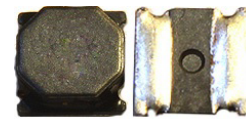




**THE DATASHEET OF
ASPI-8040S-331M-T**



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 ASPI-8040S- Inductance Code | Inductance | L Tolerance | DC Resistance (±30%) | Saturation Current | Temperature Rise Current | Min. Self resonant 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 |

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ISO9001:2008
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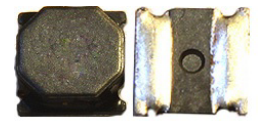


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Revised: 02.03.14

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8.0 x 8.0 x 4.2mm

ASPI-8040S

RoHS/RoHS II compliant

| Part Number ASPI-8040S- Inductance Code | Inductance | L Tolerance | DC Resistance (±30%) | Saturation Current | Temperature Rise Current | Min. Self resonant 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_{rms}

Direct Current Resistance (DCR): HIOKI 3540 or equivalent

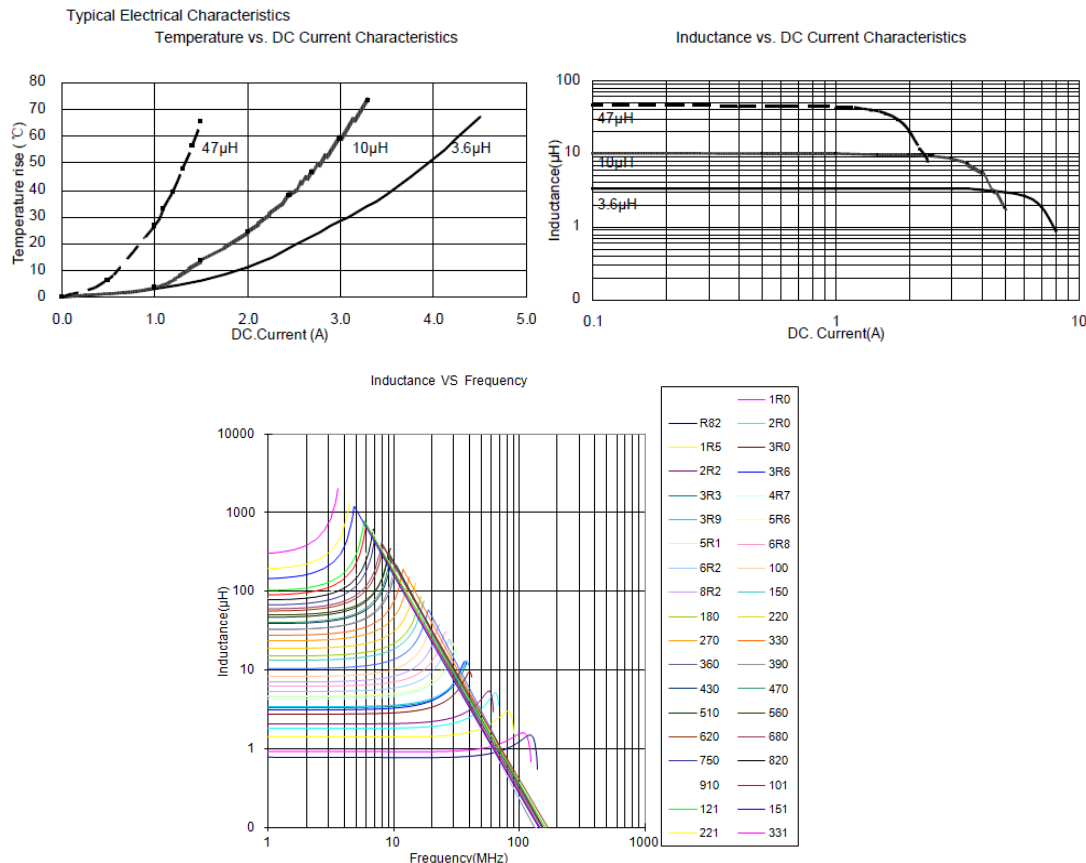
Saturation Current (Isat): Saturation current meter

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

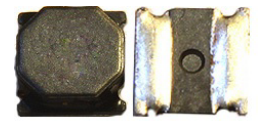
Temperature rise current (Irms): Electric Power, Electric current meter, Thermometer

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

ELECTRICAL CHARACTERISTICS CURVES



Wire Wound Magnetically Shielded SMD Power Inductor



8.0 x 8.0 x 4.2mm

ASPI-8040S

Pb 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:

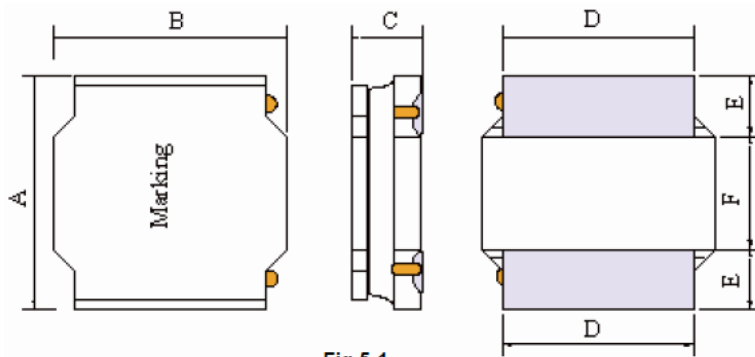
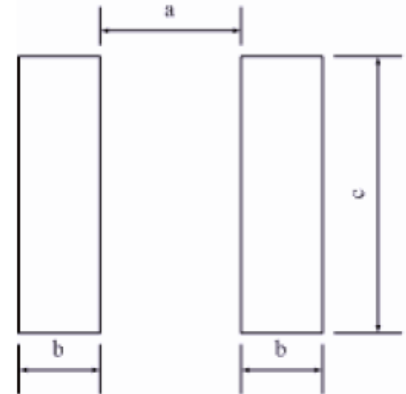


Fig.5-1

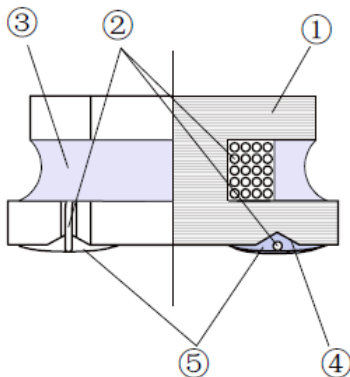
Recommended Land Pattern



| 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. |

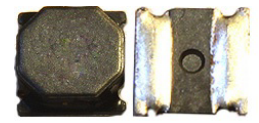
Dimensions: mm

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

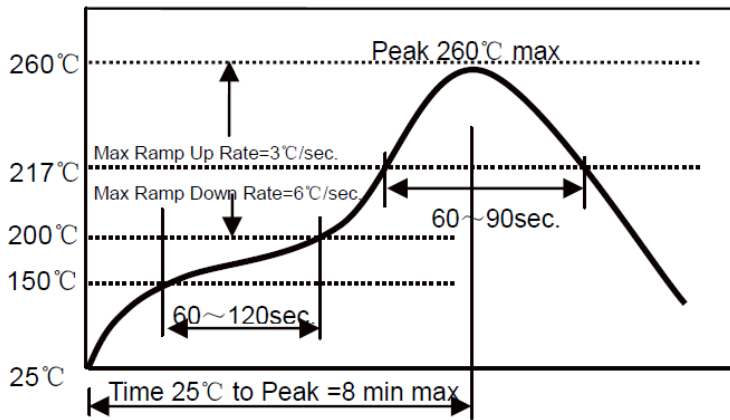


8.0 x 8.0 x 4.2mm

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REFLOW PROFILE

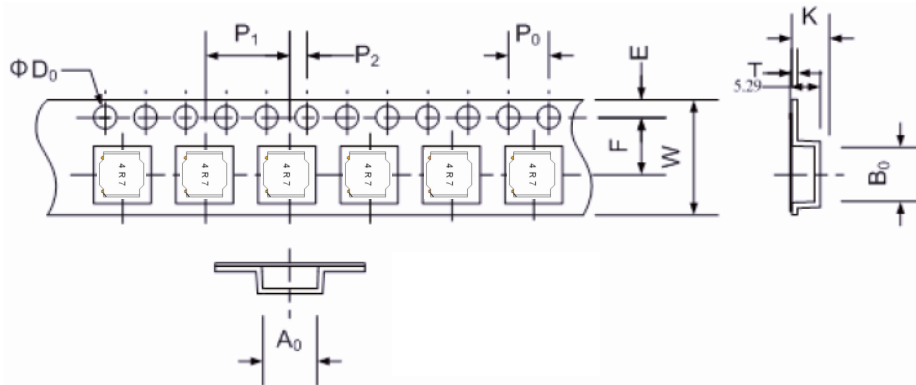


- △ 1~2 °C/sec. Ramp
- △ Pre-heating: 150~190°C/90±30 sec.
- △ Time above 240°C: 20~40sec
- △ Peak temperature: 260°C Max./5sec;
- △ Solder paste: Sn/3.0Ag/0.5Cu
- △ Max.2 times for Re-flowing

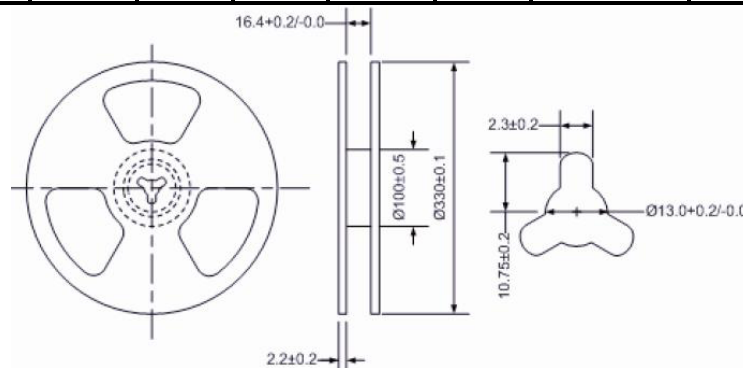
TAPE & REEL:

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

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