

# 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

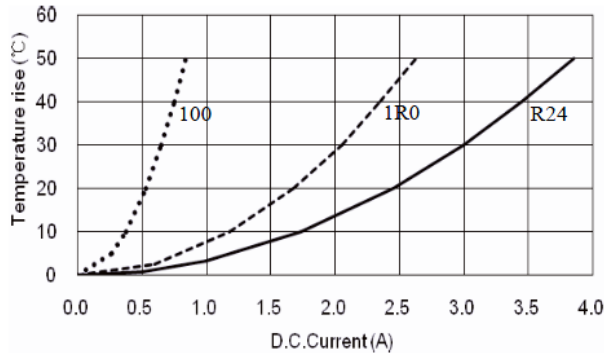
ASPI-2010HC



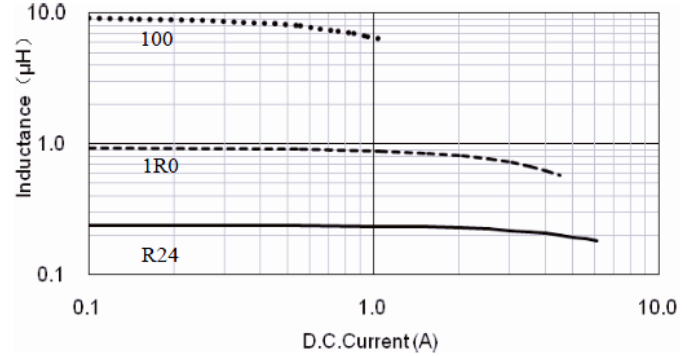
RoHS/RoHS II Compliant

## ELECTRICAL CHARACTERISTICS CURVES

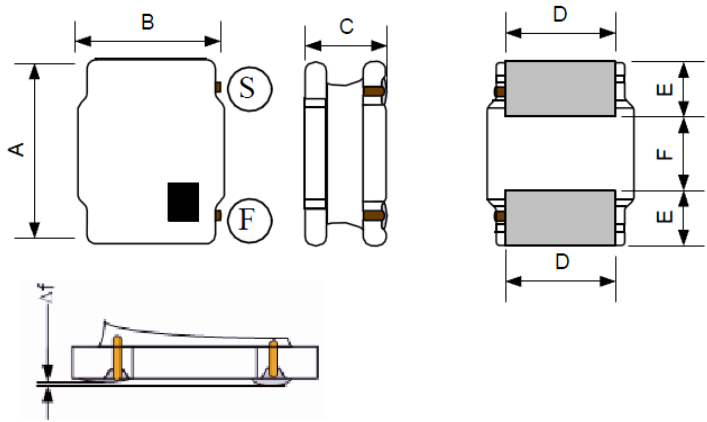
Temperature vs. DC Current Characteristics



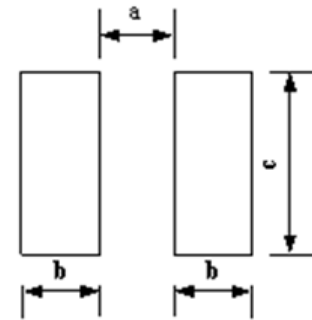
Inductance vs. DC Current Characteristics



## OUTLINE DIMENSIONS:



### Recommended Land Pattern

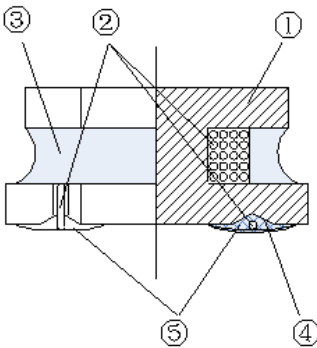


Δf: Clearance between terminal and the surface of plate must be 0.1mm max when coil is placed on a flat plate.

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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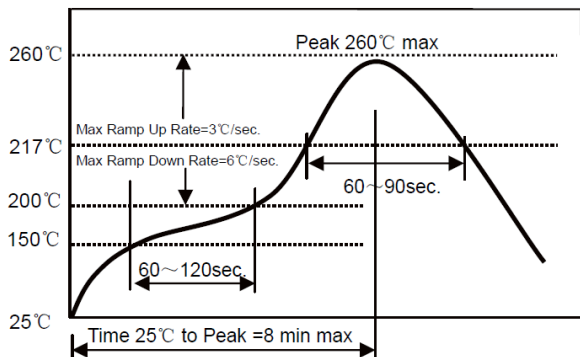
2.0 x 1.6 x 1.0 mm

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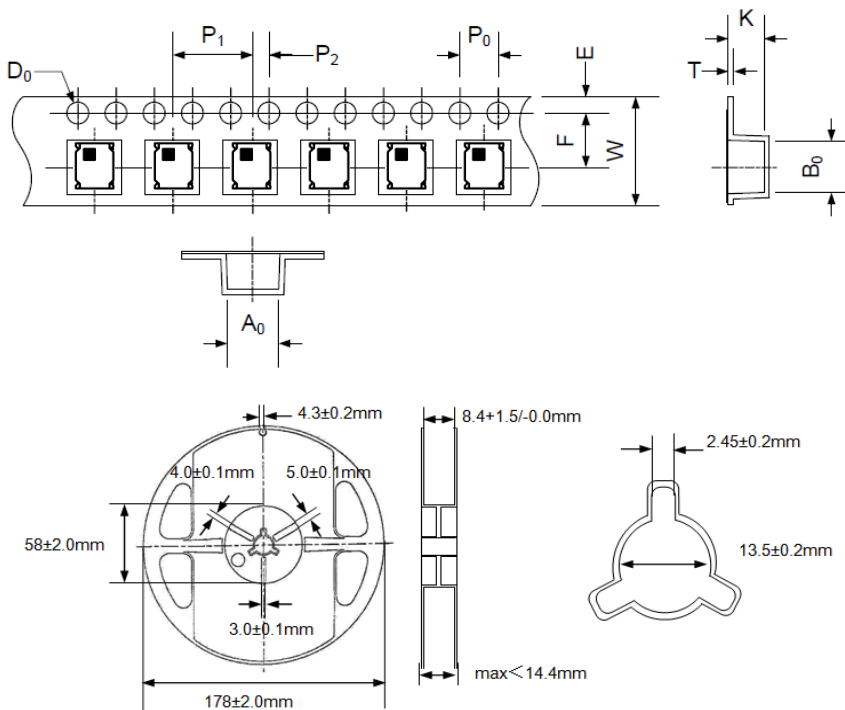
## REFLOW PROFILE:



- △ 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 <sub>0</sub>	B <sub>0</sub>	W	E	F	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	D <sub>0</sub>	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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