

# Molded SMD Power Inductor



## ASPIAIG-F4020 Series

Request Samples



Check Inventory



4.4 x 4.4 x 1.9 mm

RoHS/RoHS II Compliant

MSL Level = 1

### Features

- PPAP ready and supported
- TS16949 certified production lines
- AEC-Q200 qualified
- Excellent current capacity – up to 33A
- Exceptionally low DCR – only 2.4mΩ
- Soft saturation
- Low profile for compact designs
- Shielded constructions for low EMI

### Applications

- Automotive grade 1 and electric vehicles
- ADAS and body electronics
- Infotainment systems
- Lighting
- Motor control
- Solar inverters and solar power
- DC/DC converters in distributed power systems
- Battery powered device

### Electrical Specifications

Part Number	Inductance	Tolerance	DC Resistance	Saturation Current	Temperature Rise Current
	0.1MHz/0.1V		Max	Max	Max
Units	μH	%	mΩ	A	A
Symbol	L	M	DCR	Isat	Irms
ASPIAIG-F4020-R10	0.10	20%	2.42	33.0	18.0
ASPIAIG-F4020-R22	0.22	20%	4.60	18.8	16.8
ASPIAIG-F4020-R36	0.36	20%	6.30	15.0	14.5
ASPIAIG-F4020-R40	0.40	20%	7.73	13.5	14.0
ASPIAIG-F4020-R56	0.56	20%	9.30	12.6	12.0
ASPIAIG-F4020-R60	0.60	20%	9.52	12.3	11.7
ASPIAIG-F4020-R72	0.72	20%	11.60	10.6	10.5
ASPIAIG-F4020-1R0	1.00	20%	14.60	8.8	9.6
ASPIAIG-F4020-1R2	1.20	20%	17.90	7.8	9.0
ASPIAIG-F4020-1R5	1.50	20%	23.50	7.4	7.6
ASPIAIG-F4020-1R8	1.80	20%	28.00	7.0	7.0
ASPIAIG-F4020-2R2	2.20	20%	38.70	6.0	5.6

### Test Conditions

**Isat:** Current at which the inductance drops 30% from its initial value

**Irms:** Current at which the temperature rises ( $\Delta T$ , approximate 40 °C) from 20°C ambient

**Operating Temperature:** -40°C ~ +125°C (including self-temperature rise)

**Storage Condition:** -10°C ~ +40°C and R.H. 60% max

ASPIAIG-F4020 Series is **RoHS Compliant and Pb free**

ASPIAIG-F4020 Series is **AEC-Q200 Grade 1 qualified (-40°C ~ +125°C ambient)**

**Operating Voltage:** 15V (1.5μH and above), 40V (1.2μH and below)

MSL level: 1



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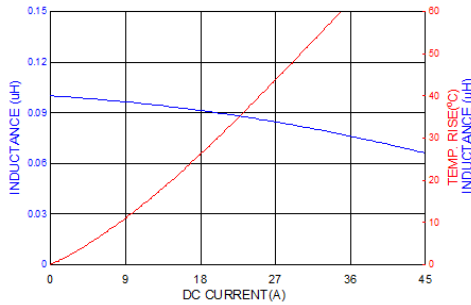


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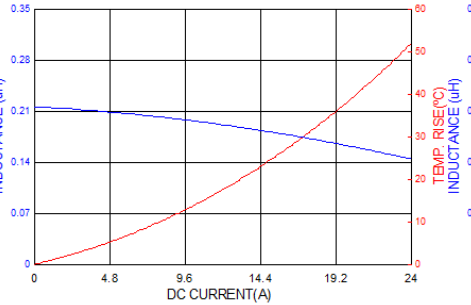


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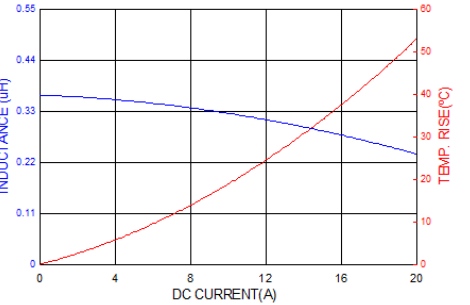
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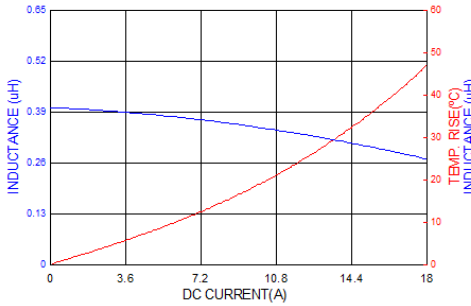
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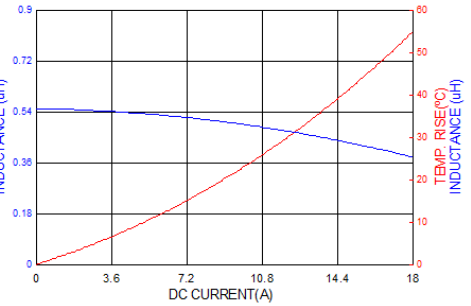
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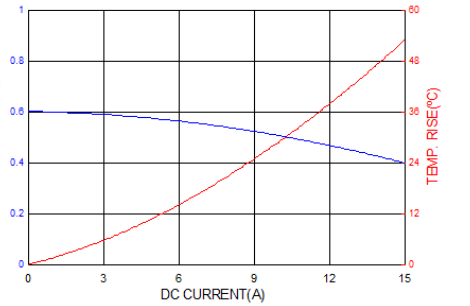
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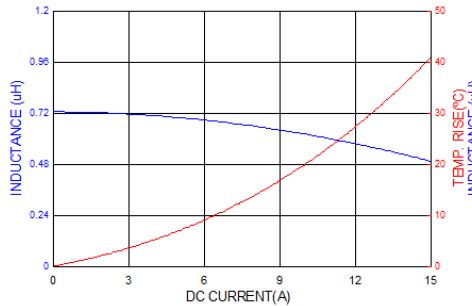
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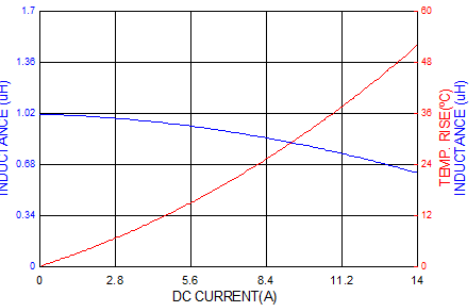
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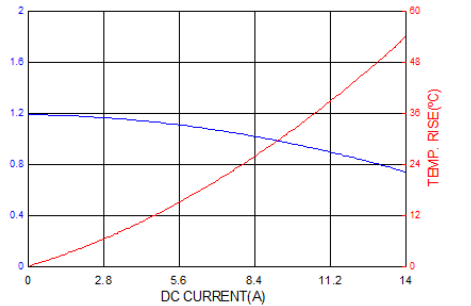
**ASPIAIG-F4020-R72**



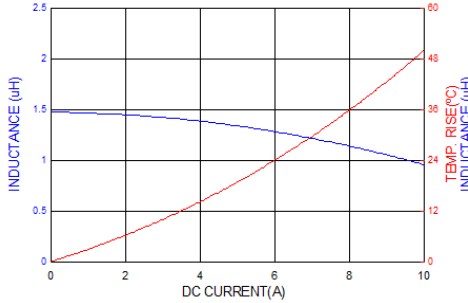
**ASPIAIG-F4020-1R0**



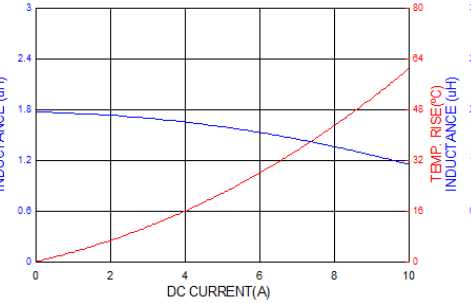
**ASPIAIG-F4020-1R2**



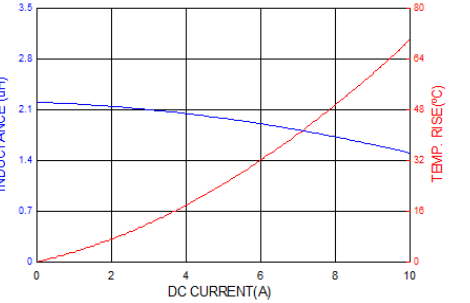
**ASPIAIG-F4020-1R5**



**ASPIAIG-F4020-1R8**



**ASPIAIG-F4020-2R2**



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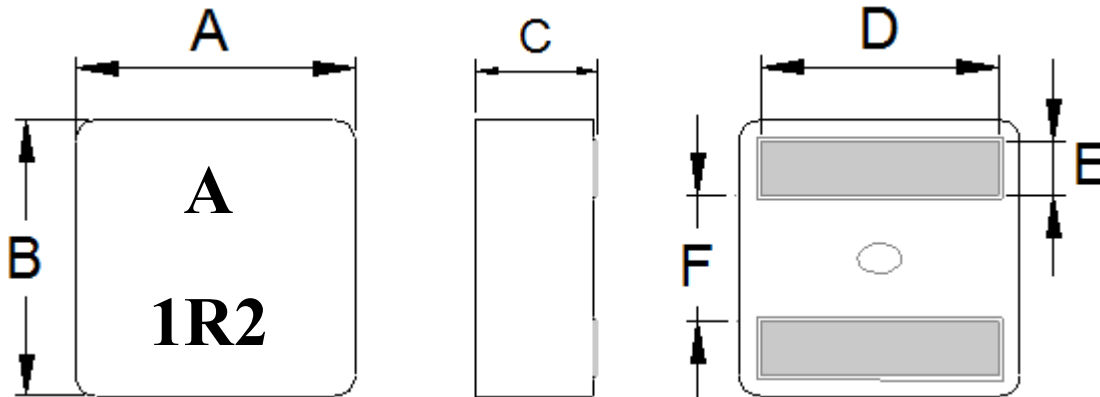


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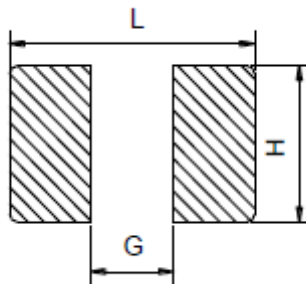
4.4 x 4.4 x 1.9 mm  
 RoHS/RoHS II Compliant  
 MSL Level = 1

## Mechanical Specifications



Series	A	B	C	D	E	F
ASPIAIG-F4020	4.4 ± 0.2	4.4 ± 0.2	1.9 ± 0.2	3.4 ± 0.3	0.88 ± 0.2	1.6 ± 0.25

## Recommended Land Pattern



L Typ.	G Typ.	H Typ.
3.4	1.4	3.8

Dimension: mm

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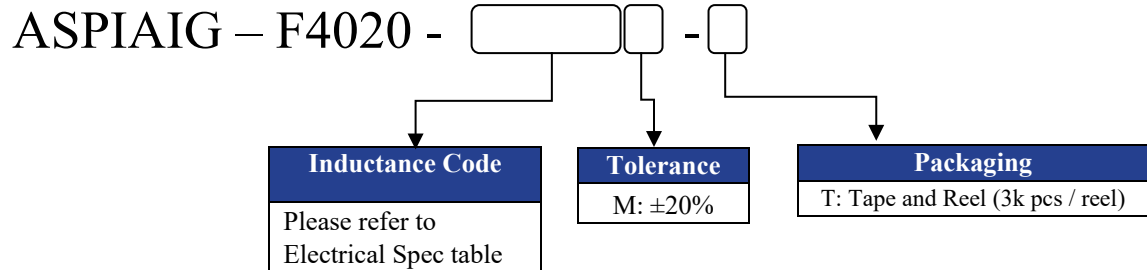


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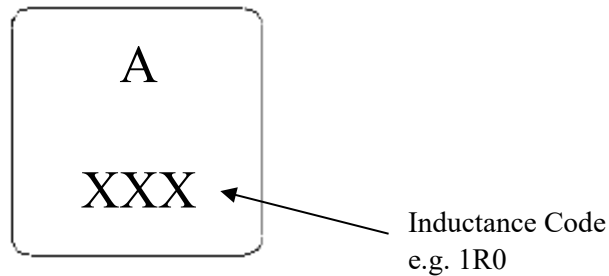


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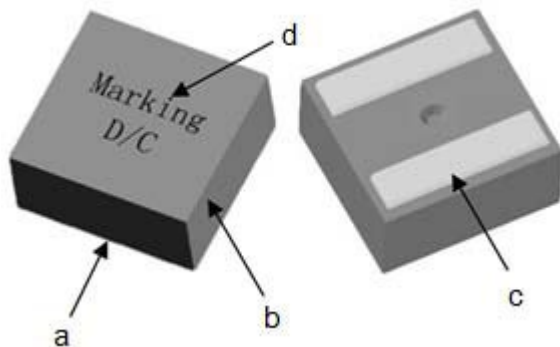
## Part Identification



## Marking



## Materials



	Components	Material
a	Core	Alloy powder
b	Wire	220 deg. C Flat Wire
c	Solder	100% Pb free solder
d	Ink	Halogen-free ketone

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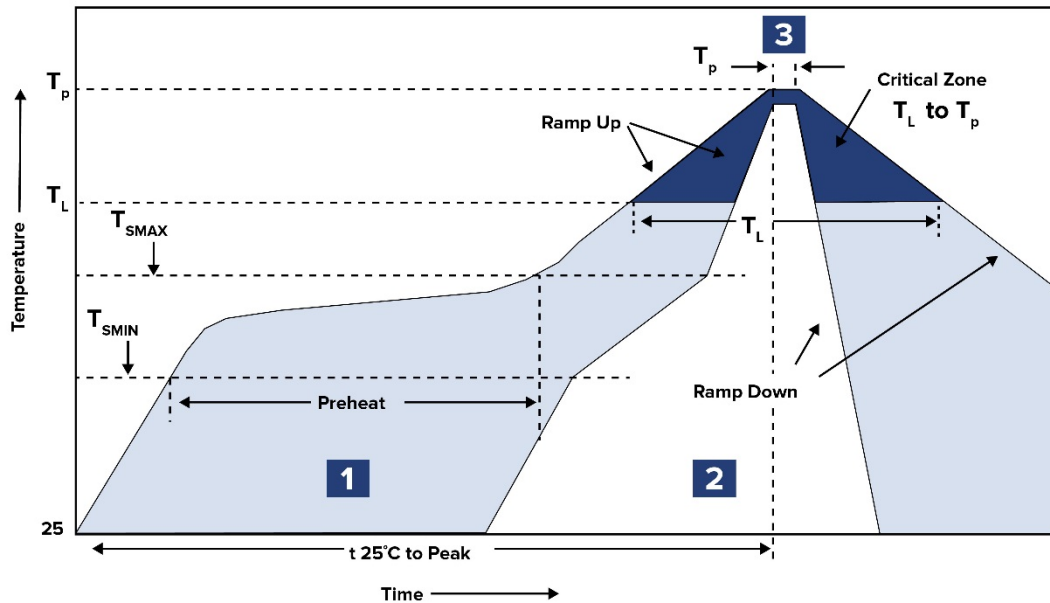


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RoHS/RoHS II Compliant  
MSL Level = 1

## Reflow Profile



Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 200°C	60 ~ 180 sec.
2	Reflow	$T_L$ 217°C	60 ~ 150 sec.
3	Peak heat	$T_P$ 260°C	10 sec. MAX

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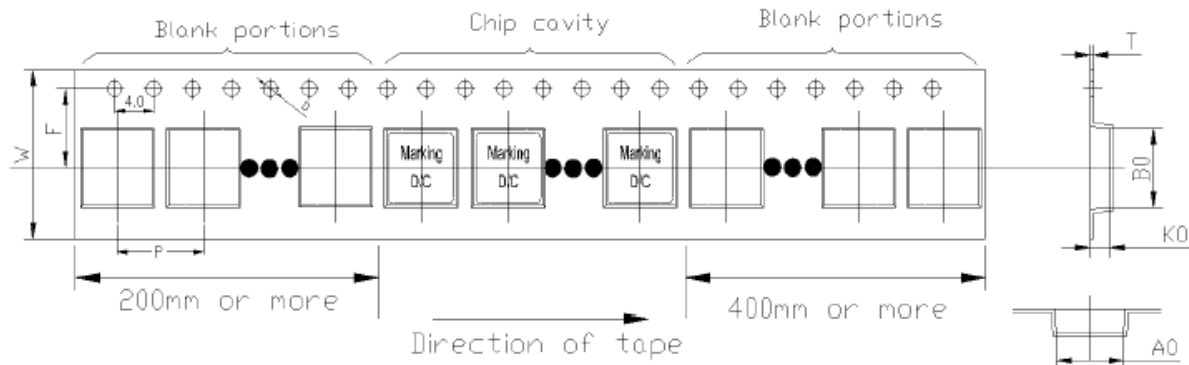
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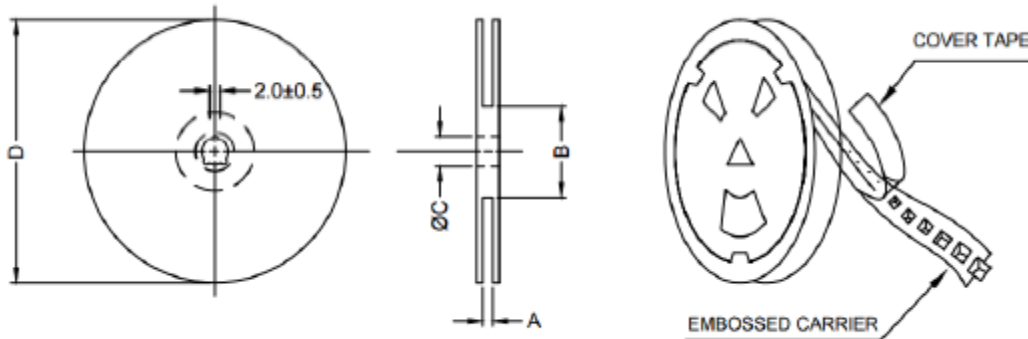
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**RoHS/RoHS II Compliant**  
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### Packaging (Tape & Reel)

ASPIAIG-F4020: 3000pcs / reel



Series	W	F	P	D	A <sub>0</sub>	B <sub>0</sub>	T	K <sub>0</sub>
ASPIAIG-F4020	12.0 ± 0.3	5.5 ± 0.1	8.0 ± 0.1	1.5 ± 0.1	4.4 ± 0.1	4.4 ± 0.1	0.35 ± 0.1	2.3 ± 0.1



A	B	C	D
12.4+2/-0	100 ± 2	13.0+0.5/-0.2	330

Dimension: mm

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