

# Wire Wound Magnetically Shielded SMD Power Inductor



4.0 x 4.0 x 3.0 mm

ASPI-4030S



RoHS/RoHS II Compliant

## 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:

|                         |                                 |
|-------------------------|---------------------------------|
| Abracon P/N:            | ASPI-4030S Series               |
| Operating Temperature : | -40°C to +125°C                 |
| Storage Temperature :   | -10°C to +40°C and 70% R.H. max |

| Part Number    | Inductance | L Tolerance | DC Resistance (±30%) | Saturation Current | Temperature Rise Current | Self resonant frequency | Inductance Code Marking |
|----------------|------------|-------------|----------------------|--------------------|--------------------------|-------------------------|-------------------------|
| Units          | μH         | —           | Ω                    | A Max              | A Max                    | MHz Min                 |                         |
| Symbol         | L          | N, M        | DCR                  | Isat               | Irms                     | SRF                     |                         |
| ASPI-4030S-R91 | 0.91       | N           | 0.013                | 6.25               | 4.15                     | 100                     | R91                     |
| ASPI-4030S-1R0 | 1.0        | N           | 0.014                | 5.26               | 4.15                     | 70                      | 1R0                     |
| ASPI-4030S-1R2 | 1.2        | N           | 0.015                | 5.80               | 3.82                     | 80                      | 1R2                     |
| ASPI-4030S-1R5 | 1.5        | N           | 0.020                | 4.84               | 3.34                     | 62                      | 1R5                     |
| ASPI-4030S-1R8 | 1.8        | N           | 0.025                | 5.40               | 3.20                     | 60                      | 1R8                     |
| ASPI-4030S-2R2 | 2.2        | N           | 0.030                | 4.90               | 2.95                     | 52                      | 2R2                     |
| ASPI-4030S-3R3 | 3.3        | M           | 0.040                | 3.30               | 2.40                     | 38                      | 3R3                     |
| ASPI-4030S-4R3 | 4.3        | M           | 0.055                | 2.95               | 2.10                     | 37                      | 4R3                     |
| ASPI-4030S-4R7 | 4.7        | M           | 0.060                | 2.90               | 2.00                     | 31                      | 4R7                     |
| ASPI-4030S-5R6 | 5.6        | M           | 0.065                | 2.60               | 1.95                     | 30                      | 5R6                     |
| ASPI-4030S-6R8 | 6.8        | M           | 0.090                | 2.75               | 1.60                     | 24                      | 6R8                     |
| ASPI-4030S-7R5 | 7.5        | M           | 0.085                | 2.20               | 1.65                     | 26                      | 7R5                     |
| ASPI-4030S-8R2 | 8.2        | M           | 0.090                | 2.10               | 1.60                     | 26                      | 8R2                     |
| ASPI-4030S-100 | 10         | M           | 0.100                | 1.95               | 1.50                     | 21                      | 100                     |
| ASPI-4030S-120 | 12         | M           | 0.135                | 1.70               | 1.30                     | 18                      | 120                     |
| ASPI-4030S-150 | 15         | M           | 0.190                | 1.65               | 1.11                     | 16                      | 150                     |
| ASPI-4030S-180 | 18         | M           | 0.200                | 1.40               | 1.10                     | 10                      | 180                     |
| ASPI-4030S-220 | 22         | M           | 0.225                | 1.30               | 1.00                     | 10                      | 220                     |
| ASPI-4030S-330 | 33         | M           | 0.330                | 1.10               | 0.84                     | 10                      | 330                     |
| ASPI-4030S-360 | 36         | M           | 0.335                | 1.05               | 0.83                     | 9.8                     | 360                     |
| ASPI-4030S-390 | 39         | M           | 0.435                | 1.03               | 0.73                     | 10                      | 390                     |
| ASPI-4030S-470 | 47         | M           | 0.445                | 0.95               | 0.72                     | 8.4                     | 470                     |
| ASPI-4030S-510 | 51         | M           | 0.470                | 0.90               | 0.70                     | 8.4                     | 510                     |
| ASPI-4030S-560 | 56         | M           | 0.555                | 0.85               | 0.65                     | 8.4                     | 560                     |
| ASPI-4030S-620 | 62         | M           | 0.585                | 0.80               | 0.63                     | 7.0                     | 620                     |
| ASPI-4030S-680 | 68         | M           | 0.868                | 0.72               | 0.52                     | 7.0                     | 680                     |
| ASPI-4030S-750 | 75         | M           | 1.020                | 0.70               | 0.48                     | 6.3                     | 750                     |
| ASPI-4030S-820 | 82         | M           | 1.060                | 0.66               | 0.47                     | 5.6                     | 820                     |
| ASPI-4030S-910 | 91         | M           | 1.100                | 0.65               | 0.46                     | 5.6                     | 910                     |
| ASPI-4030S-101 | 100        | M           | 1.150                | 0.60               | 0.45                     | 5.6                     | 101                     |
| ASPI-4030S-121 | 120        | M           | 1.350                | 0.55               | 0.42                     | 5.4                     | 121                     |

### Test Conditions:

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

Inductance (L): WK3260B LCR meter or equivalent, 100kHz, 1Vrms

Direct Current Resistance (DCR): HIOKI 3540 or equivalent

Saturation Current (Isat): WK3260B LCR meter or equivalent

Isat: Based on inductance change ( $\Delta L/L_o \leq -30\%$ )

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

Irms: Based on temperature rise ( $\Delta T : 40^\circ\text{C TYP.}$ )

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# Wire Wound Magnetically Shielded SMD Power Inductor



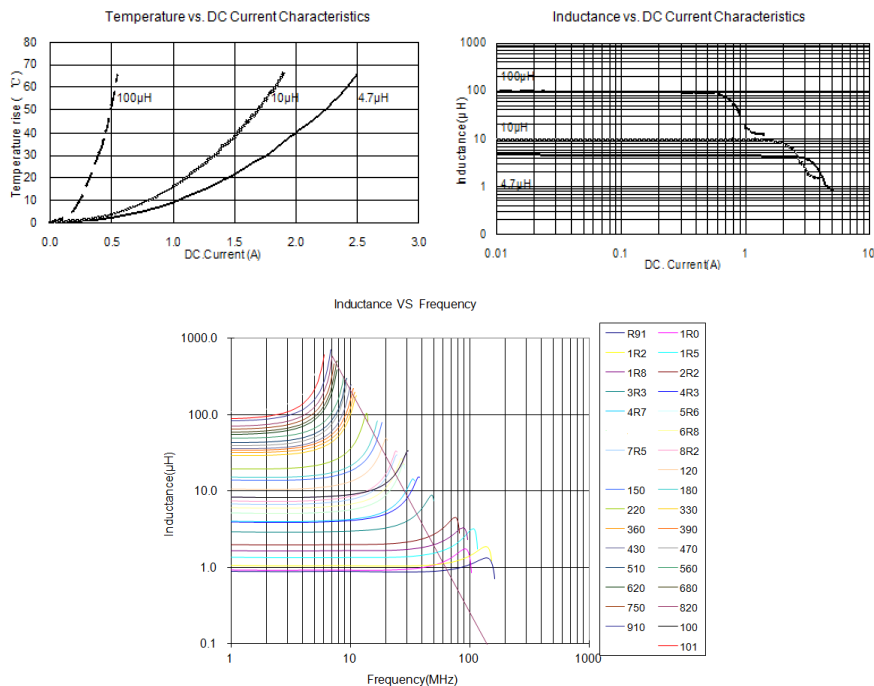
4.0 x 4.0 x 3.0 mm

ASPI-4030S



RoHS/RoHS II Compliant

## ELECTRICAL CHARACTERISTICS CURVES



## PART IDENTIFICATION:

ASPI-4030S - [ ] - [ ]

### Inductance Code

Please refer to the table above

### Tolerance

M: ±20% \*  
N: ±30% \*

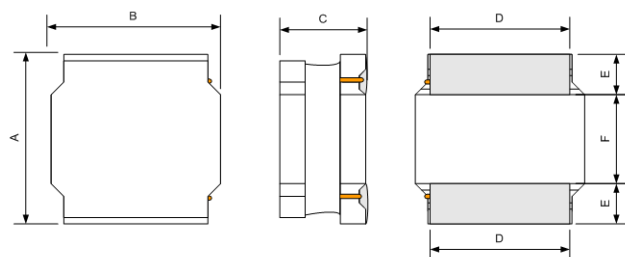
### Packaging

T: Tape and Reel  
(2kpcs / reel)

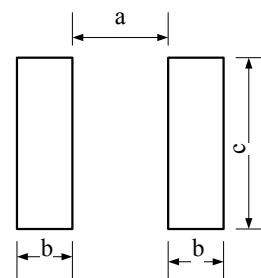
\*M for 3.3μH~120μH

\*N for 0.91μH~2.2μH

## OUTLINE DIMENSIONS:



### Recommended Land Pattern



| A       | B       | C Max. | D       | E        | F       | a Typ. | b Typ. | c Typ. |
|---------|---------|--------|---------|----------|---------|--------|--------|--------|
| 4.0±0.2 | 4.0±0.2 | 3.0    | 3.3±0.2 | 0.95±0.2 | 2.1±0.2 | 1.9    | 1.1    | 3.4    |

Dimensions: mm



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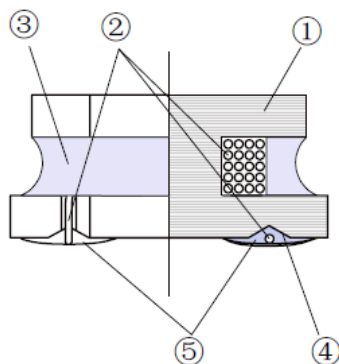
4.0 x 4.0 x 3.0 mm

ASPI-4030S



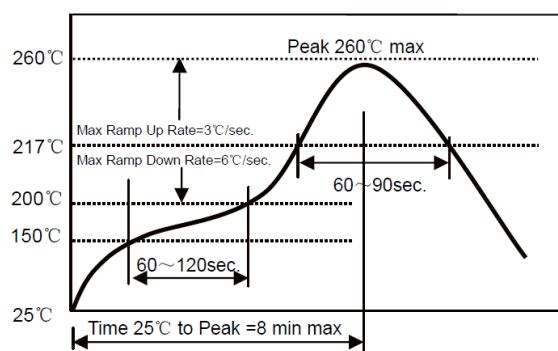
RoHS/RoHS II Compliant

## 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% |

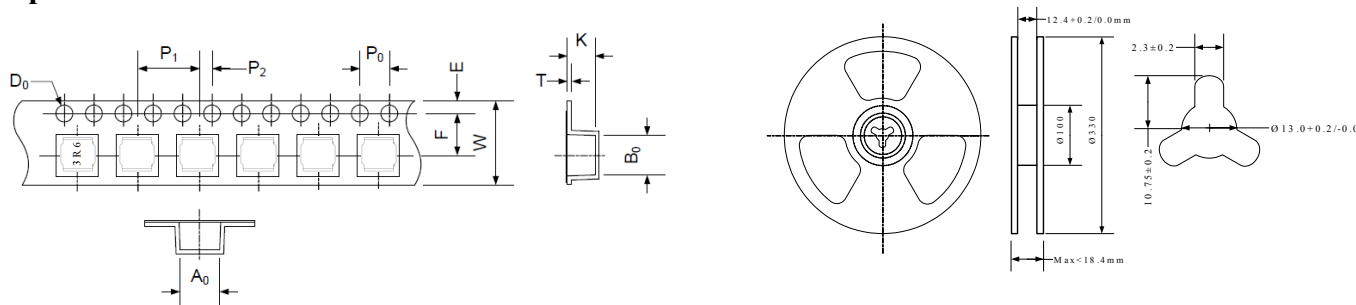
## REFLOW PROFILE:



- 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

## TAPE & REEL:

T: 2,000pcs / reel



| A0      | B0      | W        | E        | F       | P0      | P1      | P2      | D0           | T        | K       |
|---------|---------|----------|----------|---------|---------|---------|---------|--------------|----------|---------|
| 4.3±0.1 | 4.3±0.1 | 12.0±0.3 | 1.75±0.1 | 5.5±0.1 | 4.0±0.1 | 8.0±0.1 | 2.0±0.1 | 1.5+0.1/-0.0 | 0.4±0.03 | 3.2±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 12 months, solderability shall be checked before actual usage.

**Dimensions: mm**

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