

# Molded SMD Power Inductor



## ASPIAIG-F1040 Series

Request Samples



Check Inventory



11.0 x 10.0 x 3.8 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 75A
- Exceptionally low DCR – only 0.6mΩ
- 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	Type
	0.1MHz/1.0V		Max	Typ	Typ	
Units	μH	%	mΩ	A	A	
Symbol	L	M, N	DCR	Isat	Irms	
ASPIAIG-F1040-R15	0.15	30%	0.60	75	43	Non-Lead Frame
ASPIAIG-F1040-R20	0.20	20%	0.95	70	35	Non-Lead Frame
ASPIAIG-F1040-R22	0.22	20%	1.0	60	35	Non-Lead Frame
ASPIAIG-F1040-R24	0.24	20%	1.0	60	34	Non-Lead Frame
ASPIAIG-F1040-R27	0.27	20%	1.0	60	33	Non-Lead Frame
ASPIAIG-F1040-R30	0.30	20%	1.1	60	32	Non-Lead Frame
ASPIAIG-F1040-R33	0.33	20%	1.2	60	31	Non-Lead Frame
ASPIAIG-F1040-R36	0.36	20%	1.2	60	31	Non-Lead Frame
ASPIAIG-F1040-R39	0.39	20%	1.3	60	30	Non-Lead Frame
ASPIAIG-F1040-R45	0.45	20%	1.5	45	29	Non-Lead Frame
ASPIAIG-F1040-R47	0.47	20%	1.5	43	28	Non-Lead Frame
ASPIAIG-F1040-R56	0.56	20%	1.8	40	25	Non-Lead Frame
ASPIAIG-F1040-R68	0.68	20%	2.7	39	22	Non-Lead Frame
ASPIAIG-F1040-R75	0.75	20%	2.7	39	22	Non-Lead Frame
ASPIAIG-F1040-R88	0.88	20%	2.9	38	20	Non-Lead Frame
ASPIAIG-F1040-R90	0.90	20%	3.0	38	20	Non-Lead Frame
ASPIAIG-F1040-1R0	1.00	20%	3.3	36	18	Non-Lead Frame
ASPIAIG-F1040-1R2	1.20	20%	3.8	33	17	Non-Lead Frame
ASPIAIG-F1040-1R5	1.50	20%	4.6	33	16	Non-Lead Frame
ASPIAIG-F1040-2R2	2.20	20%	7.0	27	12	Lead Frame
ASPIAIG-F1040-2R5	2.50	20%	8.7	23	11.5	Lead Frame
ASPIAIG-F1040-3R0	3.00	20%	11.5	21	11.5	Lead Frame
ASPIAIG-F1040-3R3	3.30	20%	11.8	20	11	Lead Frame
ASPIAIG-F1040-3R9	3.90	20%	14.5	19	10.5	Lead Frame
ASPIAIG-F1040-4R0	4.00	20%	15.0	18	10.2	Lead Frame
ASPIAIG-F1040-4R7	4.70	20%	15.5	17	10	Lead Frame
ASPIAIG-F1040-5R6	5.60	20%	19.3	14	9	Lead Frame



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Part Number	Inductance	Tolerance	DC Resistance	Saturation Current	Temperature Rise Current	Type
	0.1MHz/1.0V		Max	Typ	Typ	
Units	$\mu\text{H}$	%	$\text{m}\Omega$	A	A	
Symbol	L	M, N	DCR	Isat	Irms	
ASPIAIG-F1040-6R5	6.50	20%	22.3	13.6	8.6	Lead Frame
ASPIAIG-F1040-6R8	6.80	20%	23.3	13.5	8.5	Lead Frame
ASPIAIG-F1040-7R3	7.30	20%	21.8	13	8.3	Lead Frame
ASPIAIG-F1040-8R2	8.20	20%	22.5	12.5	8	Lead Frame
ASPIAIG-F1040-100	10.0	20%	30	12	7.5	Lead Frame
ASPIAIG-F1040-150	15.0	20%	45	10	6.25	Lead Frame
ASPIAIG-F1040-180	18.0	20%	62	9	5.5	Lead Frame
ASPIAIG-F1040-220	22.0	20%	74	7	5	Lead Frame
ASPIAIG-F1040-270	27.0	20%	100	6	4	Lead Frame
ASPIAIG-F1040-330	33.0	20%	112	5	3.5	Lead Frame
ASPIAIG-F1040-470	47.0	20%	167	4.5	3	Lead Frame
ASPIAIG-F1040-680	68.0	20%	240	3	2	Lead Frame
ASPIAIG-F1040-820	82.0	20%	320	2.5	1.5	Lead Frame

### 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

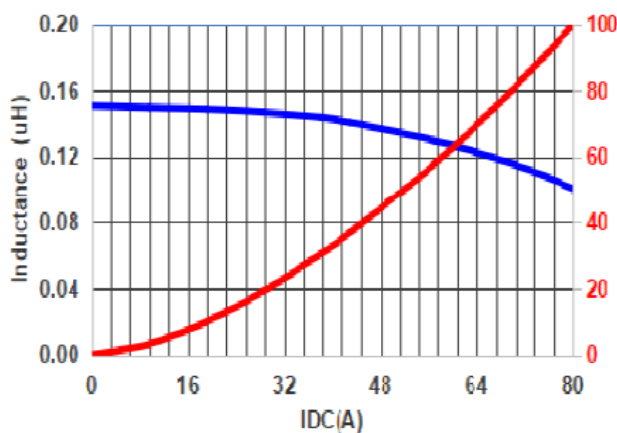
ASPIAIG-F1040 Series is **RoHS Compliant and Pb free**

ASPIAIG-F1040 Series is AEC-Q200 Grade 1 qualified (-40°C ~ +125°C ambient)

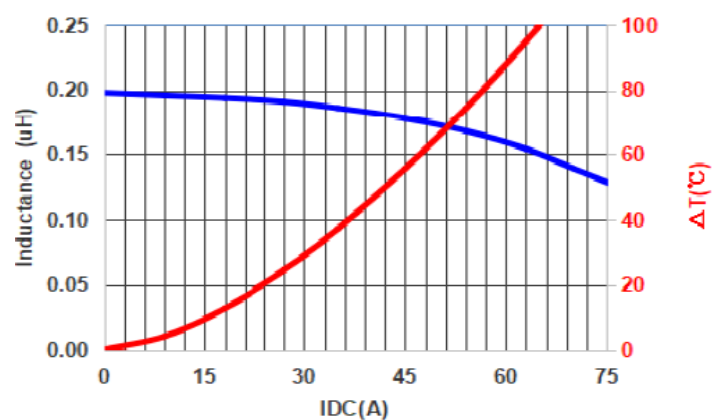
**Operating Voltage:** 40V

**MSL level:** 1

ASPIAIG-F1040-R15



ASPIAIG-F1040-R20



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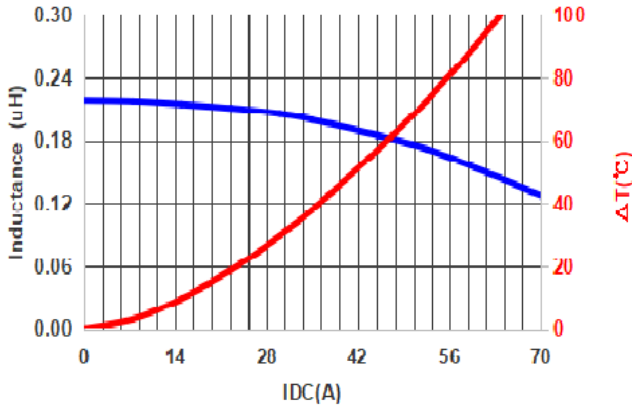


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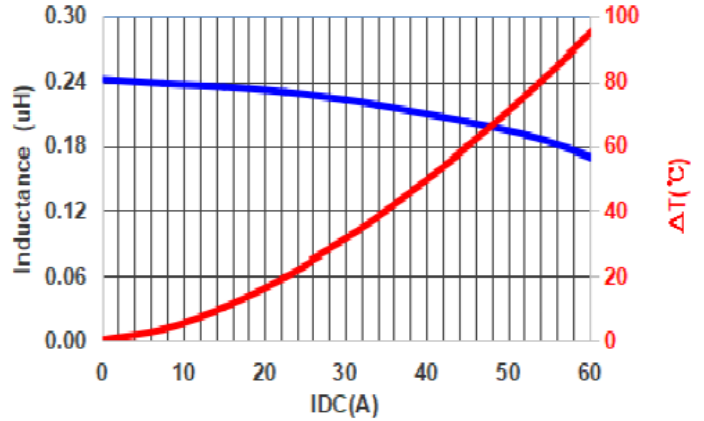


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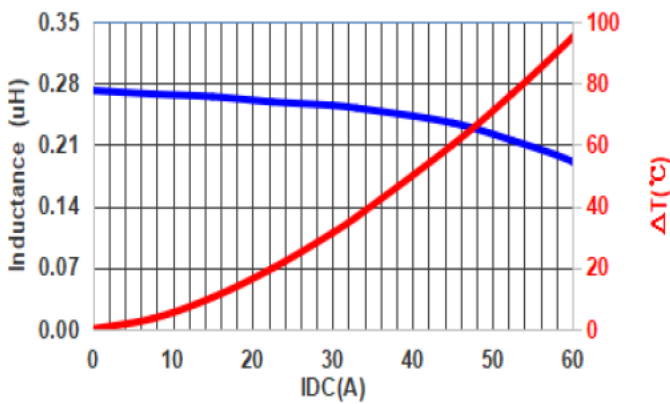
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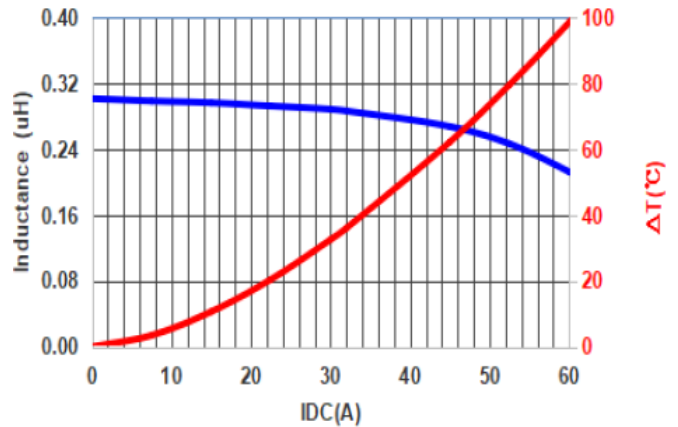
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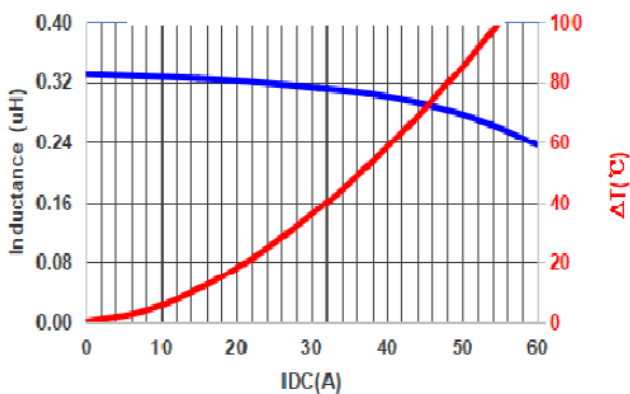
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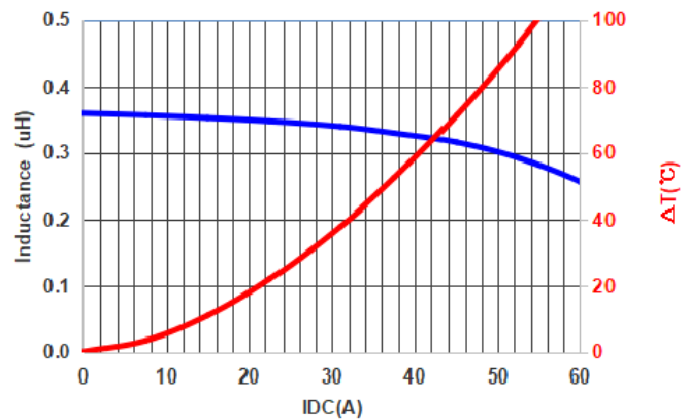
ASPIAIG-F1040-R30



ASPIAIG-F1040-R33



ASPIAIG-F1040-R36



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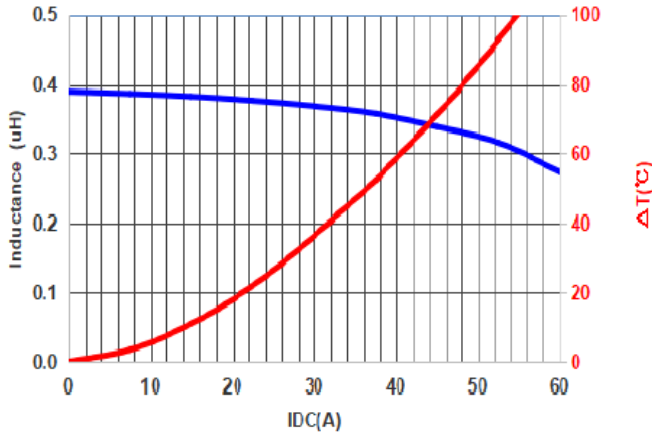


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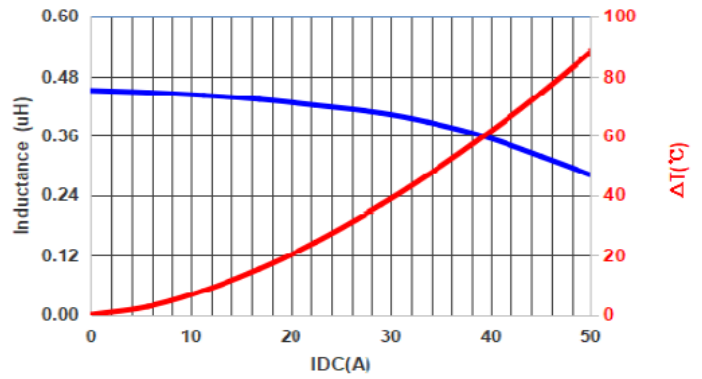


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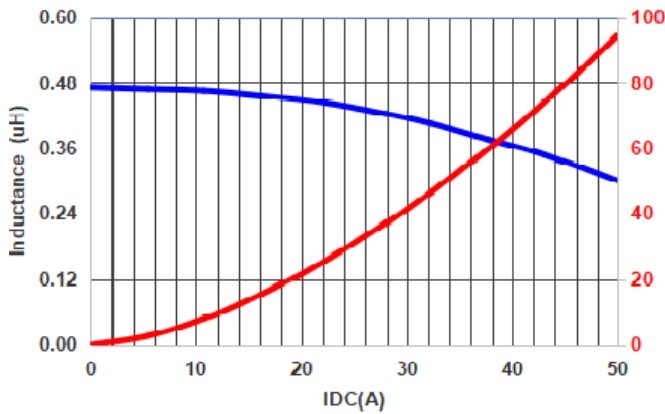
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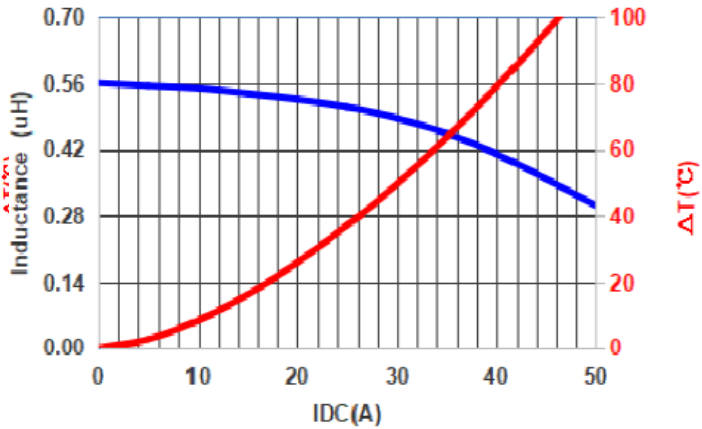
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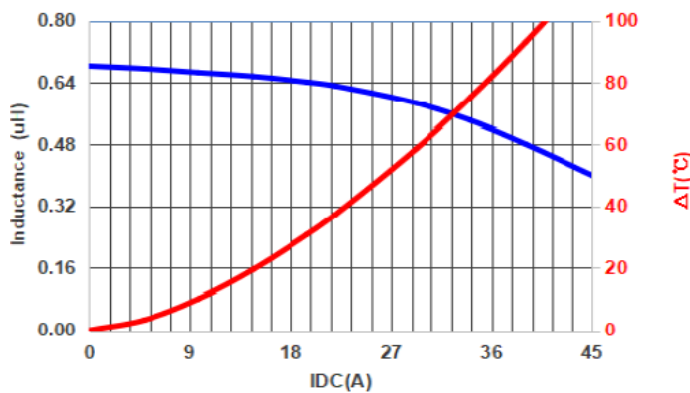
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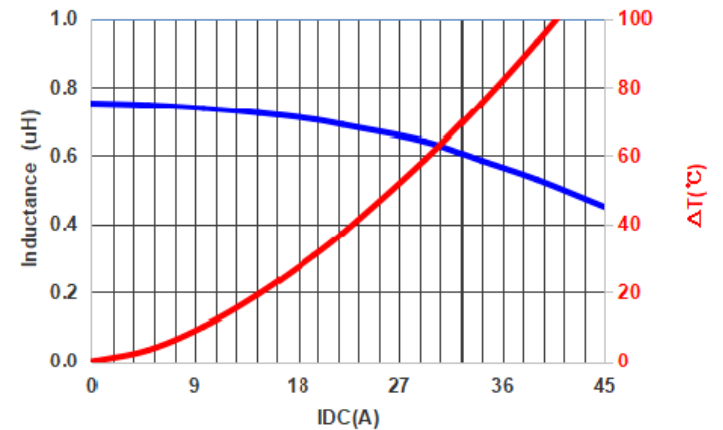
ASPIAIG-F1040-R56



ASPIAIG-F1040-R68



ASPIAIG-F1040-R75



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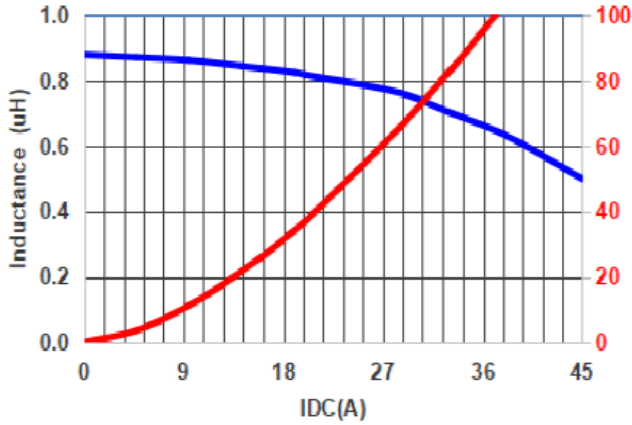


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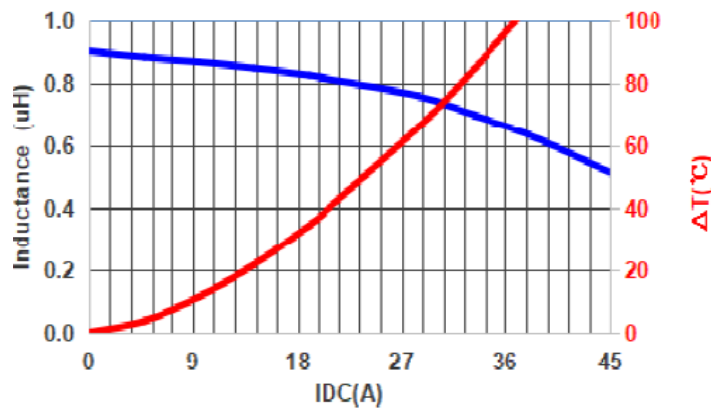


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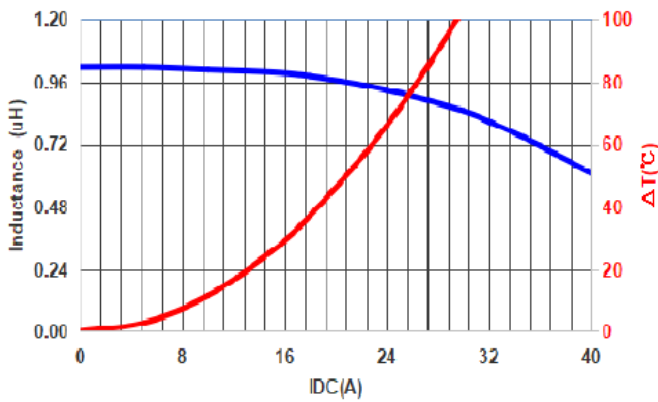
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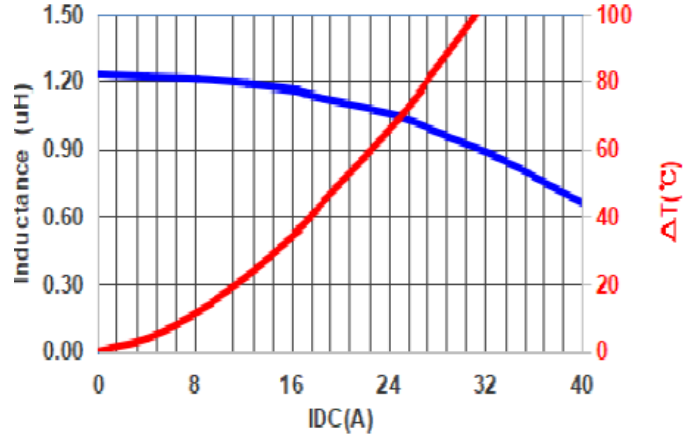
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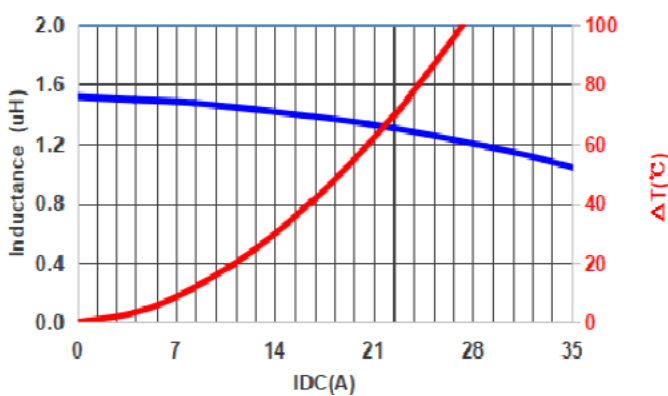
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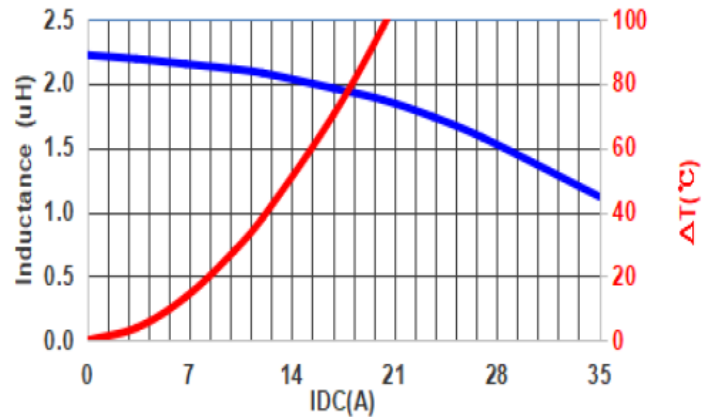
**ASPIAIG-F1040-1R2**



**ASPIAIG-F1040-1R5**



**ASPIAIG-F1040-2R2**



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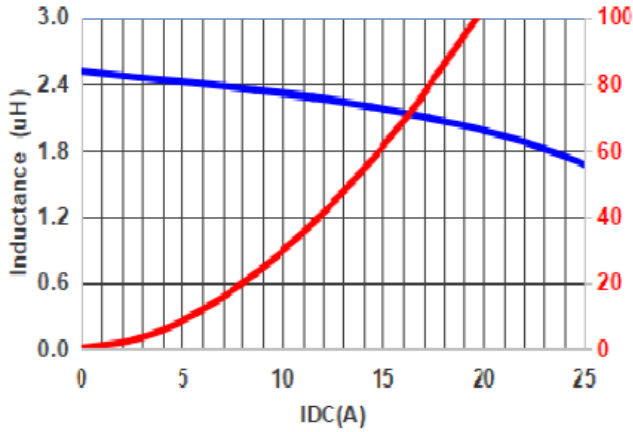


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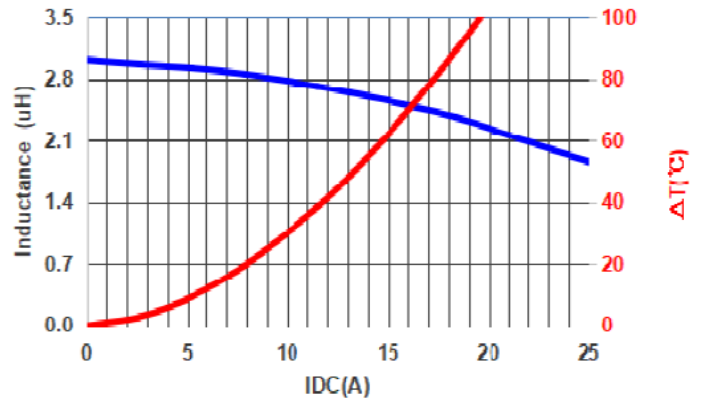


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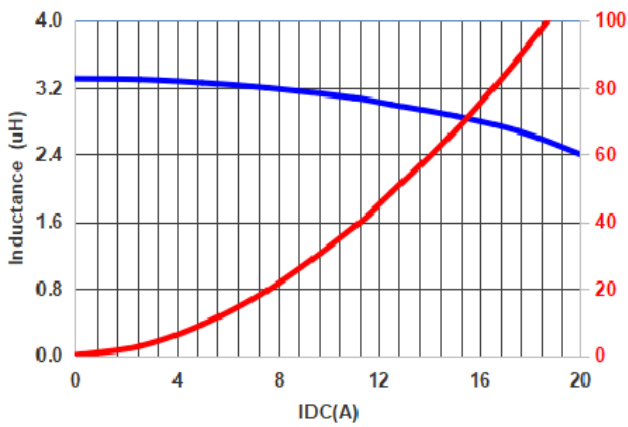
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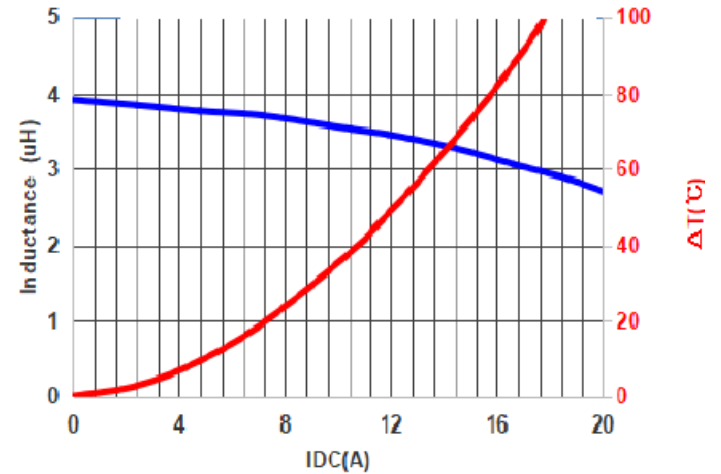
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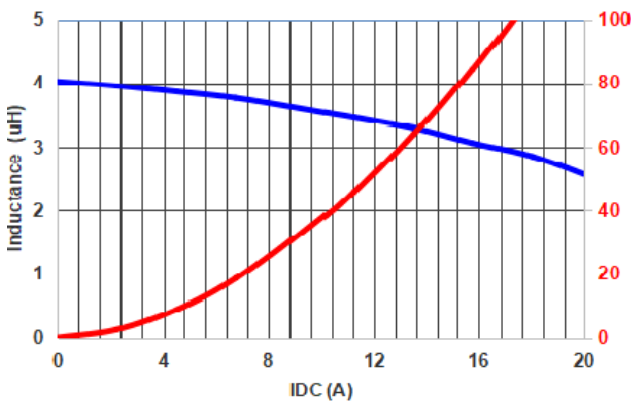
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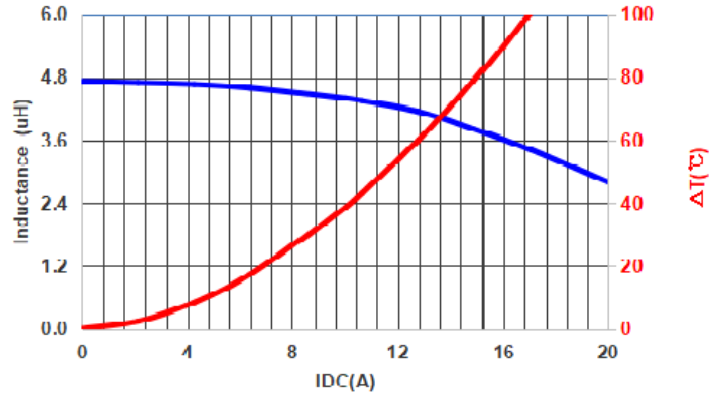
ASPIAIG-F1040-3R9



ASPIAIG-F1040-4R0



ASPIAIG-F1040-4R7



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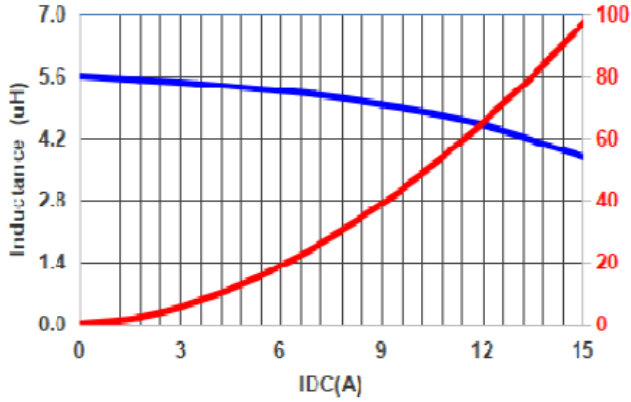


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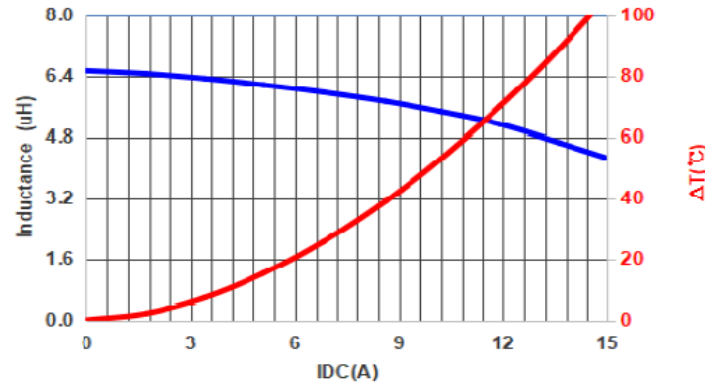


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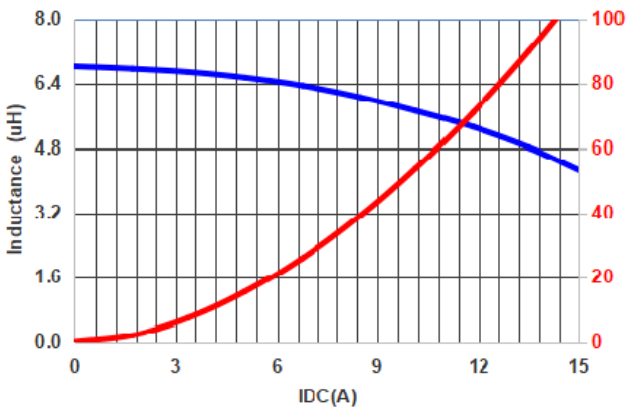
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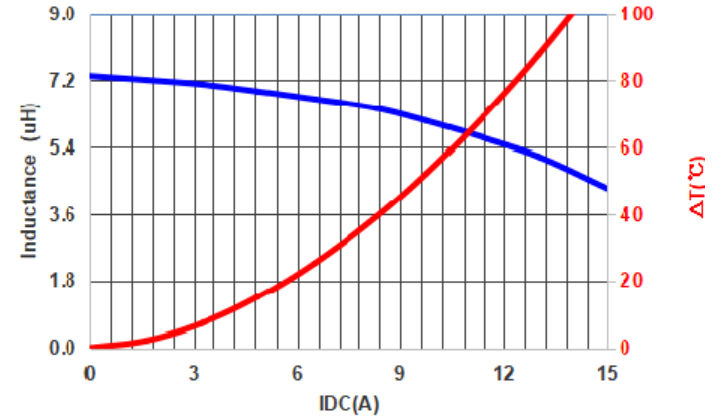
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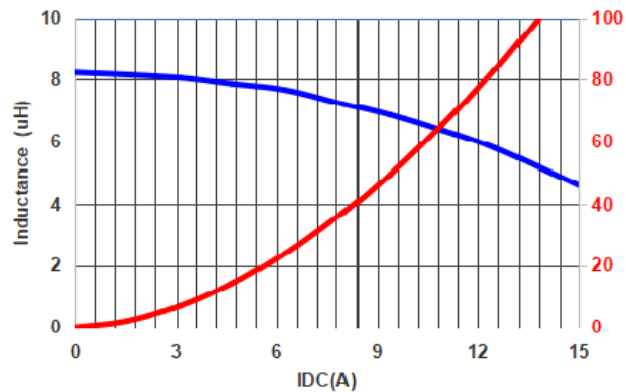
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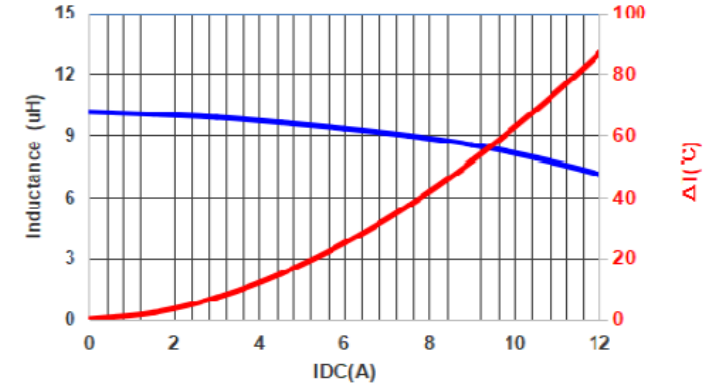
### ASPIAIG-F1040-7R3



### ASPIAIG-F1040-8R2



### ASPIAIG-F1040-100



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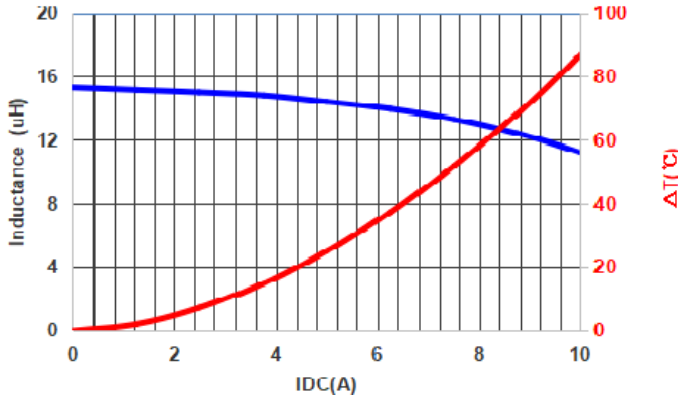


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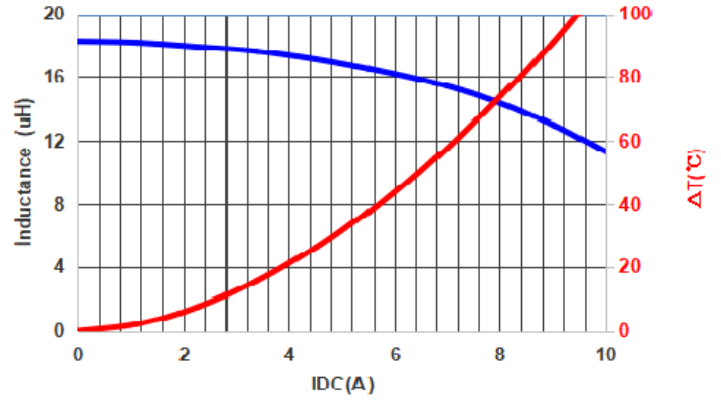


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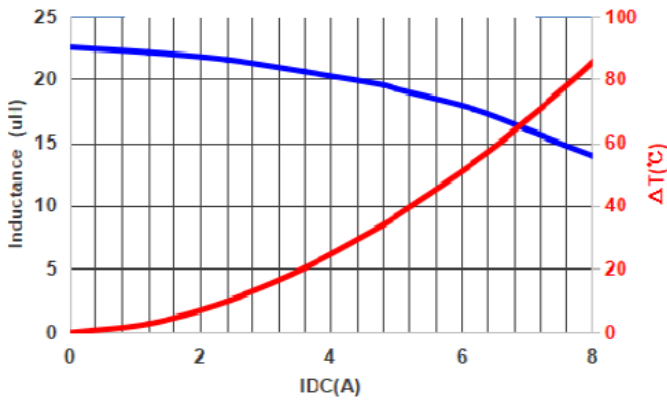
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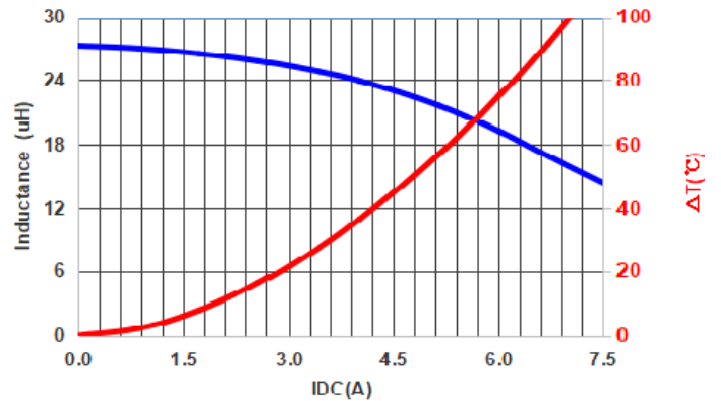
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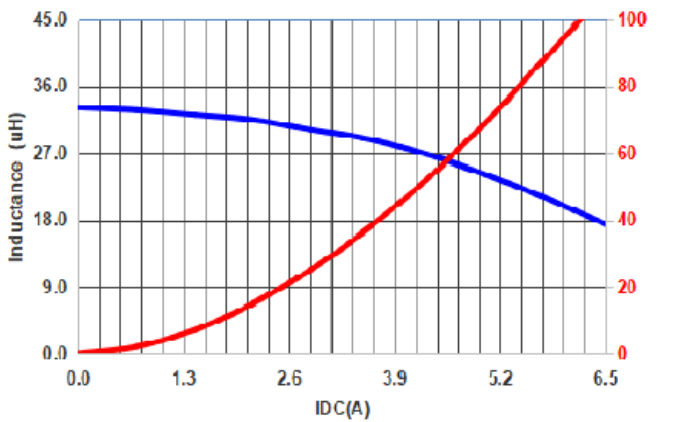
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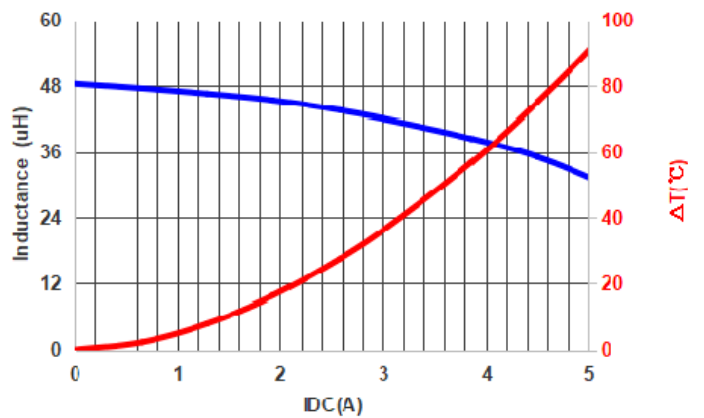
ASPIAIG-F1040-270



ASPIAIG-F1040-330



ASPIAIG-F1040-470



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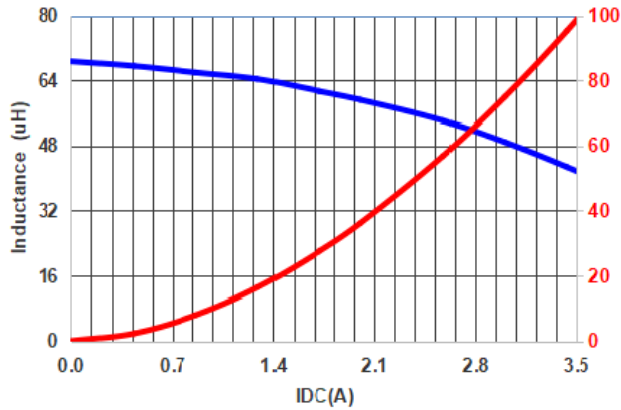


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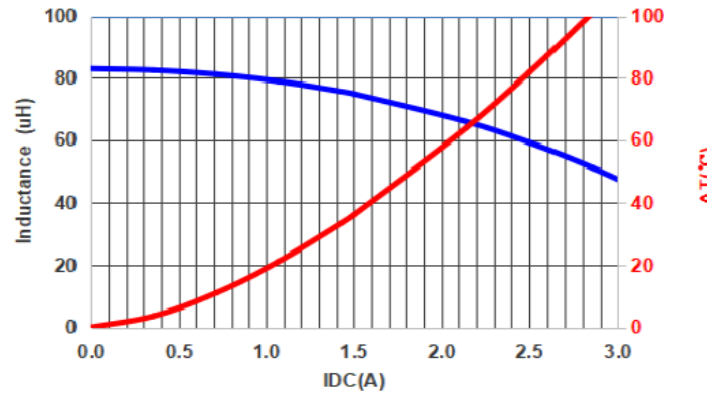


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### ASPIAIG-F1040-680



### ASPIAIG-F1040-820



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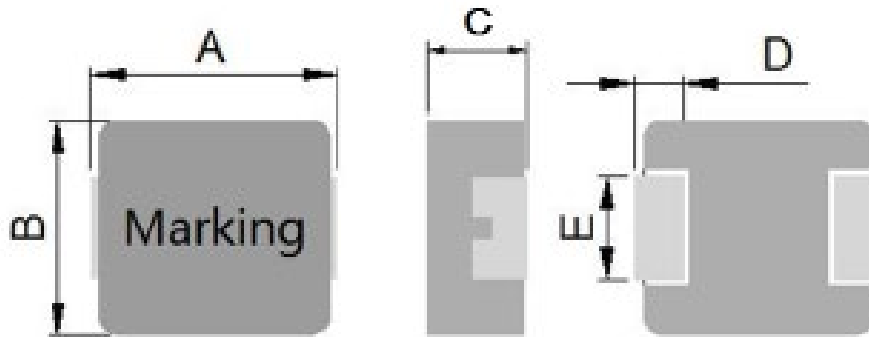


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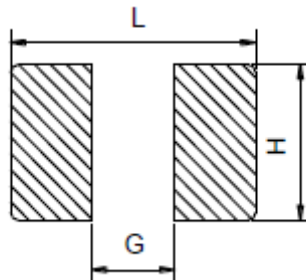
11.0 x 10.0 x 3.8 mm  
 RoHS/RoHS II Compliant  
 MSL Level = 1

## Mechanical Specifications



Series	A	B	C	D	E
ASPIAIG-F1040	11.0 ± 0.5	10.0 ± 0.3	3.8 ± 0.2	2.3 ± 0.3	3.0 ± 0.3

## Recommended Land Pattern



L Typ.	G Typ.	H Typ.
13.6	5.4	3.5

Dimension: mm



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## Part Identification

ASPIAIG – F1040 - [ ] - [ ] - [ ]

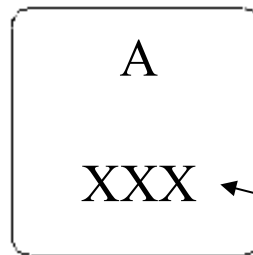
Inductance Code
Please refer to Electrical Spec table

Tolerance
M: $\pm 20\%$
N: $\pm 30\%$

Packaging
T: Tape and Reel (500pcs / reel)

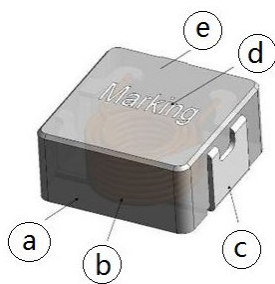
## Marking

Marking Method: Ink

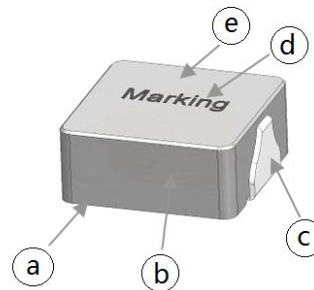


Inductance Code  
e.g. 1R0

## Materials



Lead Frame



Non-Lead Frame

	Components	Material
a	Core	Carbonyl powder
b	Wire	220 deg. C Polyester Wire
c	Lead Frame	100% Pb free solder (Ni+Sn – plating)
	Non-Lead Frame	100% Pb free solder
d	Ink	Halogen-free ketone
e	Paint	Epoxy resin



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# Molded SMD Power Inductor



ASPIAIG-F1040 Series

Request Samples

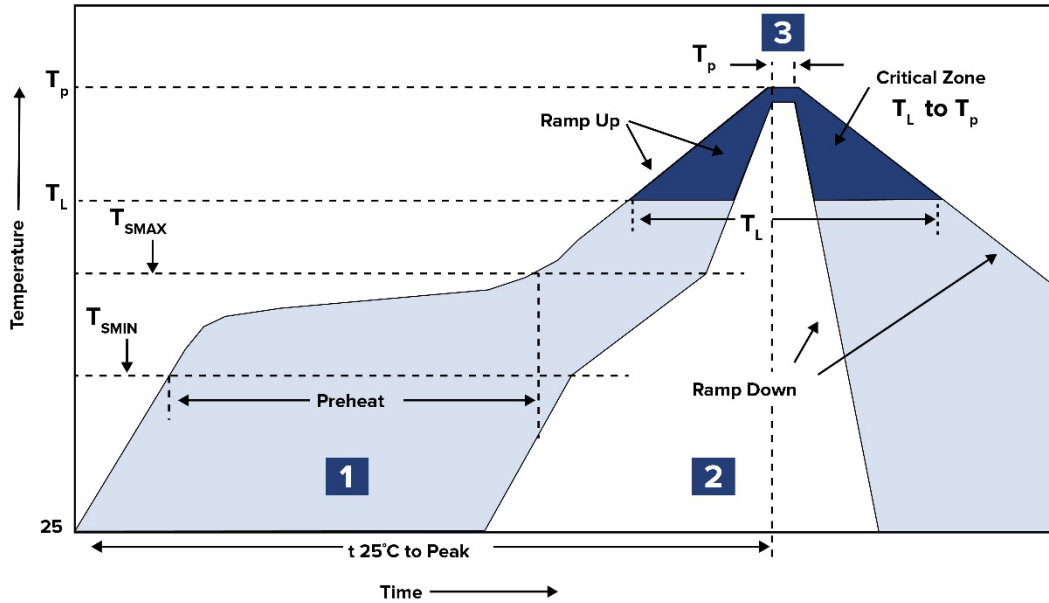


Check Inventory



11.0 x 10.0 x 3.8 mm  
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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Phone: 512-371-6159 | Fax: 512-351-8858  
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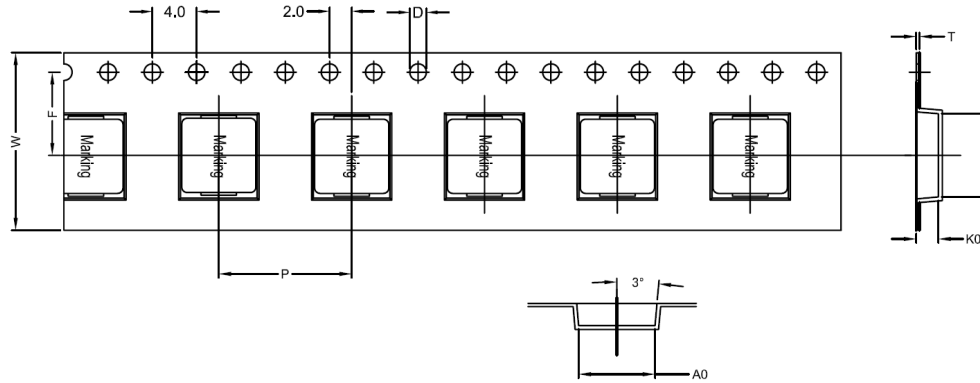
Check Inventory



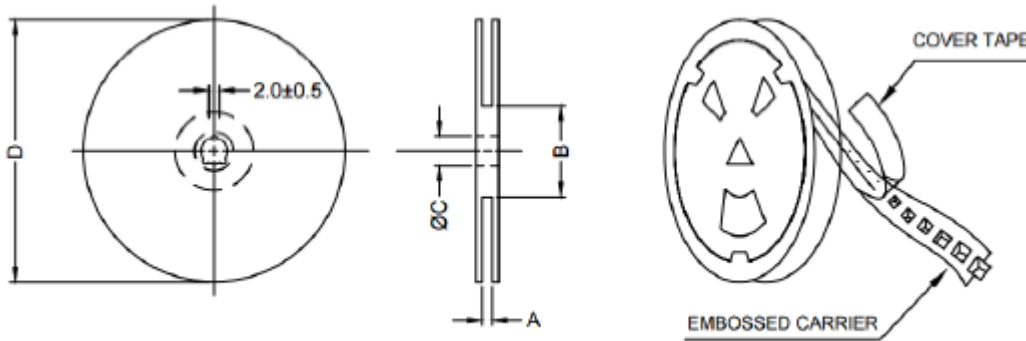
11.0 x 10.0 x 3.8 mm  
**RoHS/RoHS II Compliant**  
 MSL Level = 1

### Packaging (Tape & Reel)

ASPIAIG-F1040: 500pcs / reel



Series	W	F	P	D	A <sub>0</sub>	B <sub>0</sub>	T	K <sub>0</sub>
ASPIAIG-F1040	24.0±0.3	11.5±0.1	16.0±0.1	1.5±0.1	10.4±0.1	11.6±0.1	0.35±0.05	4.5±0.1



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

Dimension: mm

**ATTENTION:** Abracon LLC'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-dependent 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 LLC is required. Please contact Abracon LLC for more information.



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