

Wire Wound Magnetically Shielded SMD Power Inductor (High Current)



2.0 x 1.6 x 1.0 mm

ASPI-2010HC



RoHS/RoHS II Compliant

FEATURES:

- Iron based core provides large saturation current
- Low DCR lowers power loss
- Magnetic-resin shielding reduces leakage flux and Electro Magnetic Interference (EMI)
- Metal core designed for excellent shock resistance
- Low profile package takes up little PCB space

APPLICATIONS:

- Smart Phone, Tablet, Notebook, Desktop, Server
- Blu-Ray Disc Recorder, Set Top Box
- Portable Gaming Device, Navigation Device

ELECTRICAL SPECIFICATIONS:

| | |
|----------------------------------|--|
| Abracon P/N: | ASPI-2010HC |
| Operating Temperature & Humidity | -40°C ~ +125°C (including self heating) |
| Storage Temperature & Humidity: | -10°C ~ +40°C and 70% R.H. max. (In tape and reel) |

| Part Number ASPI-2010HC- Inductance Code | Inductance | Inductance Tolerance | DC Resistance Max | Min. Self Resonant Frequency | Saturation Current Typ | Saturation Current Max | Temperature Rise Current Typ | Temperature Rise Current Max |
|--|------------|-------------------------|----------------------|------------------------------------|---------------------------|---------------------------|------------------------------------|------------------------------------|
| Units | μH | % | Ω Max | MHz | A Typ | A Max | A Typ | A Max |
| Symbol | L | M | | SRF Min | Isat | | Irms | |
| ASPI-2010HC-R24 | 0.24 | M | 0.040 | 145 | 5.50 | 4.50 | 3.45 | 3.00 |
| ASPI-2010HC-R47 | 0.47 | M | 0.049 | 102 | 4.70 | 4.00 | 3.10 | 2.70 |
| ASPI-2010HC-R68 | 0.68 | M | 0.065 | 77 | 4.00 | 3.50 | 2.80 | 2.50 |
| ASPI-2010HC-1R0 | 1.0 | M | 0.090 | 70 | 3.85 | 3.35 | 2.35 | 2.05 |
| ASPI-2010HC-2R2 | 2.2 | M | 0.170 | 39 | 2.15 | 1.90 | 1.70 | 1.45 |
| ASPI-2010HC-100 | 10 | M | 0.826 | 15 | 0.95 | 0.80 | 0.75 | 0.65 |

Test Conditions:

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

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

Direct Current Resistance (DCR): HIOKI 3540 or equivalent.

Saturation Current (Isat): WK3260B LCR meter or equivalent.

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

Saturation Current Max: DC current at which the inductance drops less than 30% from its value without current.

Saturation Current Typ: DC current at which the inductance drops approximate 30% from its value without current.

Irms: DC current that causes the temperature rise (ΔT) from 20°C ambient.

ΔT < 40°C for Irms max; ΔT is approximate 40°C for Irms typ.

OPTIONS AND PART IDENTIFICATION

ASPI-2010HC- [] [] - []

Inductance Code
Please refer to the table above

Tolerance
M: ±20%

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

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Revised: 01.07.13

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2.0 x 1.6 x 1.0 mm

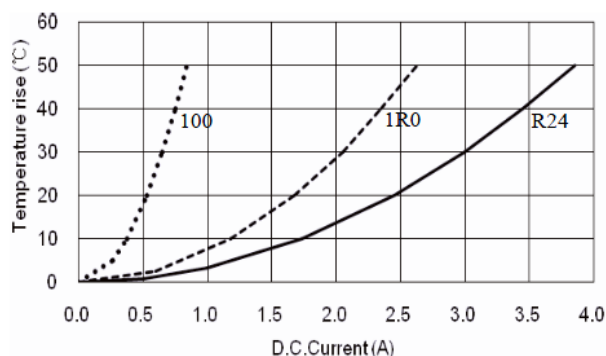
ASPI-2010HC



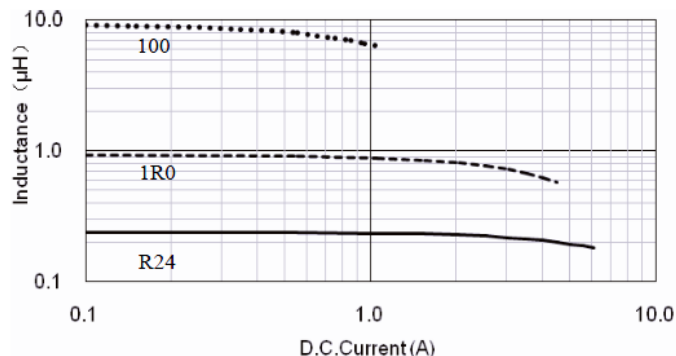
RoHS/RoHS II Compliant

ELECTRICAL CHARACTERISTICS CURVES

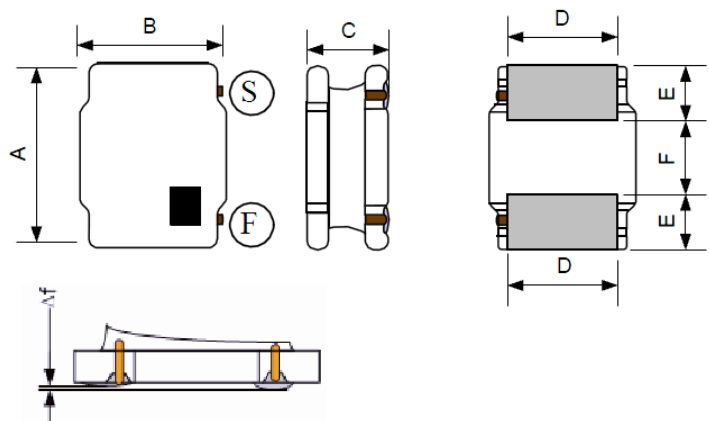
Temperature vs. DC Current Characteristics



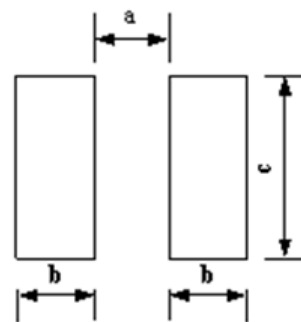
Inductance vs. DC Current Characteristics



OUTLINE DIMENSIONS:



Recommended Land Pattern

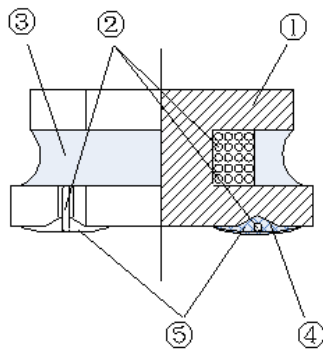


Δf: Clearance between terminal and the surface of plate must be 0.1mm max when coil is placed on a flat plate.

| A | B | C Max. | D | E | F | a Typ. | b Typ. | c Typ. |
|---------|---------|--------|---------|----------|----------|--------|--------|--------|
| 2.0±0.2 | 1.6±0.2 | 1.0 | 1.2±0.2 | 0.60±0.2 | 0.80±0.2 | 0.70 | 0.70 | 1.70 |

Dimensions: mm

Materials



| No | Components | Material |
|----|----------------|--|
| 1 | Core | Soft magnetic metal |
| 2 | Wire | Polyurethane system enameled copper wire |
| 3 | Magnetic Glue | Epoxy resin and magnetic powder |
| 4 | Substrate | FeNiCu/Ag |
| 5 | Top Electrodes | Sn alloy |



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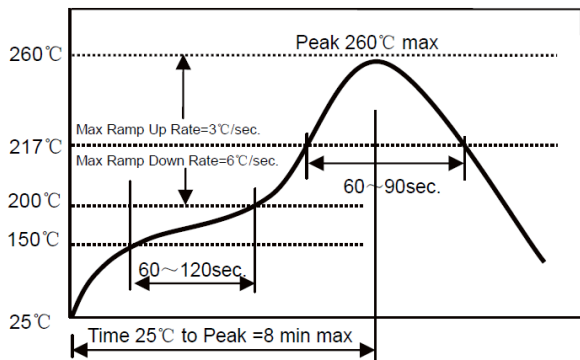
2.0 x 1.6 x 1.0 mm

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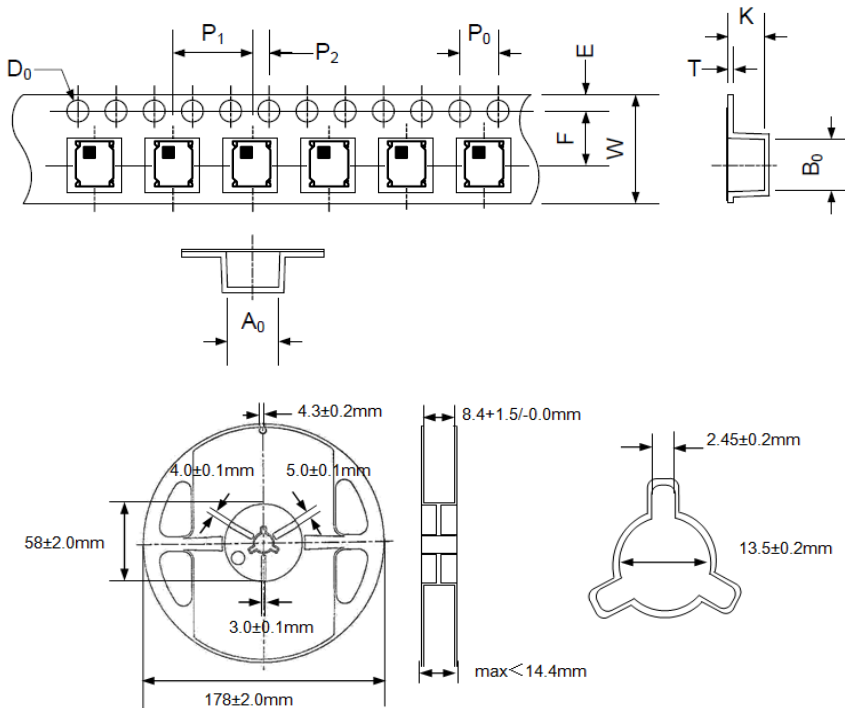
REFLOW PROFILE:



- △ 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

TAPE & REEL:

T: 2,000pcs / reel



| A ₀ | B ₀ | W | E | F | P ₀ | P ₁ | P ₂ | D ₀ | T | K |
|----------------|----------------|---------|----------|----------|----------------|----------------|----------------|----------------|-----------|-----------|
| 1.90±0.05 | 2.20±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 | 1.20±0.05 |

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 within 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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