Wire Wound Magnetically Shielded SMD Power Inductor

ASPI-2012 series

RoHS/RoHS II Compliant



2.0 x 2.0 x 1.2 mm

FEATURES:

- Small size and low profile: 1.2mm
- Small DCR and high rated current
- High reliability to mechanical stress
- Magnetically shielded by magnetic powder molding
- Suitable for RoHS reflow profile

APPLICATIONS:

- Mobile phones
- MP3 & 4 and other portable communication equipment
- Digital cameras.

ELECTRICAL SPECIFICATIONS:

Abracon P/N:	ASPI-2012 series
Operating Temperature & Humidity :	-40˚C ~ +125˚C (including self heating)
Storage Temperature & Humidity:	-10˚C ~ +40˚C and 70% R.H. max.

Part Number ASPI-2012- Inductance Code	Inductance	L Tolerance	DC Resistance Typ	DC Resistance Max	Saturation Current Max	Saturation Current Typ	Temperature Rise Current Max	Temperature Rise Current Typ
Units	µH	—	Ω Typ	Ω Max	A Max	A Typ	A Max	A Typ
Symbol	L	M	DCR		Isat		Irms	
ASPI-2012-R16	0.16	M	0.026	0.031	5.20	5.80	2.50	2.75
ASPI-2012-R24	0.24	M	0.035	0.042	4.70	5.20	2.20	2.40
ASPI-2012-R33	0.33	M	0.035	0.042	3.50	4.00	2.20	2.40
ASPI-2012-R47	0.47	M	0.042	0.050	3.55	3.75	2.00	2.20
ASPI-2012-R68	0.68	M	0.050	0.060	2.95	3.10	1.80	2.00
ASPI-2012-1R0	1.0	M	0.073	0.088	2.70	2.85	1.50	1.65
ASPI-2012-1R5	1.5	M	0.093	0.112	2.00	2.20	1.30	1.45
ASPI-2012-2R2	2.2	M	0.106	0.127	1.40	1.65	1.20	1.35
ASPI-2012-3R3	3.3	M	0.230	0.276	1.20	1.35	0.85	0.95
ASPI-2012-4R7	4.7	M	0.245	0.294	0.97	1.10	0.82	0.90
ASPI-2012-6R8	6.8	M	0.399	0.479	0.82	0.92	0.64	0.70
ASPI-2012-100	10	M	0.654	0.785	0.72	0.82	0.49	0.54
ASPI-2012-150	15	M	1.140	1.368	0.55	0.65	0.38	0.42
ASPI-2012-180	18	M	1.400	1.680	0.60	0.68	0.35	0.38
ASPI-2012-220	22	M	1.400	1.680	0.40	0.50	0.35	0.38
ASPI-2012-330	33	M	1.800	2.160	0.35	0.40	0.30	0.33

Test Conditions:

a. Ambient Temperature: 20± 15°C
b. Relative Humidity: 65%±20%
c. Air Pressure: 86KPa to 106KPa

Inductance (L): WK3260B LCR meter or equivalent, 1MHz
Direct Current Resistance (DCR): HIOKI 3540 or equivalent
Saturation Current (I_{sat}): WK3260B LCR meter or equivalent
I_{sat} max. is the DC current at which the inductance drops less than 30% from its value without current.
I_{sat} typ. is the DC current at which the inductance drops approximate 30% from its value without current.
Temperature rise current (I_{rms}): Electric Power, Electric current meter, Thermometer
For I_{rms} max, $\Delta T<40^{o}C$. For I_{rms} typ, ΔT is approximate $40^{o}C$.

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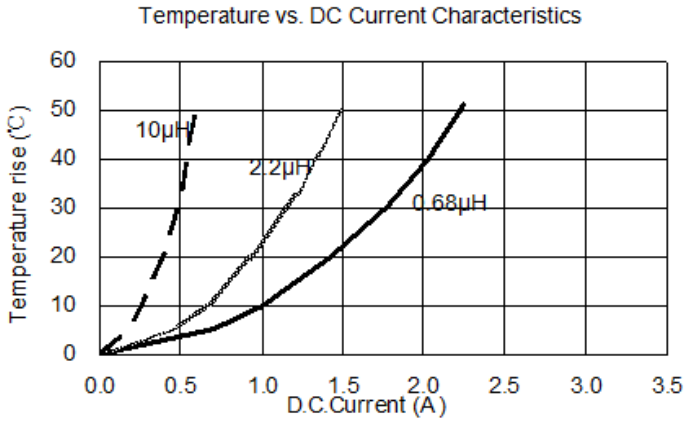
ASPI-2012 series

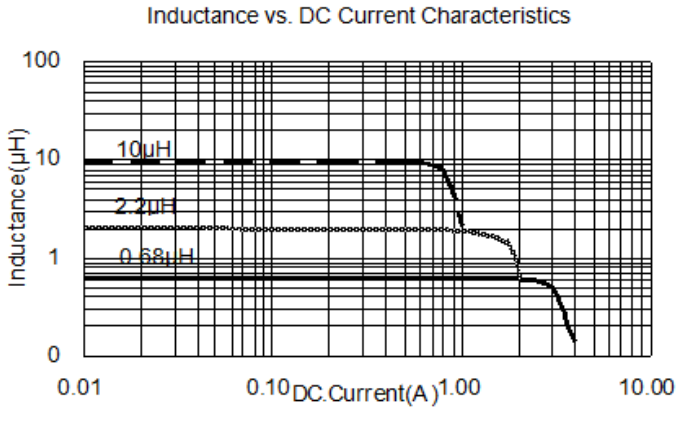
RoHS/RoHS II Compliant



2.0 x 2.0 x 1.2 mm

ELECTRICAL CHARACTERISTICS CURVES





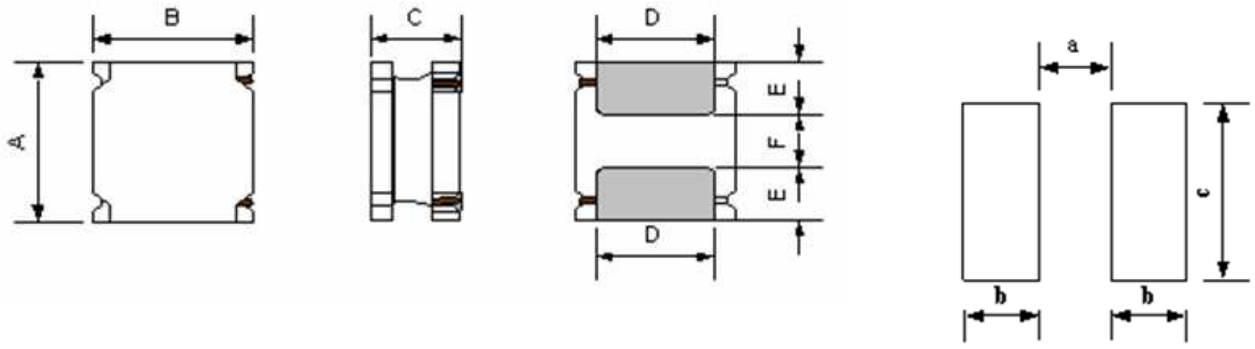
PART IDENTIFICATION:

ASPI-2012- ☐☐ - ☐

Inductance Code	Tolerance	Packaging
Please refer to the table above	M: ±20%	T: Tape and Reel (2kpcs / reel)

OUTLINE DIMENSION:

Recommended Land Pattern



A	B	C Max.	D	E	F	a Typ.	b Typ.	c Typ.
2.0±0.1	2.0±0.1	1.2	1.5±0.2	0.60±0.2	0.80±0.2	0.65	0.70	2.0

Dimensions: mm

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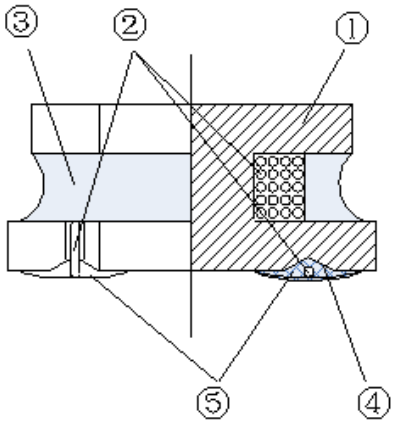


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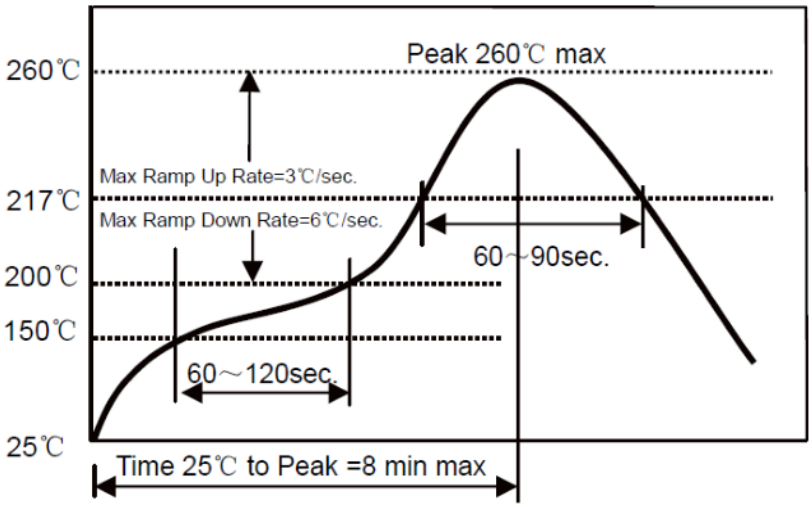
RoHS/RoHS II Compliant

MATERIAL:



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

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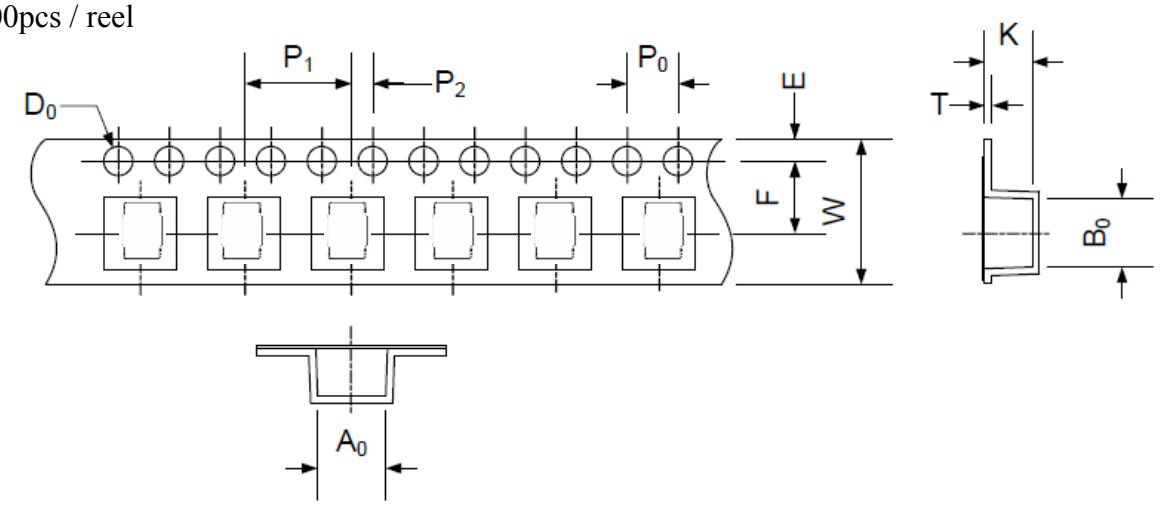
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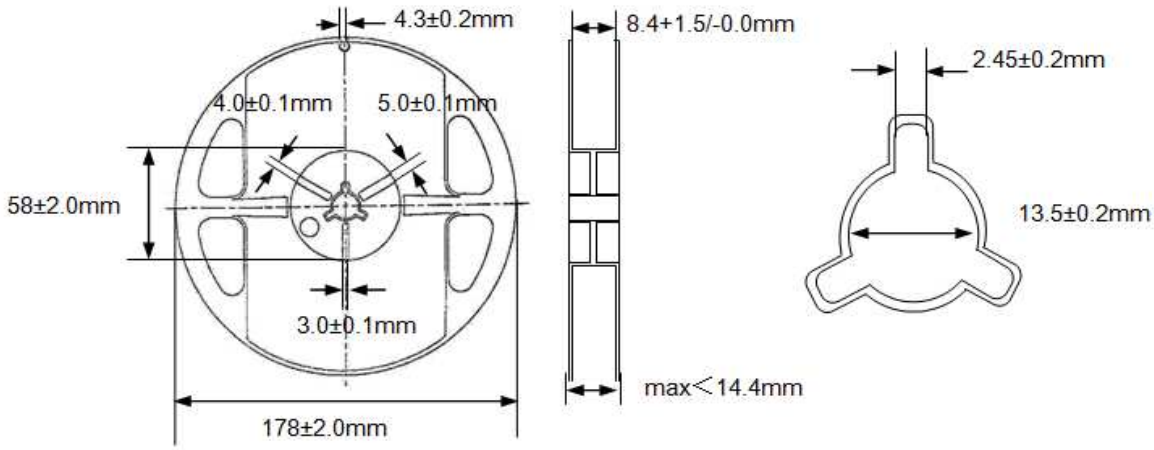
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TAPE & REEL:

T: 2,000pcs / reel



Ao	Bo	W	E	F	Po	P_1	P_2	Do	T	Ko
2.35±0.05	2.35±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	1.40±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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