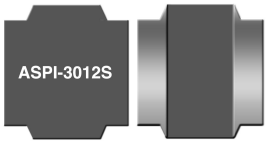
SMD SHIELDED POWER INDUCTOR



3.0 x 3.0 x 1.2mm

ASPI-3012S

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:

- Partable communication equipment
- OA equipment
- LCD, DVD, modem, set-top box
- DC/DC converters

ELECTRICAL SPECIFICATIONS:

Abracon P/N:	ASPI-3012S Series
Operating Temperature :	-40ºC to +125ºC
Storage Temperature :	-10ºC to +40ºC and 70% R.H.

Part Number ASPI-3012S- Inductance Code	Inductance	L Tolerance	DC Resistance (±30%)	Saturation Current	Temperature Rise Current	Min. Self resonant frequency	Inductance Code
Units	µH	—	Ω	A	A	MHz	
Symbol	L	N, M	DCR	Isat	Irms	SRF	
ASPI-3012S-R82	0.82	N	0.030	2.05	2.47	180	R82
ASPI-3012S-1R0	1.0	N	0.040	1.87	2.20	120	1R0
ASPI-3012S-1R2	1.2	N	0.045	2.22	2.01	120	1R2
ASPI-3012S-1R5	1.5	N	0.045	1.62	2.01	110	1R5
ASPI-3012S-1R8	1.8	N	0.063	1.30	1.65	90	1R8
ASPI-3012S-2R2	2.2	N	0.075	1.20	1.55	84	2R2
ASPI-3012S-2R4	2.4	N	0.068	1.15	1.60	100	2R4
ASPI-3012S-2R7	2.7	M,N	0.085	1.14	1.48	65	2R7
ASPI-3012S-3R3	3.3	M,N	0.100	1.05	1.36	64	3R3
ASPI-3012S-3R9	3.9	M,N	0.145	1.00	1.24	61	3R9
ASPI-3012S-4R7	4.7	M,N	0.120	0.90	1.24	61	4R7
ASPI-3012S-6R8	6.8	M,N	0.190	0.75	0.98	61	6R8
ASPI-3012S-100	10	M,N	0.265	0.60	0.83	42	100
ASPI-3012S-120	12	M,N	0.345	0.48	0.73	32	120
ASPI-3012S-150	15	M,N	0.360	0.45	0.71	27	150
ASPI-3012S-180	18	M,N	0.545	0.43	0.58	25	180
ASPI-3012S-220	22	M,N	0.645	0.42	0.53	23	220
ASPI-3012S-270	27	M,N	0.870	0.35	0.47	21	270
ASPI-3012S-330	33	M,N	0.875	0.36	0.46	18	330
ASPI-3012S-360	36	M,N	0.950	0.34	0.44	18	360
ASPI-3012S-390	39	M,N	1.330	0.30	0.37	18	390
ASPI-3012S-470	47	M,N	1.450	0.27	0.35	14	470
ASPI-3012S-680	68	M,N	1.670	0.24	0.33	12	680
ASPI-3012S-820	82	M,N	2.540	0.17	0.27	12	820
ASPI-3012S-101	100	M,N	2.860	0.21	0.25	12	101

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Test Conditions:

a. Ambient Temperature: 20± 15°C
b. Relative Humidity: 65%±20%
c. 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): E3260B meter or equivalent
Isat: Based on inductance change (ΔL/Lo :Δ-30%)
Temperature rise current (Irms): Electric Power, Electric current meter, Thermometer
Irms: Based on temperature rise (ΔT : 40°C TYP.)

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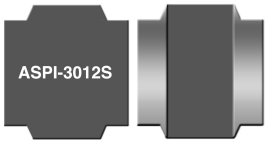
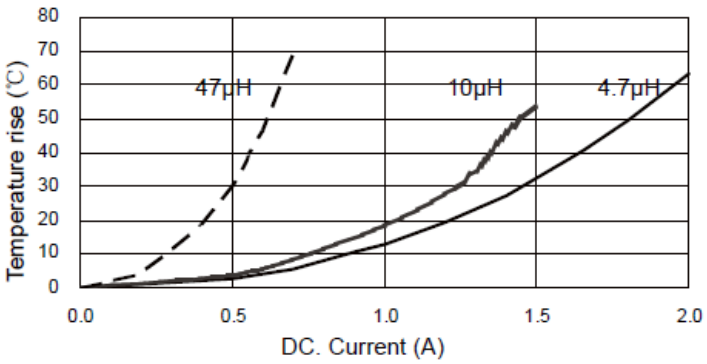


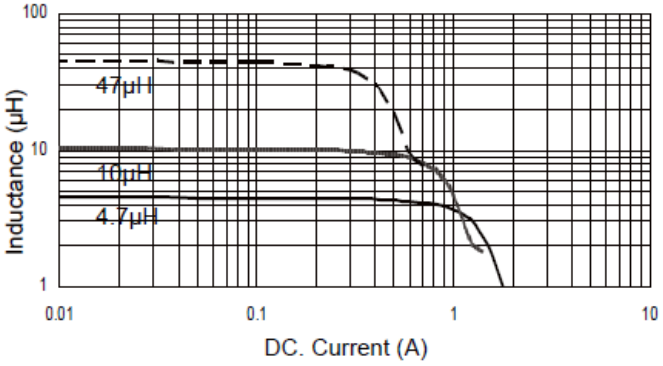
3.0 x 3.0 x 1.2mm

ELECTRICAL SPECIFICATIONS:

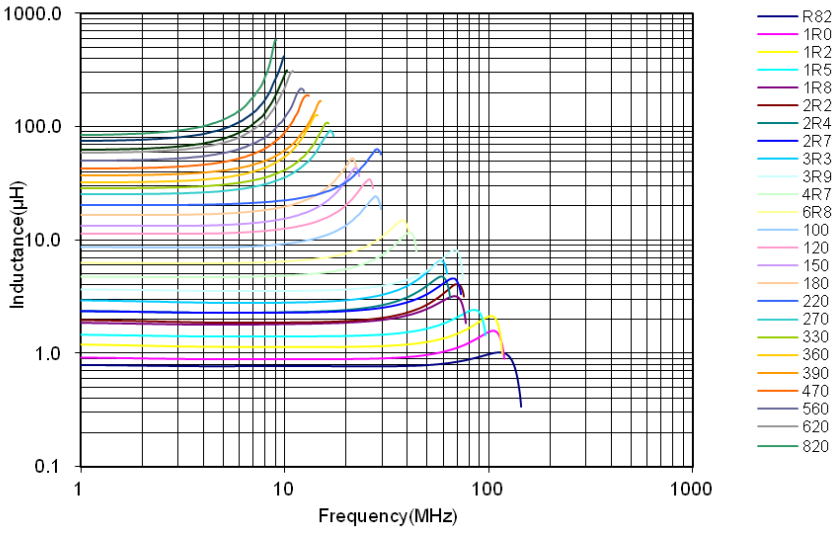
Temperature vs. DC Current Characteristics



Inductance vs. DC Current Characteristics



Inductance VS Frequency



OPTIONS AND PART IDENTIFICATION

ASPI-3012S - ☐ ☐ - ☐

Inductance Code	Tolerance	Packaging
Please refer to the table above	M: ±20% * N: ±30% *	T: Tape and Reel (2kpcs / reel)

*M for 2.7μH~100μH
*N for 0.82μH~100μH

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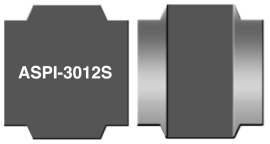

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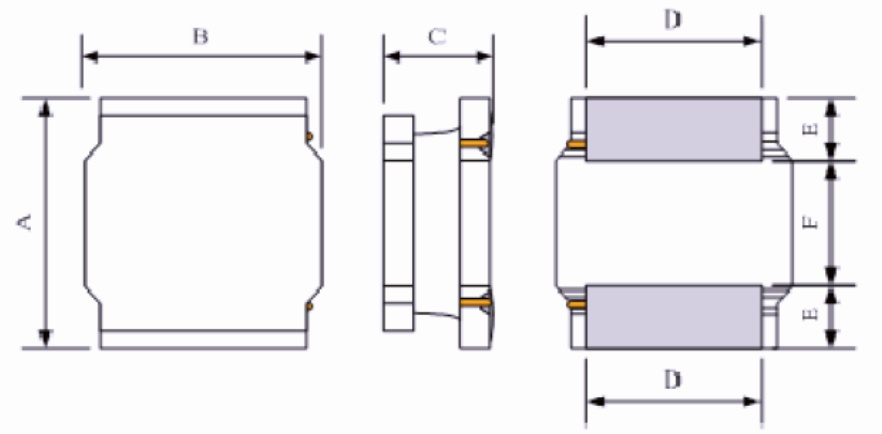
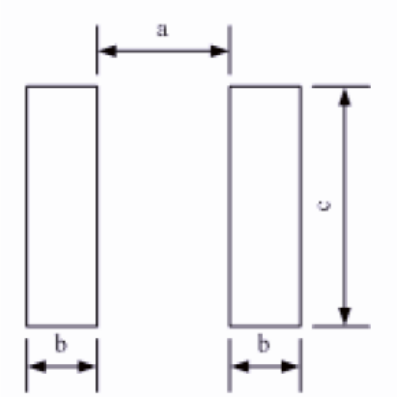
OUTLINE DIMENSIONS:

Recommended Land Pattern

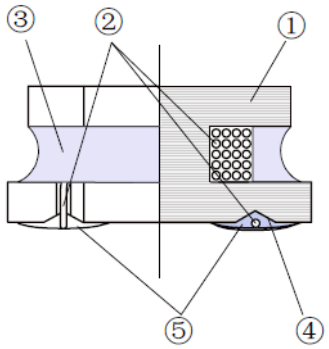




A	B	C Max.	D	E	F	a Typ.	b Typ.	c Typ.
3.0±0.2	3.0±0.2	1.2Max.	2.5±0.2	0.75±0.2	1.5±0.2	1.5Typ.	0.8Typ.	2.7Typ

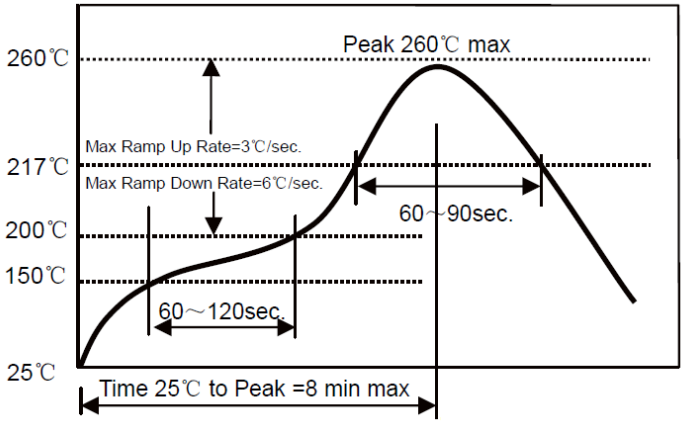
Dimensions: mm

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%/Cu0.5%

REFLOW PROFILE:



- Δ Preheat condition: 150 ~200°C/60~120sec.
- Δ Allowed time above 217C: 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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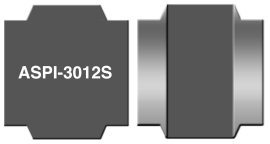

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TAPE & REEL:

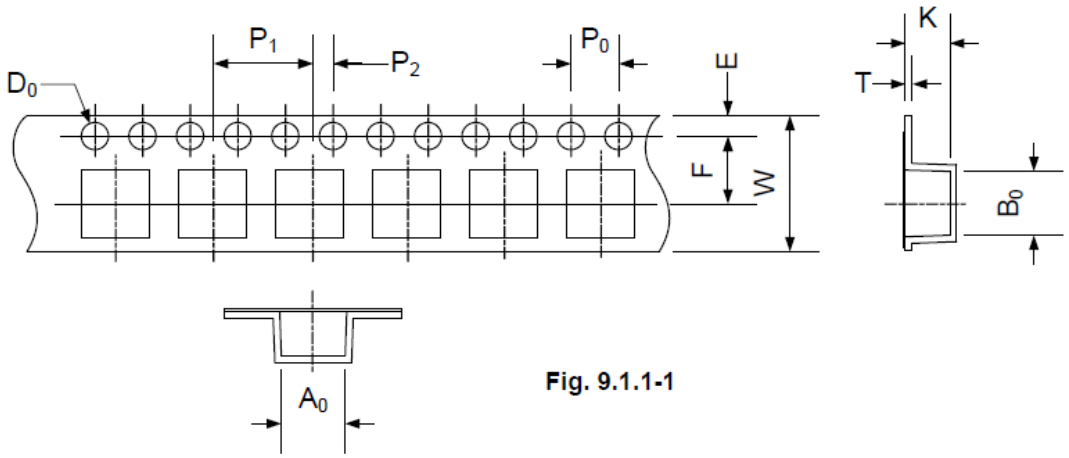
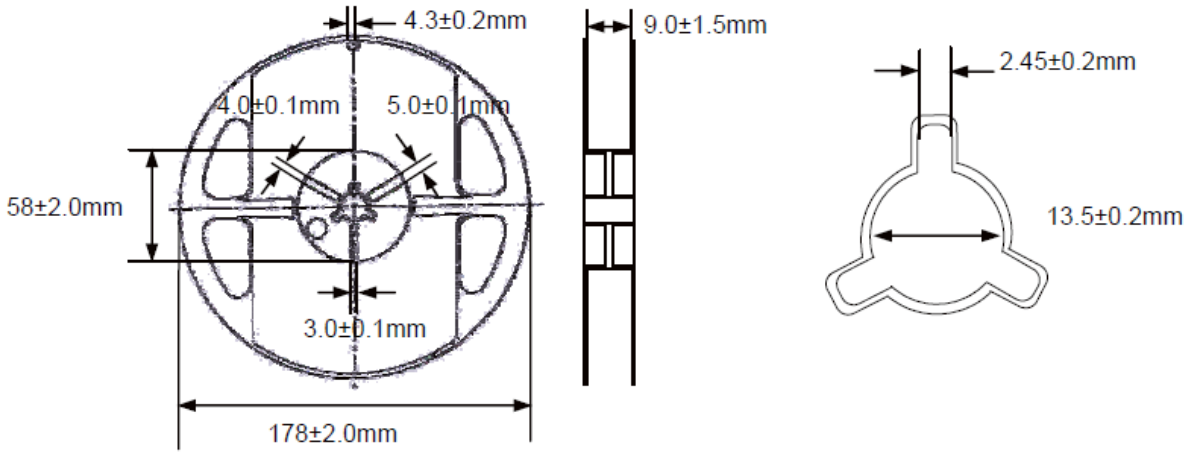


Fig. 9.1.1-1

A0	B0	W	E	F	P0	P1	P2	D0	T	K
3.3±0.1	3.3±0.1	8.0±0.3	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.1	2.0±0.1	1.5+0.1/-0.0	0.25±0.03	1.6±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.

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