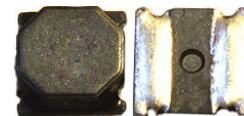


# Wire Wound Magnetically Shielded SMD Power Inductor



8.0 x 8.0 x 4.2mm

ASPI-8040S



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-8040S Series           |
| Operating Temperature | -40°C to +125°C             |
| Storage Temperature   | -10°C to +40°C and 70% R.H. |

| Part Number<br>ASPI-8040S-<br>Inductance Code | Inductance | L Tolerance | DC Resistance<br>(±30%) | Saturation<br>Current | Temperature<br>Rise Current | Min. Self resonant<br>frequency |
|-----------------------------------------------|------------|-------------|-------------------------|-----------------------|-----------------------------|---------------------------------|
| Units                                         | μH         | —           | Ω                       | A                     | A                           | MHz                             |
| Symbol                                        | L          | N, M        | DCR                     | Isat                  | Irms                        | SRF                             |
| ASPI-8040S-R82                                | 0.82       | N           | 0.008                   | 13.8                  | 6.30                        | 94                              |
| ASPI-8040S-1R0                                | 1.0        | N           | 0.008                   | 9.85                  | 6.30                        | 89                              |
| ASPI-8040S-1R5                                | 1.5        | N           | 0.010                   | 8.15                  | 5.65                        | 67                              |
| ASPI-8040S-2R0                                | 2.0        | N           | 0.012                   | 9.25                  | 5.15                        | 43                              |
| ASPI-8040S-2R2                                | 2.2        | N           | 0.012                   | 7.10                  | 5.15                        | 41                              |
| ASPI-8040S-3R0                                | 3.0        | N           | 0.014                   | 6.10                  | 4.70                        | 32                              |
| ASPI-8040S-3R3                                | 3.3        | N           | 0.017                   | 6.50                  | 4.40                        | 27                              |
| ASPI-8040S-3R6                                | 3.6        | N           | 0.017                   | 7.52                  | 4.35                        | 30                              |
| ASPI-8040S-3R9                                | 3.9        | N           | 0.017                   | 5.75                  | 4.35                        | 26                              |
| ASPI-8040S-4R7                                | 4.7        | N           | 0.019                   | 5.90                  | 4.10                        | 24                              |
| ASPI-8040S-5R1                                | 5.1        | N           | 0.019                   | 4.70                  | 4.05                        | 22                              |
| ASPI-8040S-5R6                                | 5.6        | N           | 0.021                   | 6.00                  | 3.85                        | 24                              |
| ASPI-8040S-6R2                                | 6.2        | N           | 0.021                   | 4.45                  | 3.85                        | 20                              |
| ASPI-8040S-6R8                                | 6.8        | M           | 0.024                   | 4.55                  | 3.60                        | 20                              |
| ASPI-8040S-8R2                                | 8.2        | M           | 0.026                   | 4.20                  | 3.45                        | 17                              |
| ASPI-8040S-100                                | 10         | M           | 0.029                   | 3.60                  | 3.30                        | 15                              |
| ASPI-8040S-150                                | 15         | M           | 0.047                   | 2.95                  | 2.60                        | 12                              |
| ASPI-8040S-180                                | 18         | M           | 0.053                   | 2.70                  | 2.40                        | 11                              |
| ASPI-8040S-220                                | 22         | M           | 0.069                   | 2.40                  | 2.10                        | 9.5                             |
| ASPI-8040S-270                                | 27         | M           | 0.078                   | 2.15                  | 2.00                        | 9.2                             |
| ASPI-8040S-330                                | 33         | M           | 0.097                   | 2.05                  | 1.80                        | 7.8                             |
| ASPI-8040S-360                                | 36         | M           | 0.102                   | 2.00                  | 1.75                        | 7.8                             |
| ASPI-8040S-390                                | 39         | M           | 0.107                   | 1.95                  | 1.70                        | 7.8                             |
| ASPI-8040S-430                                | 43         | M           | 0.113                   | 1.90                  | 1.65                        | 7.8                             |
| ASPI-8040S-470                                | 47         | M           | 0.136                   | 1.75                  | 1.55                        | 6.4                             |
| ASPI-8040S-510                                | 51         | M           | 0.142                   | 1.70                  | 1.50                        | 6.4                             |
| ASPI-8040S-560                                | 56         | M           | 0.148                   | 1.55                  | 1.45                        | 6.4                             |
| ASPI-8040S-620                                | 62         | M           | 0.182                   | 1.50                  | 1.30                        | 6.4                             |
| ASPI-8040S-680                                | 68         | M           | 0.196                   | 1.45                  | 1.25                        | 4.9                             |
| ASPI-8040S-750                                | 75         | M           | 0.211                   | 1.35                  | 1.20                        | 4.9                             |
| ASPI-8040S-820                                | 82         | M           | 0.225                   | 1.30                  | 1.15                        | 5.9                             |
| ASPI-8040S-910                                | 91         | M           | 0.272                   | 1.20                  | 1.05                        | 4.9                             |
| ASPI-8040S-101                                | 100        | M           | 0.290                   | 1.15                  | 1.00                        | 4.2                             |

ABRACON IS  
ISO9001:2008  
CERTIFIED

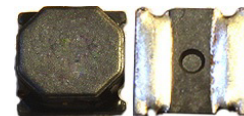


**ABRACON**  
CORPORATION

Visit [www.abracon.com](http://www.abracon.com) for Terms & Conditions of Sale  
30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)

Revised: 02.03.14

# Wire Wound Magnetically Shielded SMD Power Inductor



8.0 x 8.0 x 4.2mm

ASPI-8040S



RoHS/RoHS II compliant

| Part Number<br>ASPI-8040S-<br>Inductance Code | Inductance | L Tolerance | DC Resistance<br>(±30%) | Saturation<br>Current | Temperature<br>Rise Current | Min. Self resonant<br>frequency |
|-----------------------------------------------|------------|-------------|-------------------------|-----------------------|-----------------------------|---------------------------------|
| Units                                         | μH         | —           | Ω                       | A                     | A                           | MHz                             |
| Symbol                                        | L          | N, M        | DCR                     | Isat                  | Irms                        | SRF                             |
| ASPI-8040S-121                                | 120        | M           | 0.334                   | 1.05                  | 0.95                        | 3.5                             |
| ASPI-8040S-151                                | 150        | M           | 0.410                   | 1.10                  | 0.85                        | 3.5                             |
| ASPI-8040S-221                                | 220        | M           | 0.599                   | 0.85                  | 0.80                        | 3.5                             |
| ASPI-8040S-331                                | 330        | M           | 0.889                   | 0.68                  | 0.64                        | 2.8                             |

## 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<sub>rms</sub>

Direct Current Resistance (DCR): HIOKI 3540 or equivalent

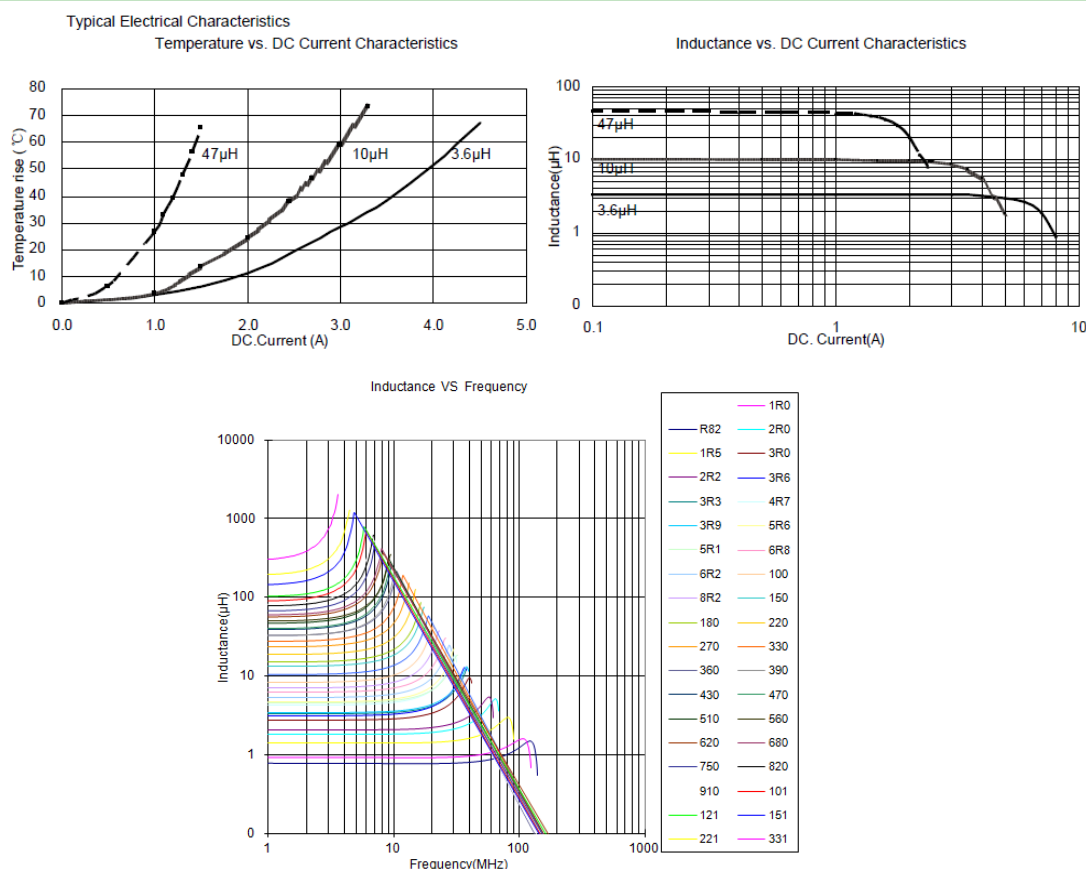
Saturation Current (Isat): Saturation current meter

Isat: Based on inductance change ( $\Delta L/L_0$  :  $\Delta$  -30%)

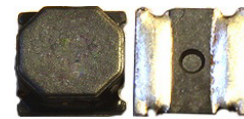
Temperature rise current (Irms): Electric Power, Electric current meter, Thermometer

Irms: Based on temperature rise ( $\Delta T$  : 40°C TYP. )

## ELECTRICAL CHARACTERISTICS CURVES



# Wire Wound Magnetically Shielded SMD Power Inductor



8.0 x 8.0 x 4.2mm

ASPI-8040S



RoHS/RoHS II compliant

## ELECTRICAL CHARACTERISTICS CURVES

ASPI-8040S -  -

### Inductance Code

Please refer to the table above

### Tolerance

M:  $\pm 20\%$  \*

N:  $\pm 30\%$  \*

### Packaging

T: Tape and Reel  
(1kpcs / reel)

\*M for  $6.8\mu\text{H} \sim 330\mu\text{H}$

\*N for  $0.82\mu\text{H} \sim 6.2\mu\text{H}$

## OUTLINE DIMENSIONS:

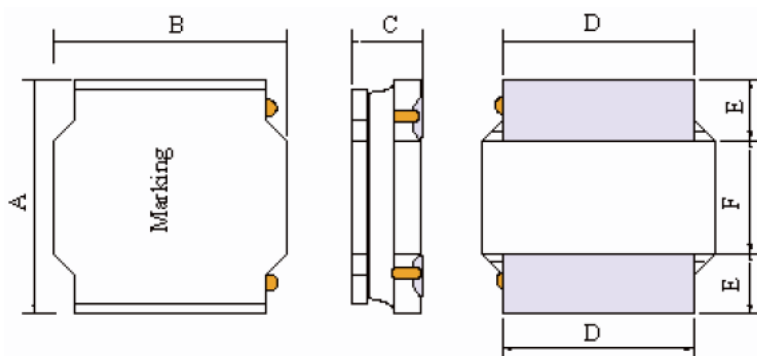
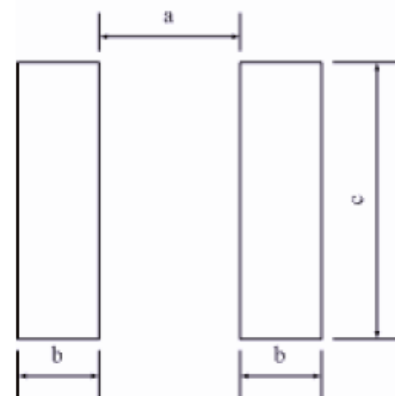


Fig.5-1

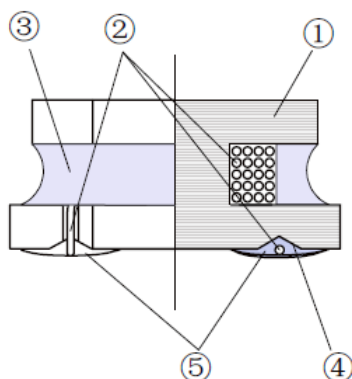
### Recommended Land Pattern



| A             | B             | C Max.  | D             | E              | F             | a Typ.  | b Typ.  | c Typ.  |
|---------------|---------------|---------|---------------|----------------|---------------|---------|---------|---------|
| $8.0 \pm 0.3$ | $8.0 \pm 0.3$ | 4.2Max. | $6.3 \pm 0.3$ | $2.00 \pm 0.3$ | $4.0 \pm 0.3$ | 3.8Typ. | 2.2Typ. | 7.5Typ. |

Dimensions: mm

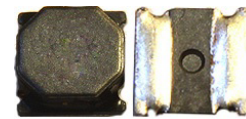
## Materials



| 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%/Ag3.0%/Cu0.5% |



# Wire Wound Magnetically Shielded SMD Power Inductor



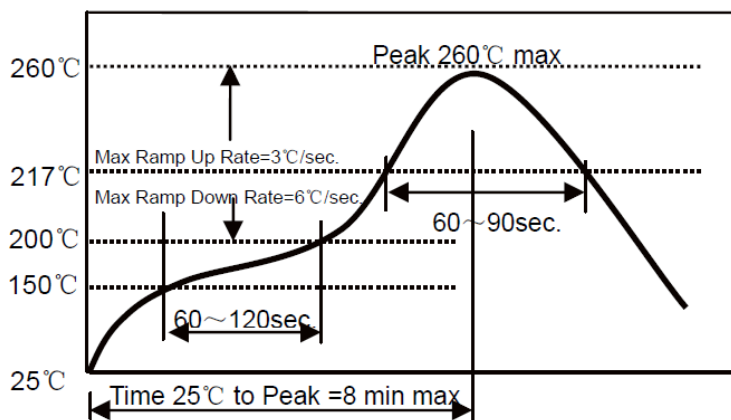
8.0 x 8.0 x 4.2mm

ASPI-8040S



RoHS/RoHS II compliant

## REFLOW PROFILE

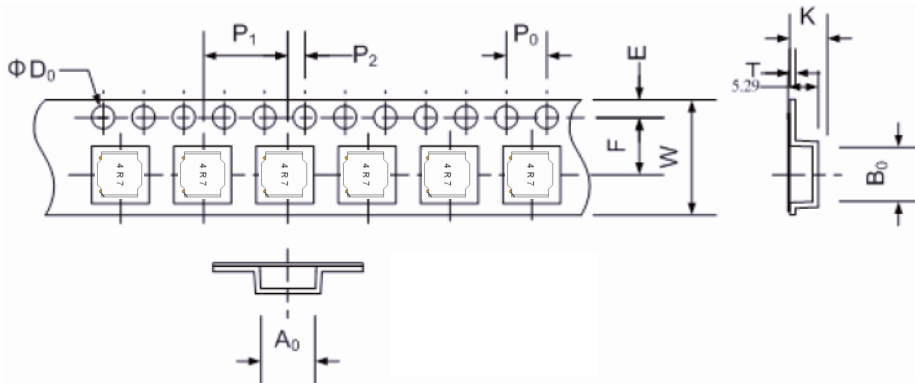


- △ 1~2 °C/sec. Ramp
- △ Pre-heating: 150~190°C/90±30 sec.
- △ Time above 240°C: 20~40sec
- △ Peak temperature: 260°C Max./5sec;
- △ Solder paste: Sn/3.0Ag/0.5Cu
- △ Max.2 times for Re-flowing

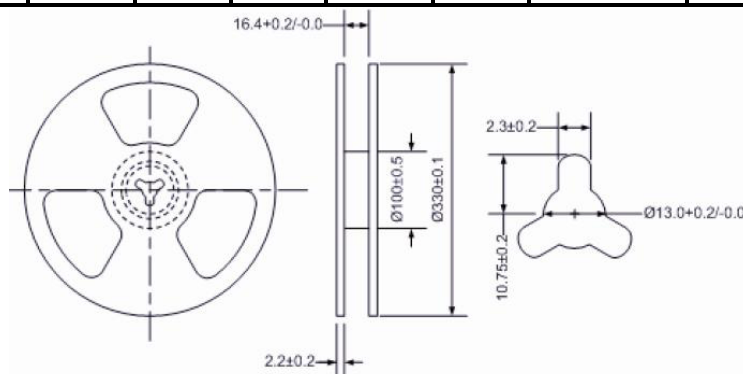
## TAPE & REEL:

### Packing

T: 1,000pcs / reel



| A0       | B0       | W        | E        | F       | P0      | P1       | P2      | D0           | T        | K       |
|----------|----------|----------|----------|---------|---------|----------|---------|--------------|----------|---------|
| 8.35±0.1 | 8.35±0.1 | 16.0±0.3 | 1.75±0.1 | 7.5±0.1 | 4.0±0.1 | 12.0±0.1 | 2.0±0.1 | 1.5+0.1/-0.0 | 0.4±0.03 | 4.4±0.1 |



### Storage Conditions

- a. 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.
- b. Recommended conditions: -10°C ~ 40 °C, 70% RH (Max.)
- c. 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.
- d. In case of storage over 6 months, solderability shall be checked before actual usage.

Dimension: mm

**ATTENTION:** Abracon Corporation's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependant Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon Corporation is required. Please contact Abracon Corporation for more information.

ABRACON IS  
ISO9001:2008  
CERTIFIED



**ABRACON**  
CORPORATION

Visit [www.abracon.com](http://www.abracon.com) for Terms & Conditions of Sale  
30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)

Revised: 02.03.14