Wire Wound Magnetically Shielded SMD Power Inductor



4.0 x 4.0 x 2.0 mm

ASPI-4020S

Pb 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-4020S Series
Operating Temperature :	-40ºC to +125ºC
Storage Temperature :	-10ºC to +40ºC and 70% R.H.

Part Number	Inductance	L Tolerance	DC Resistance (±30%)	Saturation Current	Temperature Rise Current	Self resonant frequency	Inductance Code Marking
Units	µH	—	Ω	A Max	A Max	MHz Min	
Symbol	L	N, M	DCR	Isat	Irms	SRF	
ASPI-4020S-1R0	1.0	N	0.029	4.78	2.15	75	1R0
ASPI-4020S-1R2	1.2	N	0.029	5.10	2.15	72	1R2
ASPI-4020S-1R5	1.5	N	0.035	4.45	1.98	71	1R5
ASPI-4020S-2R2	2.2	N	0.040	3.40	1.85	49	2R2
ASPI-4020S-3R3	3.3	M	0.070	3.20	1.40	44	3R3
ASPI-4020S-3R6	3.6	M	0.055	2.80	1.54	49	3R6
ASPI-4020S-4R7	4.7	M	0.075	2.35	1.34	42	4R7
ASPI-4020S-5R1	5.1	M	0.085	2.30	1.27	42	5R1
ASPI-4020S-5R6	5.6	M	0.090	2.20	1.22	30	5R6
ASPI-4020S-6R2	6.2	M	0.115	2.15	1.08	36	6R2
ASPI-4020S-6R8	6.8	M	0.125	2.20	1.04	33	6R8
ASPI-4020S-7R5	7.5	M	0.115	1.85	1.08	30	7R5
ASPI-4020S-8R2	8.2	M	0.125	1.75	1.04	27	8R2
ASPI-4020S-100	10	M	0.165	1.60	0.90	26	100
ASPI-4020S-120	12	M	0.175	1.50	0.88	26	120
ASPI-4020S-150	15	M	0.230	1.35	0.77	24	150
ASPI-4020S-220	22	M	0.350	1.05	0.62	15	220
ASPI-4020S-270	27	M	0.545	1.02	0.50	14	270
ASPI-4020S-330	33	M	0.550	0.85	0.49	11	330
ASPI-4020S-390	39	M	0.650	0.82	0.46	11	390
ASPI-4020S-430	43	M	0.660	0.77	0.45	10	430
ASPI-4020S-470	47	M	0.710	0.74	0.44	10	470
ASPI-4020S-510	51	M	0.750	0.70	0.42	10	510
ASPI-4020S-560	56	M	0.800	0.66	0.41	10	560
ASPI-4020S-620	62	M	0.900	0.65	0.39	9.6	620
ASPI-4020S-680	68	M	1.060	0.61	0.36	7.7	680
ASPI-4020S-750	75	M	1.160	0.70	0.35	7.7	750
ASPI-4020S-820	82	M	1.170	0.50	0.34	7.2	820
ASPI-4020S-101	100	M	1.550	0.48	0.31	6.3	101

Test Conditions:

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

Inductance (L): WK3260B LCR meter or equivalent, 100kHz, 1Vrms
Direct Current Resistance (DCR): HIOKI 3540 or equivalent
Saturation Current (Isat): WK3260B LCR meter or equivalent
Isat: Based on inductance change (ΔL/Lo :≤-30%)
Temperature rise current (Irms): Electric Power, Electric current meter, Thermometer
Irms: Based on temperature rise (ΔT : 40 ºC TYP.)

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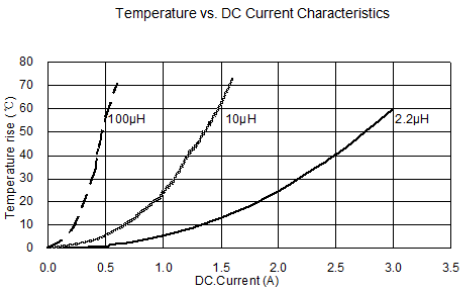


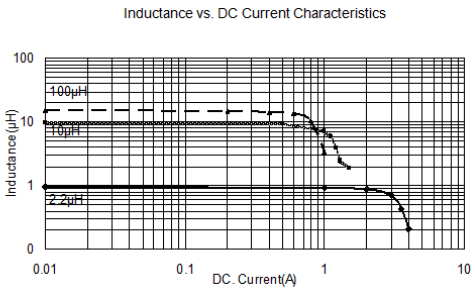
4.0 x 4.0 x 2.0 mm

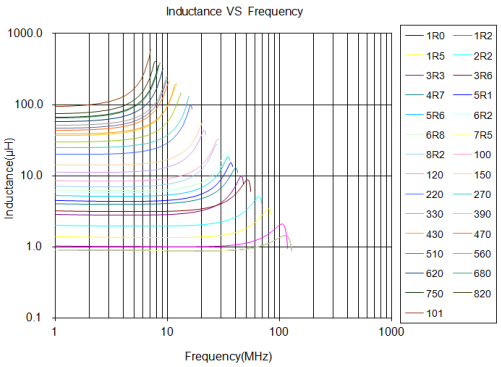
ASPI-4020S

RoHS/RoHS II Compliant

ELECTRICAL CHARACTERISTICS CURVES







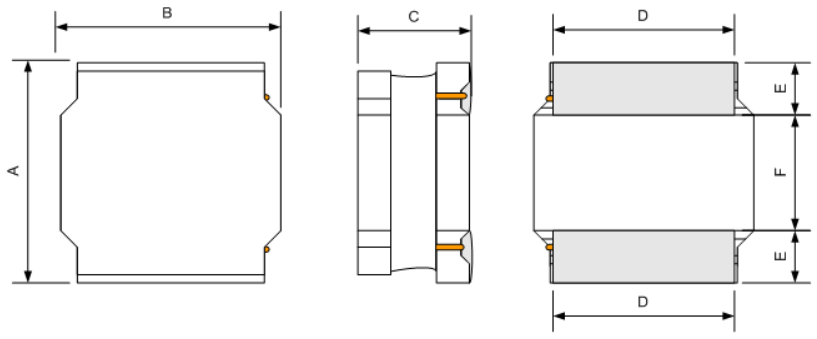
PART IDENTIFICATION:

ASPI-4020S - ☐ ☐ - ☐

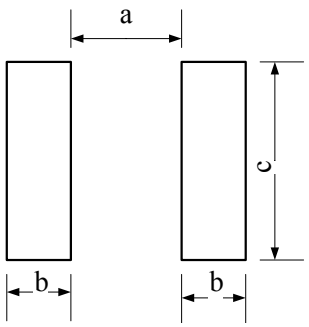
Inductance Code	Tolerance	Packaging
Please refer to the table above	M: ±20% * N: ±30% *	T: Tape and Reel (3kpcs / reel)

*M for 3.3μH~100μH
*N for 1.0μH~2.2μH

OUTLINE DIMENSIONS:



Recommended Land Pattern



A	B	C Max.	D	E	F	a Typ.	b Typ.	c Typ.
4.0±0.2	4.0±0.2	2.0	3.3±0.2	0.95±0.2	2.1±0.2	1.9	1.1	3.7

Dimensions: mm

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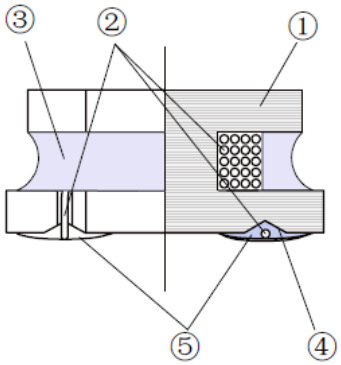


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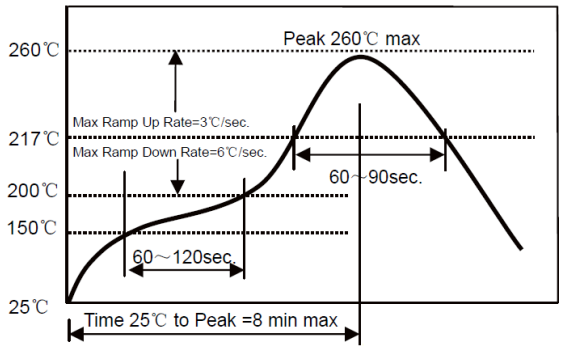
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Materials



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 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

TAPE & REEL:

T: 3,000pcs / reel

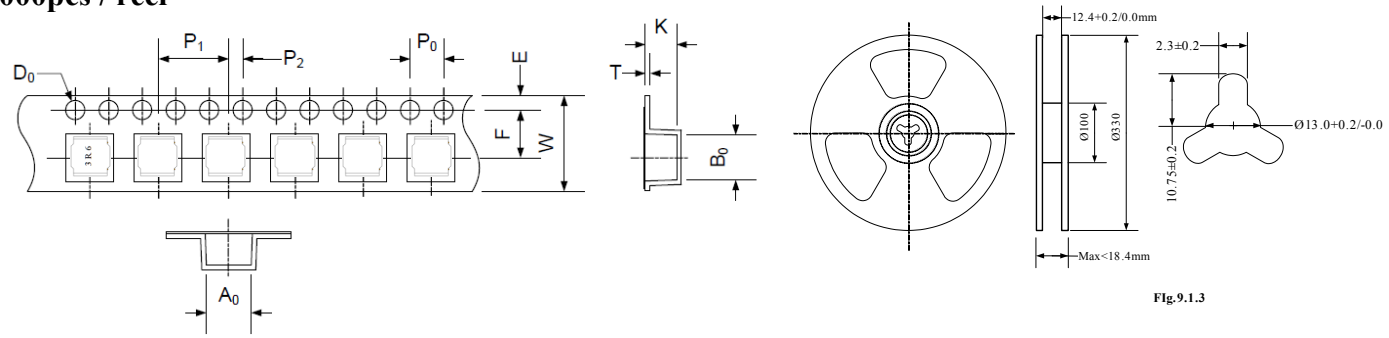


Fig.9.1.3

A0	B0	W	E	F	P0	P1	P2	D0	T	K
4.3±0.1	4.3±0.1	12.0±0.3	1.75±0.1	5.5±0.1	4.0±0.1	8.0±0.1	2.0±0.1	1.5+0.1/-0.0	0.4±0.03	2.4±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 12 months, solderability shall be checked before actual usage.

Dimensions: mm

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