Automotive Grade SMD Power Inductor



ASPIAIG-S8050

Request Samples Check Inventory

8.0 x 8.0 x 5.0 mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- TS-16949 Qualified production
- PPAP Level 3 support
- AEC-Q200 qualified with -40ºC to 125ºC operating temperature range
- High reliability wire-wound construction
- Shielded construction reducing EMI
- Low DCR down to 10mΩ

Applications

- Automotive body electronics and comfort system
- Automotive infotainment and entertainment
- Automotive navigation
- Industrial Internet of Things (IIoT) applications
- Transportation markets
- Lighting/LED ballasts
- Solar power
- DC/DC switch mode power supplies

Electrical Specifications

Part Number	Inductance	Tolerance	Self-resonant Frequency	DC Resistance	Saturation Current	Temperature Rise Current
	0.1MHz/1V		Min	Max	Typ	Typ
Units	µH	%	MHz	Ω	A	A
Symbol	L	M	SRF	DCR	Isat	Irms
ASPIAIG-S8050-1R0	1.0	M	99	0.010	16.00	7.20
ASPIAIG-S8050-1R5	1.5	M	79	0.012	13.00	6.50
ASPIAIG-S8050-2R2	2.2	M	59	0.014	11.00	5.80
ASPIAIG-S8050-3R3	3.3	M	24	0.020	9.00	4.90
ASPIAIG-S8050-4R7	4.7	M	23	0.023	7.50	4.60
ASPIAIG-S8050-6R8	6.8	M	19	0.029	6.10	4.20
ASPIAIG-S8050-8R2	8.2	M	18	0.035	5.60	3.80
ASPIAIG-S8050-100	10	M	14	0.038	5.20	3.60
ASPIAIG-S8050-150	15	M	13	0.061	4.50	2.70
ASPIAIG-S8050-220	22	M	9.0	0.088	3.50	2.20
ASPIAIG-S8050-330	33	M	7.6	0.122	3.00	2.00
ASPIAIG-S8050-470	47	M	6.6	0.173	2.40	1.70
ASPIAIG-S8050-680	68	M	5.4	0.252	2.00	1.45
ASPIAIG-S8050-101	100	M	4.4	0.326	1.60	1.25
ASPIAIG-S8050-151	150	M	3.2	0.480	1.40	1.00
ASPIAIG-S8050-221	220	M	2.9	0.708	1.10	0.75
ASPIAIG-S8050-331	330	M	2.3	1.044	0.90	0.65
ASPIAIG-S8050-471	470	M	1.9	1.540	0.80	0.55

Test Conditions

Isat: DC current at which the inductance drops 30% from its nominal value.

Irms: DC current that causes the temperature rise (ΔT, approximate 40 ˚C) from 25°C ambient.

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Electrical Specifications (Cont'd)

Unless otherwise specified, the standard atmospheric conditions for measurement/test as:

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

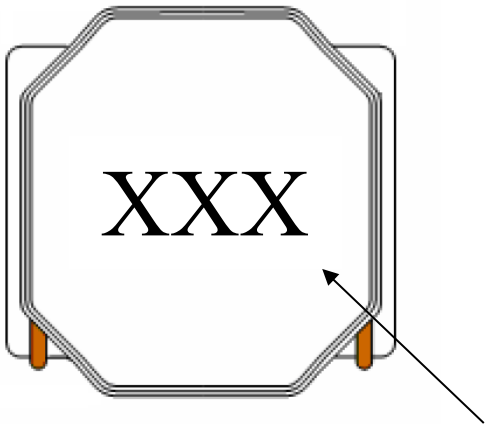
Operating Temperature: -40˚C ~ +125˚C. (including self-temperature rise)
Storage Condition: -40˚C ~ +125˚C. (on board), -10˚C ~ +40˚C (with packaging) and R.H. 70% max.
ASPIAIG-S8050 Series is RoHS Compliant and Pb free.
ASPIAIG-S8050 Series is AEC-Q200 (Grade 1) compliant.

Part Identification

ASPIAIG - S8050 - [ ] [ ] - [ ]

Impedance Code	Tolerance	Packaging
Please refer to Electrical Spec table	M: ±20%	T: Tape and Reel (900pcs / reel)

Marking



Inductance Code

e.g. 4R7

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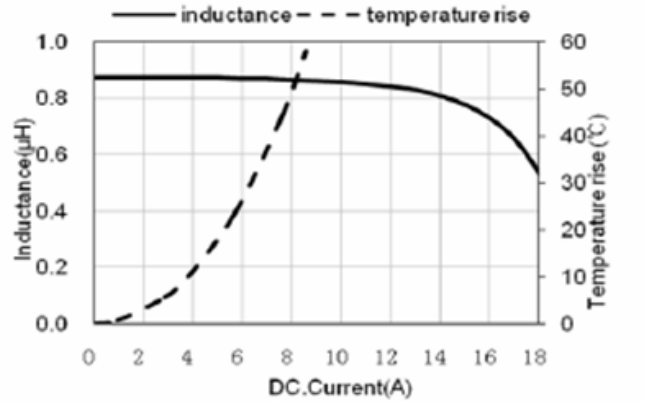
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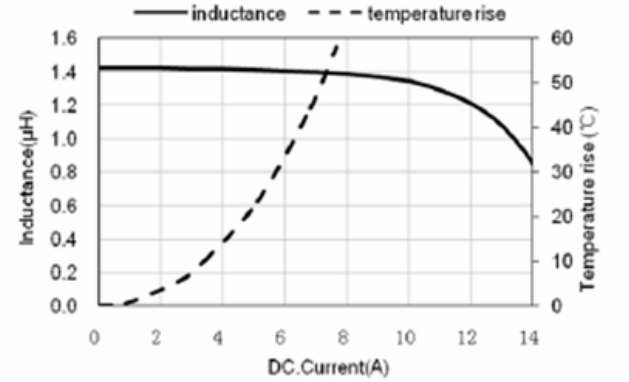
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Performance Graphs

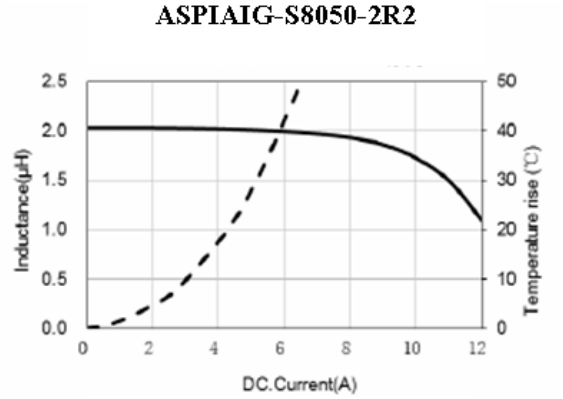
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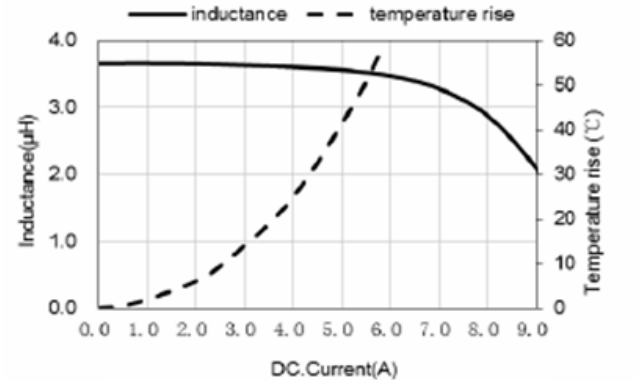
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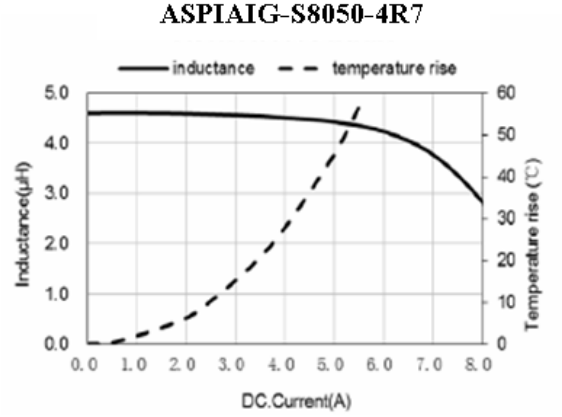
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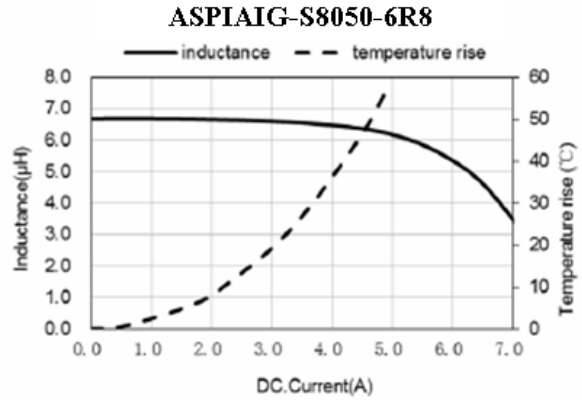
ASPIAIG-S8050-3R3



ASPIAIG-S8050-4R7



ASPIAIG-S8050-6R8



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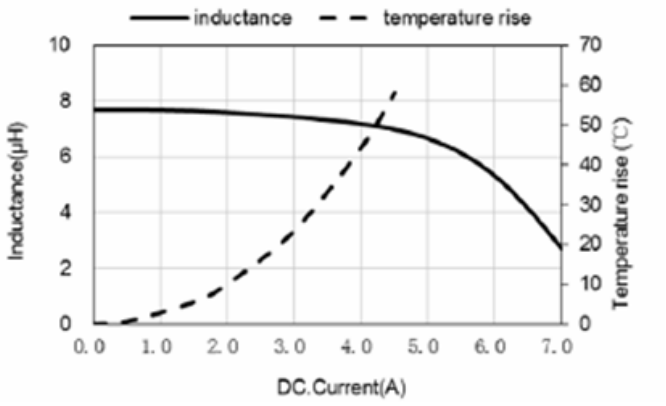
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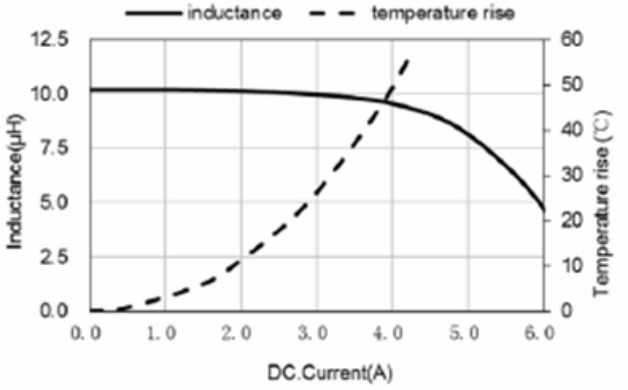
Check Inventory

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MSL Level = 1

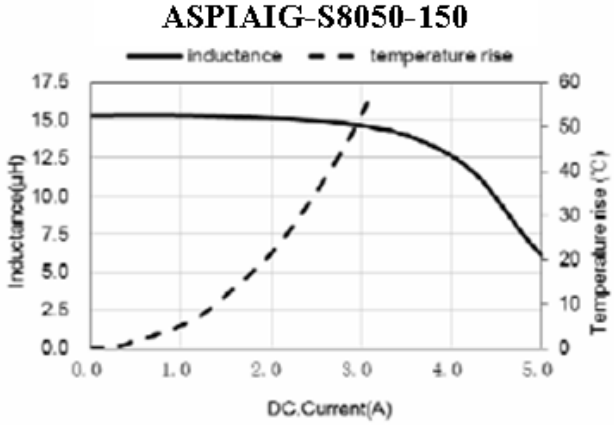
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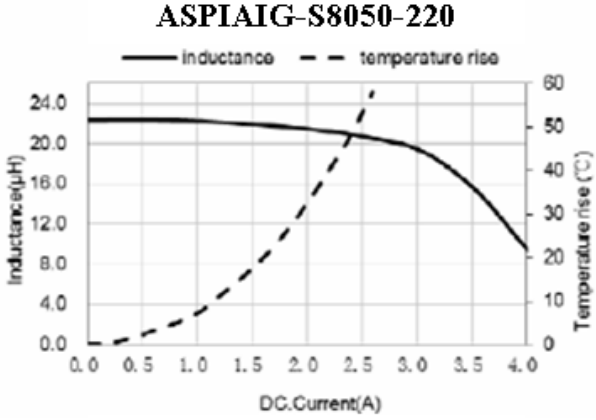
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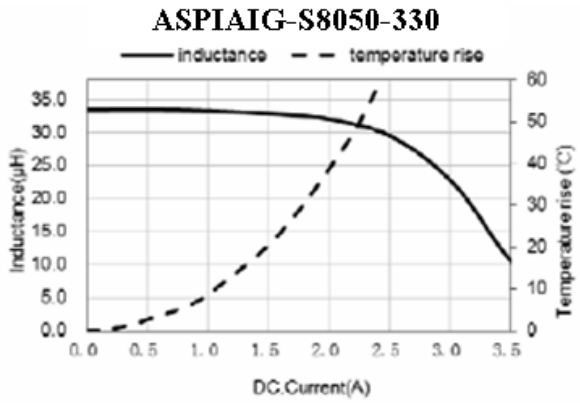
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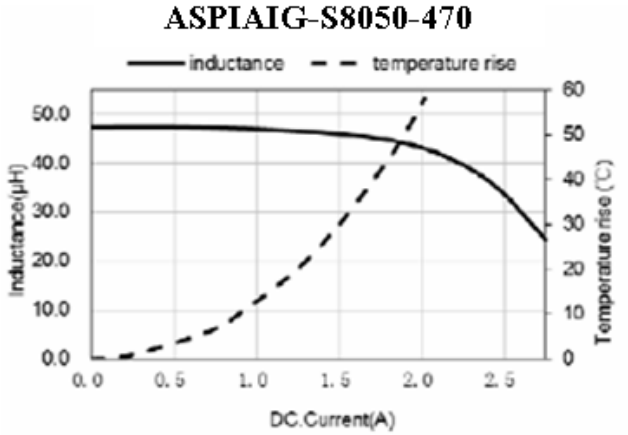
ASPIAIG-S8050-220



ASPIAIG-S8050-330



ASPIAIG-S8050-470



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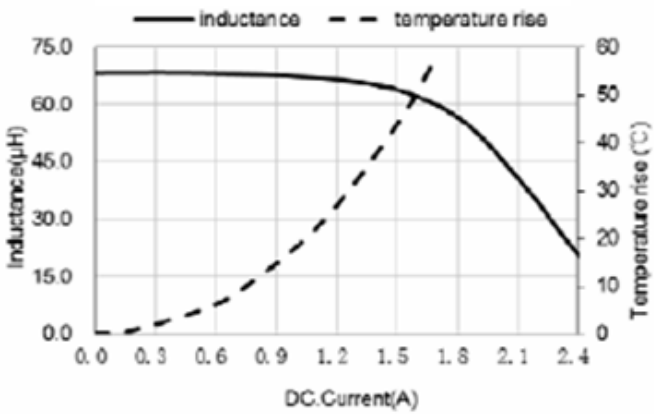


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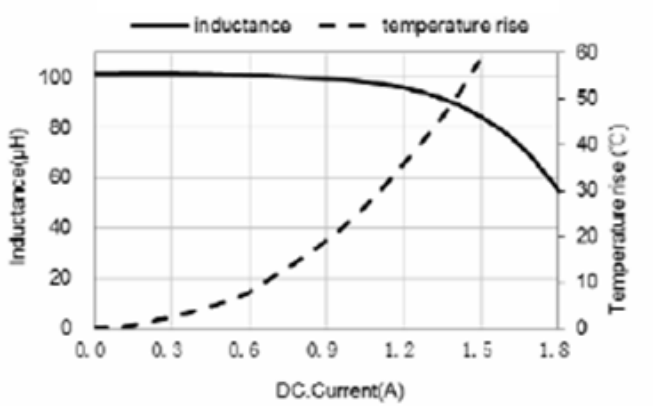
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MSL Level = 1

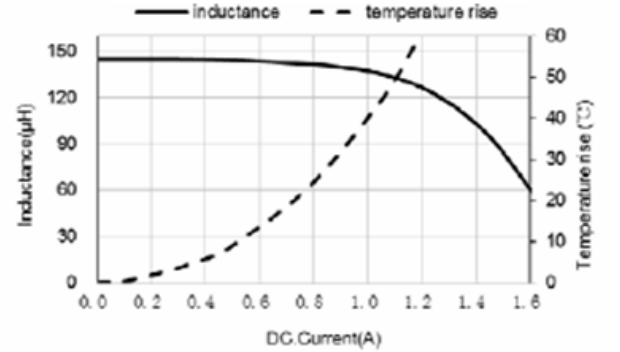
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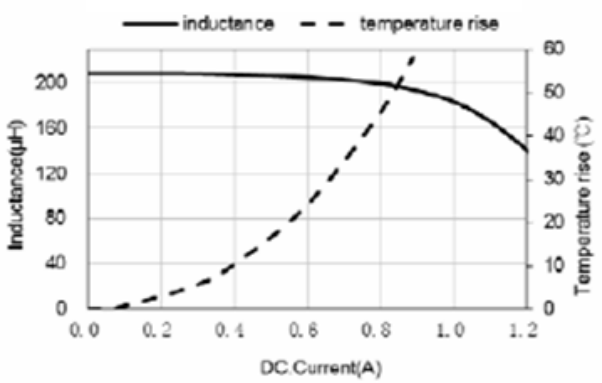
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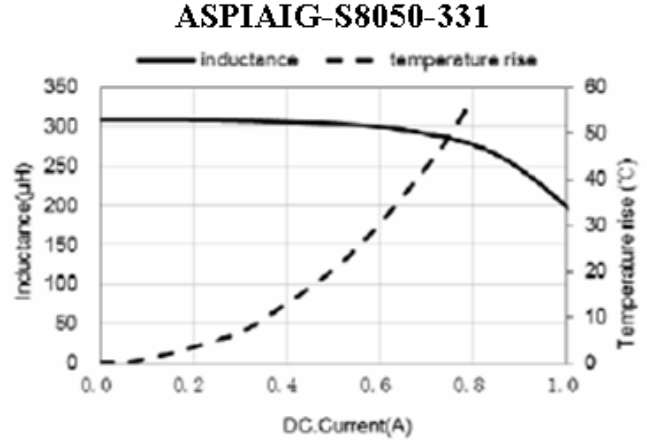
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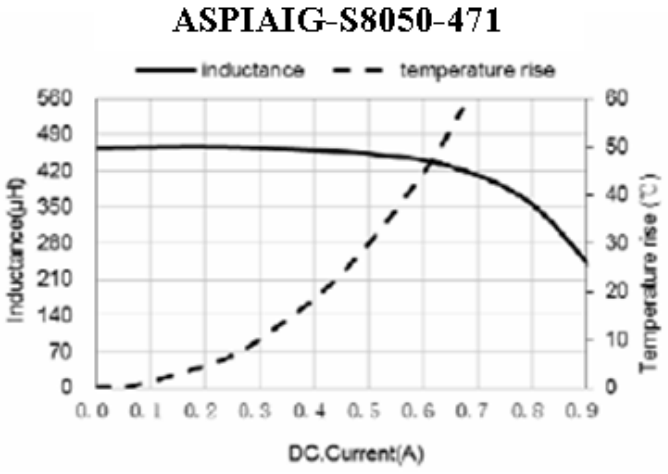
ASPIAIG-S8050-221



ASPIAIG-S8050-331



ASPIAIG-S8050-471



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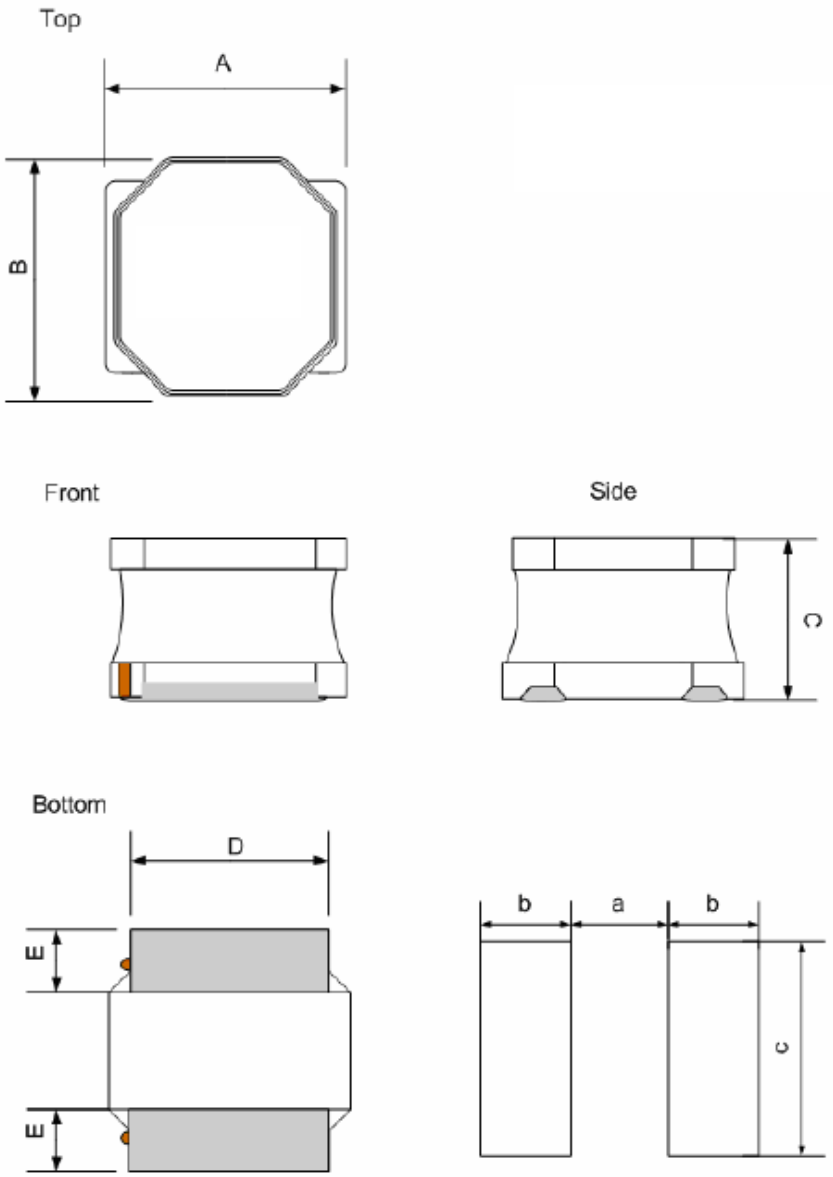


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MSL Level = 1

Mechanical Specifications



Series	A	B	C	D	E	a	b	c
ASPIAIG-S8050	8.0 ± 0.3	8.0 ± 0.3	5.0 ± 0.2	6.3 ± 0.3	2.0 ± 0.2	3.8 Typ.	2.2 Typ.	7.5 Typ.

Dimension: mm

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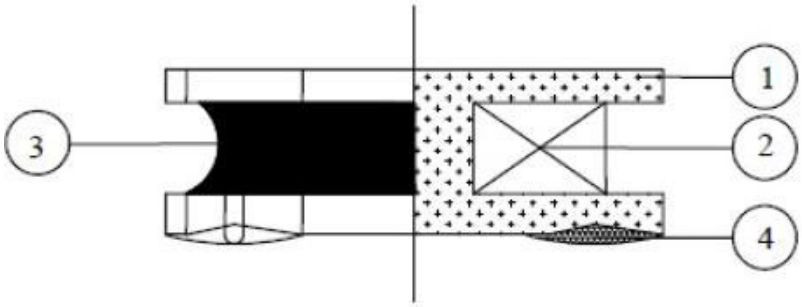


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Materials



	Components	Material
1	Ferrite Core	Ni-Zn Ferrite
2	Wire	Polyurethane system enameled copper wire: P180G1
3	Magnetic Glue	Epoxy resin and magnetic powder
4	Solder	Sn99.3-Cu0.7

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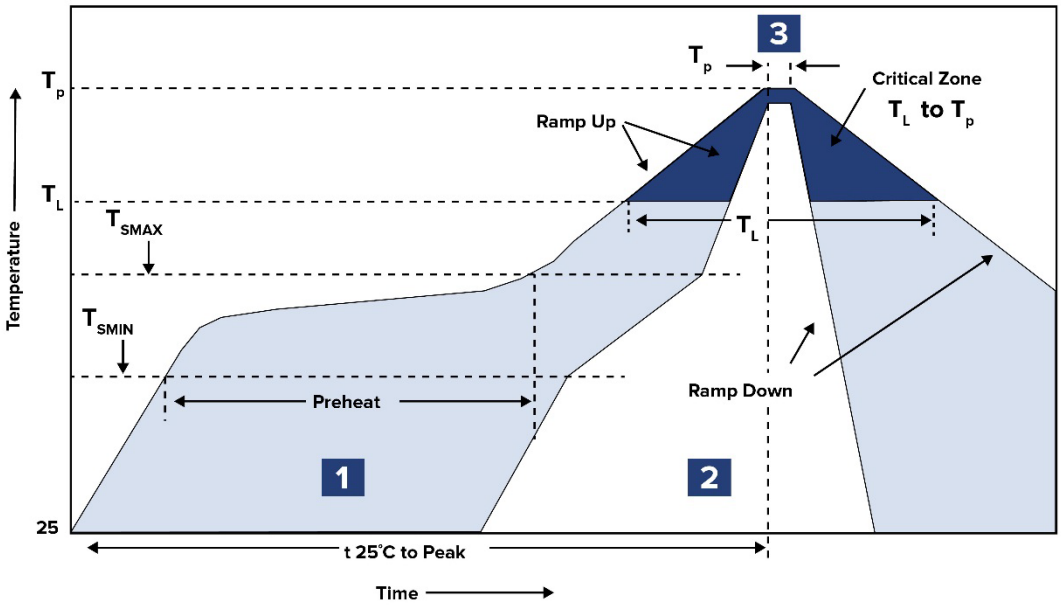


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Reflow Profile



Zone	Description	Temperature	Times
1	Preheat	T_{SMIN} ~ T_{SMAX} 150°C ~ 180°C	60 ~ 120 sec.
2	Reflow	T_L 230°C	30 ~ 90 sec.
3	Peak heat	T_P 260°C	10 sec. MAX

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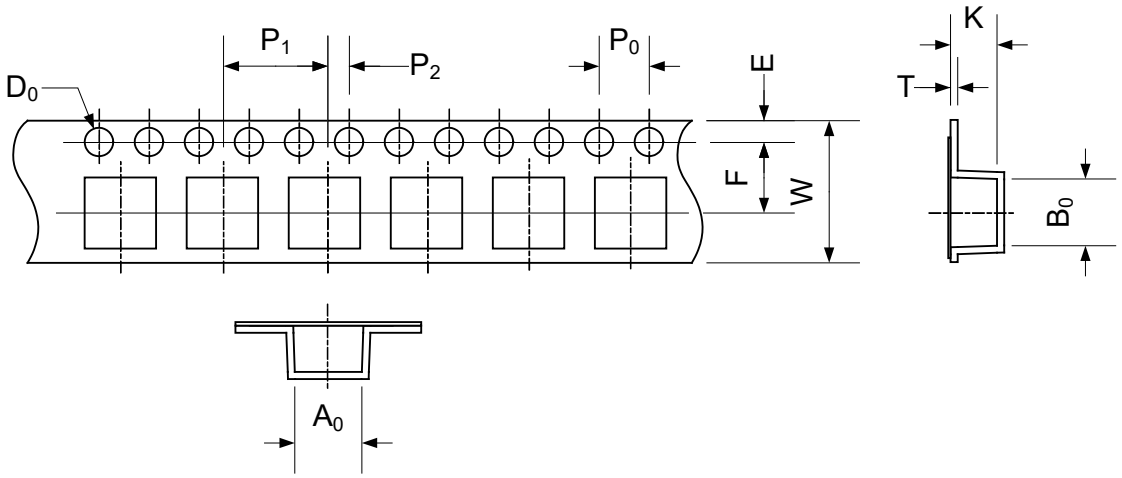
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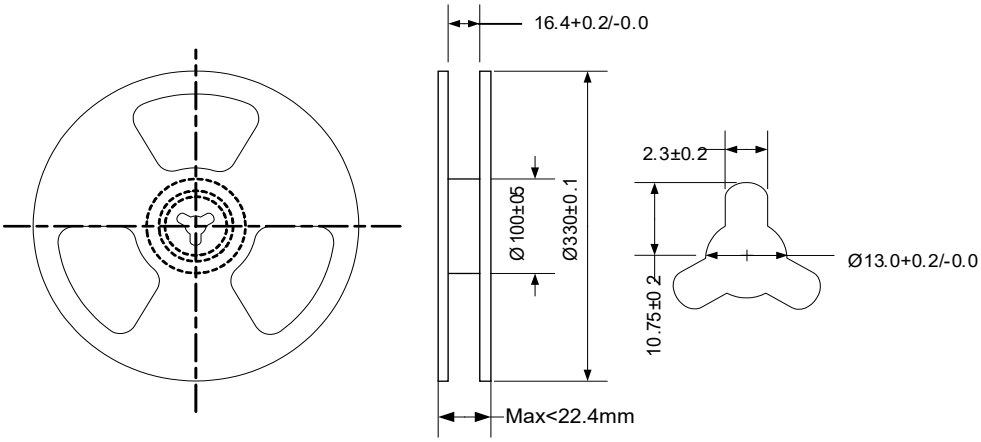
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Packaging

Tape & Reel: 900 pcs/reel



W	E	F	P_0	P_1	P_2	D_0	A_0	B_0	T	K_0
16.0±0.3	1.75±0.1	7.5±0.1	4.0±0.1	12.0±0.1	2.0±0.1	1.5+0.1/-0.0	8.3±0.1	8.3±0.1	0.50±0.05	5.2±0.1



Dimensions: mm

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