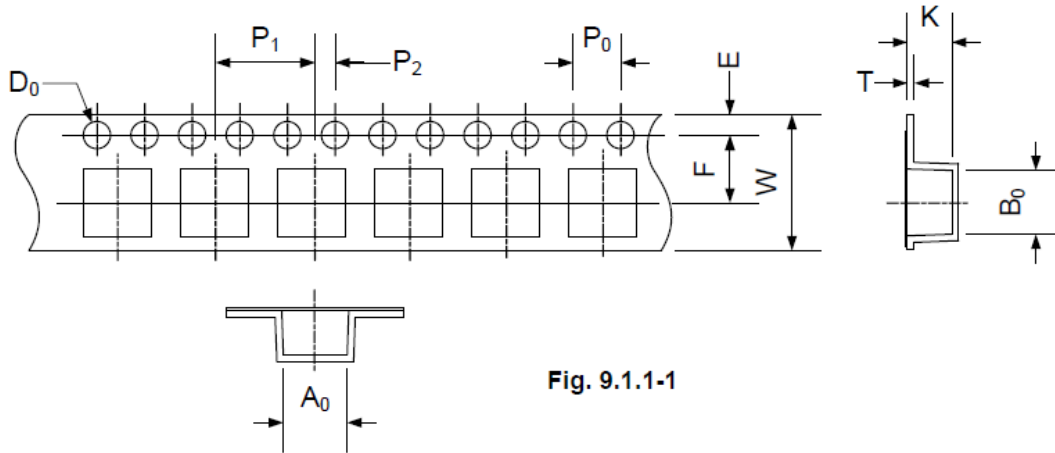
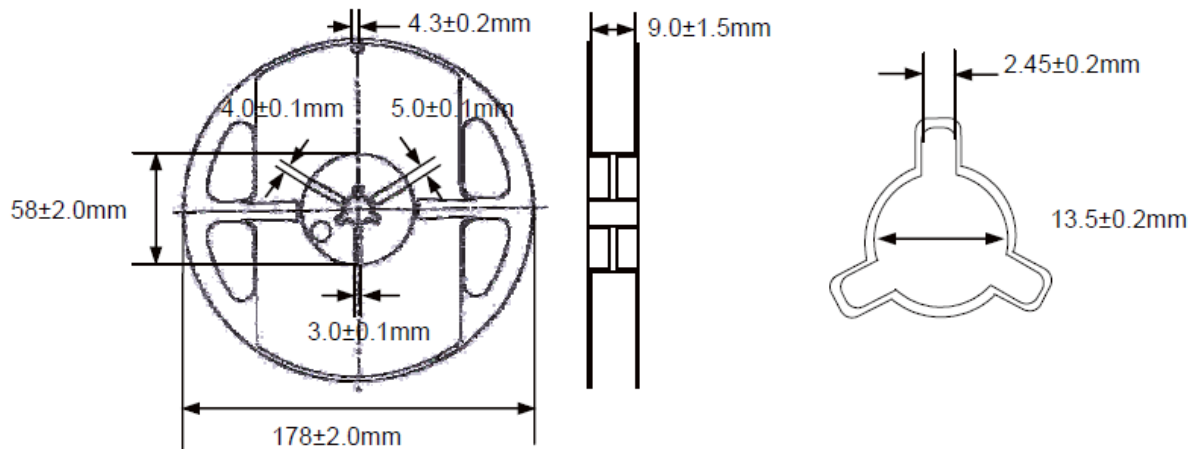


Fig. 9.1.1-1

| A0 | B0 | W | E | F | P0 | P1 | P2 | D0 | T | K |
|---------|---------|---------|----------|----------|---------|---------|---------|--------------|-----------|---------|
| 3.3±0.1 | 3.3±0.1 | 8.0±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 | 1.6±0.1 |



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 with 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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