

# HIGH CURRENT SHIELDED SMD POWER INDUCTOR AIG



## ASPIAIG-F SERIES

Dimensions vary  
MSL = 1



### SERIES DESCRIPTION

The ASPIAIG-F series of molded smd power inductors come in a variety of package sizes. The series supports current handling up to 36A and DCR of only 1.75mΩ. This series is perfect for DC/DC converters in distributed power systems, DC/DC converters for FPGAs, voltage regulator module for servers, and high current, low profile POL converters.

### FEATURES

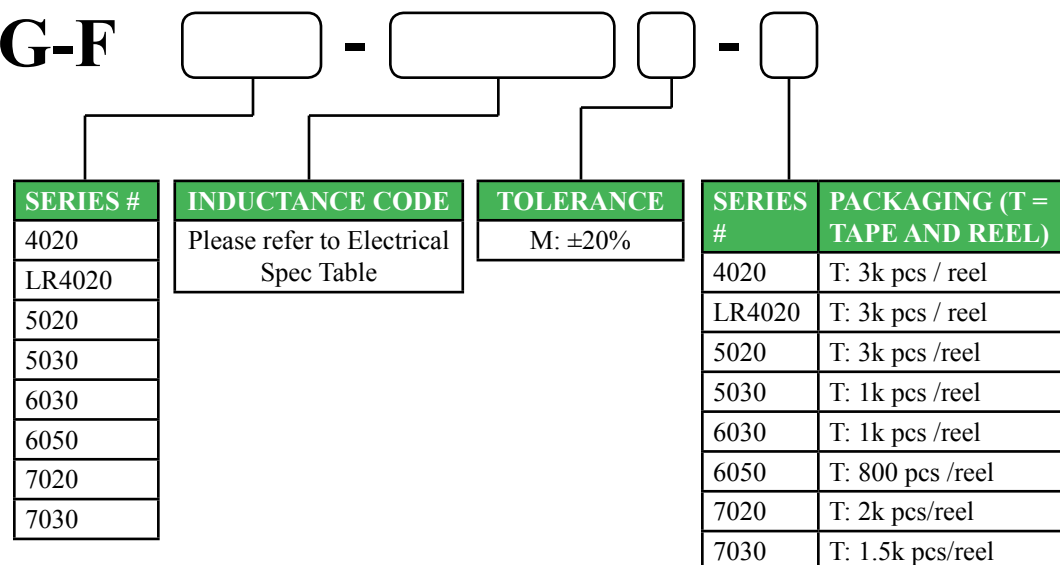
- PPAP ready and supported
- TS16949 production certified lines
- AEC-Q200 qualified
- Excellent current handling – up to 36A
- Exceptionally low DCR – only 1.75 mΩ
- Soft saturation
- Low profile for compact design
- Shielded construction reduces EMI

### 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
- DC/DC converters for FPGA (Field Programmable Gate Array)
- Battery powered device
- Thin type on-board power supply module for exchangers
- VRM (Voltage Regulator Module) for server
- High current, low profile POL (Point of Load) converters
- Graphics card (Buck converters)

### OPTIONS AND PART IDENTIFICATION

## ASPIAIG-F



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### ELECTRICAL SPECIFICATIONS

OPERATING TEMPERATURE	STORAGE CONDITION
-40°C - 125°C (including self-temperature rise)	-10°C - +40°C and R.H. 60%max

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
ASPIAIG-FLR4020-R47	0.47	20%	6.8	12.5	13.2
ASPIAIG-FLR4020-R68	0.68	20%	8.2	10.0	12.0
ASPIAIG-FLR4020-R82	0.82	20%	9.5	9.0	11.5
ASPIAIG-FLR4020-1R0	1.00	20%	11.7	8.0	11.0
ASPIAIG-FLR4020-1R2	1.20	20%	13.4	7.5	9.5
ASPIAIG-FLR4020-1R5	1.50	20%	15.8	6.7	9.1
ASPIAIG-FLR4020-2R0	2.00	20%	23.3	5.0	8.2
ASPIAIG-FLR4020-2R2	2.20	20%	23.5	4.8	8.0
ASPIAIG-FLR4020-3R3	3.30	20%	38.3	4.4	5.5
ASPIAIG-FLR4020-4R7	4.70	20%	57.2	3.5	5.1
ASPIAIG-F5020-R15	0.15	20%	4.60	27.0	18.8
ASPIAIG-F5020-R16	0.16	20%	4.60	27.0	18.8
ASPIAIG-F5020-R33	0.33	20%	7.00	24.0	14.4
ASPIAIG-F5020-R47	0.47	20%	8.05	20.0	14.1
ASPIAIG-F5020-R56	0.56	20%	9.54	16.0	13.9
ASPIAIG-F5020-R68	0.68	20%	10.2	14.0	13.4
ASPIAIG-F5020-R80	0.80	20%	11.8	13.5	13.0
ASPIAIG-F5020-R82	0.82	20%	12.7	13.0	12.0
ASPIAIG-F5020-1R0	1.00	20%	13.8	12.8	10.5
ASPIAIG-F5020-1R2	1.20	20%	16.3	12.2	9.40
ASPIAIG-F5020-1R5	1.50	20%	18.7	11.7	8.80

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	0.1MHz/0.1V		MAX	MAX	MAX
UNITS	μH	%	mΩ	A	A
SYMBOL	L	M	DCR	Isat	Irms
ASPIAIG-F5030-R15	0.15	20%	2.31	32.5	22.2
ASPIAIG-F5030-R16	0.16	20%	2.33	32.0	22.2
ASPIAIG-F5030-R33	0.33	20%	3.52	26.0	19.2
ASPIAIG-F5030-R56	0.56	20%	4.52	20.2	17.7
ASPIAIG-F5030-R60	0.60	20%	4.52	20.0	17.7
ASPIAIG-F5030-R80	0.80	20%	5.65	18.0	13.1
ASPIAIG-F5030-R82	0.82	20%	5.78	17.6	12.9
ASPIAIG-F5030-1R0	1.00	20%	7.60	14.3	12.2
ASPIAIG-F5030-1R2	1.20	20%	9.70	13.5	11.0
ASPIAIG-F5030-1R5	1.50	20%	11.2	12.5	10.5
ASPIAIG-F5030-1R8	1.80	20%	12.7	11.3	10.1
ASPIAIG-F5030-2R2	2.20	20%	14.5	9.0	9.70
ASPIAIG-F5030-3R3	3.30	20%	23.1	8.7	8.10
ASPIAIG-F5030-4R7	4.70	20%	36.3	7.0	5.90
ASPIAIG-F6050-1R0	1.00	20%	4.52	18.0	20.0
ASPIAIG-F6050-1R2	1.20	20%	5.83	16.0	18.0
ASPIAIG-F6050-1R5	1.50	20%	6.3	14.5	17.0
ASPIAIG-F6050-1R8	1.80	20%	7.1	13.5	16.0
ASPIAIG-F6050-2R2	2.20	20%	8.5	12.0	13.0
ASPIAIG-F6050-3R3	3.30	20%	12.5	10.0	11.0
ASPIAIG-F6050-4R3	4.30	20%	16.2	8.5	9.0
ASPIAIG-F6050-4R7	4.70	20%	18.4	8.0	8.5

PART NUMBER	INDUCTANCE	TOLERANCE	SELF-RESONANT FREQUENCY	DC RESISTANCE	SATURATION CURRENT	TEMPERATURE RISE CURRENT
	0.1MHz/0.1V		REF	MAX	MAX	MAX
UNITS	μH	%	MHz	mΩ	A	A
SYMBOL	L	M	SRF	DCR	Isat	Irms
ASPIAIG-F6030-R18	0.18	20%	143	1.75	36.0	32.0
ASPIAIG-F6030-R33	0.33	20%	78	2.50	28.0	25.0
ASPIAIG-F6030-R56	0.56	20%	70	3.31	25.0	22.0
ASPIAIG-F6030-1R0	1.00	20%	52	6.05	18.0	18.0
ASPIAIG-F6030-1R2	1.20	20%	47	7.40	16.0	16.0
ASPIAIG-F6030-1R8	1.80	20%	33	10.2	13.0	14.0
ASPIAIG-F6030-2R2	2.20	20%	29	12.2	11.0	10.0
ASPIAIG-F6030-3R3	3.30	20%	25	20.8	9.00	8.00
ASPIAIG-F6030-4R5	4.50	20%	20	25.3	8.00	7.00

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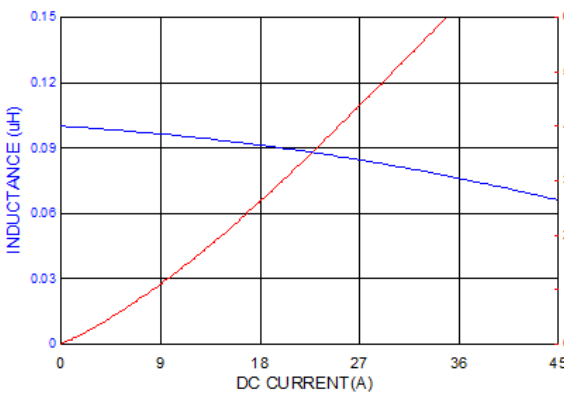


### ELECTRICAL SPECIFICATIONS

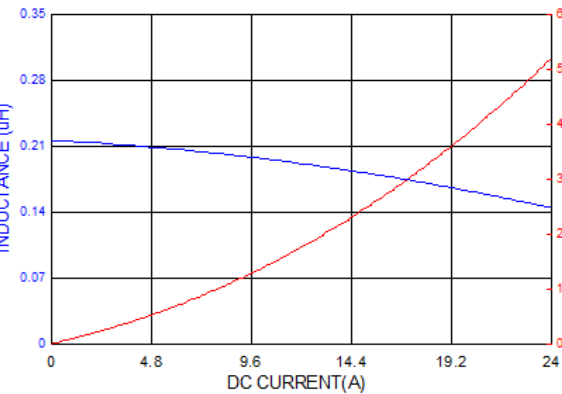
PART NUMBER	INDUCTANCE	TOLERANCE	DC RESISTANCE	SATURATION CURRENT	TEMPERATURE RISE CURRENT	D
	0.1MHz/0.1V		MAX	MAX	MAX	
UNITS	μH	%	mΩ	A	A	mm
SYMBOL	L	M	DCR	Isat	Irms	
ASPIAIG-F7020-R27	0.27	20%	3.5	32.0	21.0	6.6
ASPIAIG-F7020-R31	0.31	20%	4.8	31.0	20.0	6.2
ASPIAIG-F7020-R33	0.33	20%	4.8	31.0	19.0	6.2
ASPIAIG-F7020-R47	0.47	20%	6.2	25.0	17.0	6.2
ASPIAIG-F7020-R68	0.68	20%	9.2	23.0	13.0	6.2
ASPIAIG-F7020-1R0	1.00	20%	10.8	20.0	11.0	6.2
ASPIAIG-F7030-R60	0.60	20%	3.2	32.0	23.0	6.6
ASPIAIG-F7030-1R0	1.00	20%	5.0	28.0	21.8	6.6
ASPIAIG-F7030-1R5	1.50	20%	8.25	23.5	15.3	6.6
ASPIAIG-F7030-2R2	2.20	20%	13.7	17.0	13.0	6.2
ASPIAIG-F7030-3R3	3.30	20%	18.0	13.0	10.0	6.2
ASPIAIG-F7030-4R7	4.70	20%	26.7	12.2	9.0	6.2
ASPIAIG-F7030-5R6	5.60	20%	33.2	11.5	7.3	6.2
ASPIAIG-F7030-6R8	6.80	20%	42.5	11.0	6.8	6.2
ASPIAIG-F7030-8R2	8.20	20%	48.73	9.0	5.9	6.2

### ELECTRICAL CHARACTERISTICS

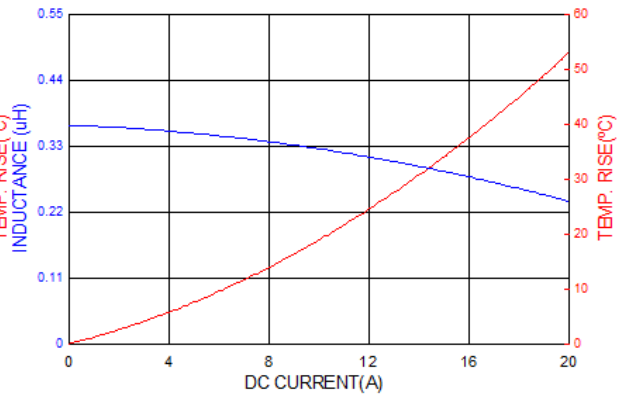
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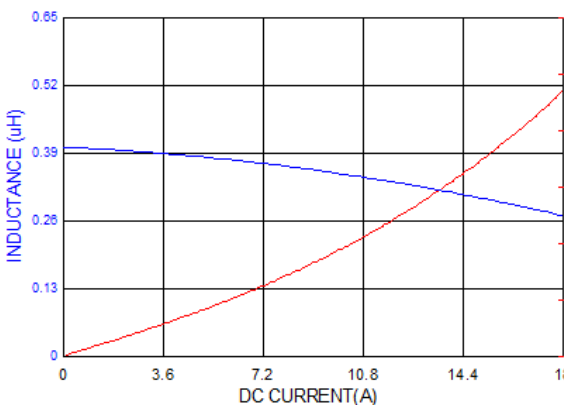
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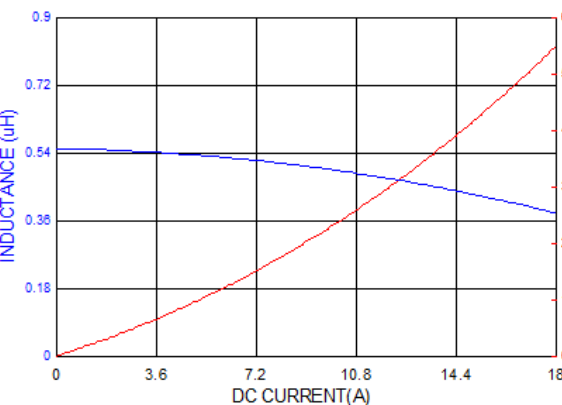
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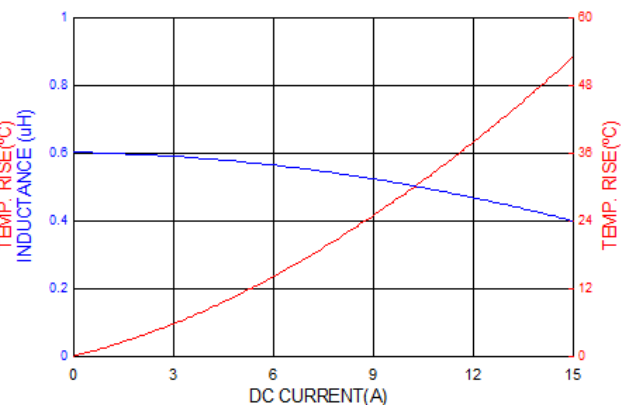
ASPIAIG-F4020-R40



ASPIAIG-F4020-R56



ASPIAIG-F4020-R60



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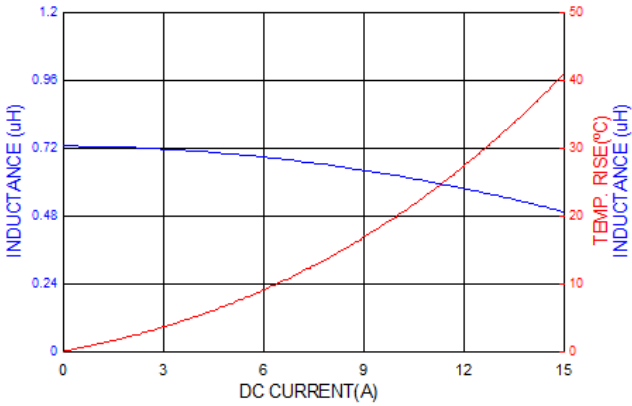
## ASPIAIG-F SERIES

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MSL = 1

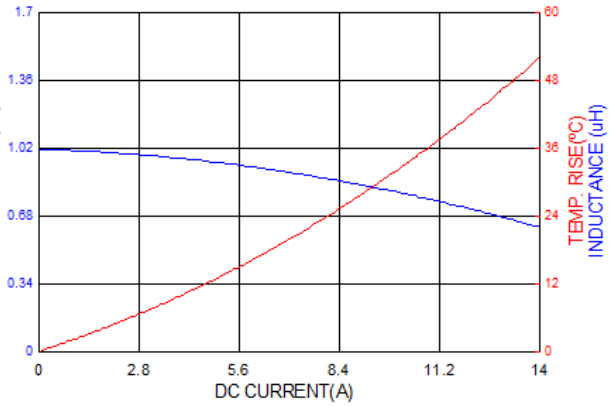


### ELECTRICAL SPECIFICATIONS

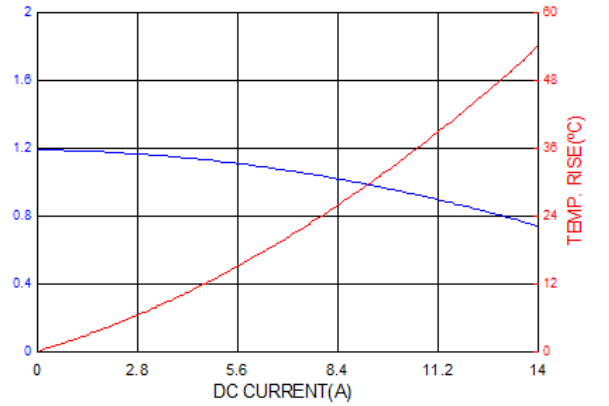
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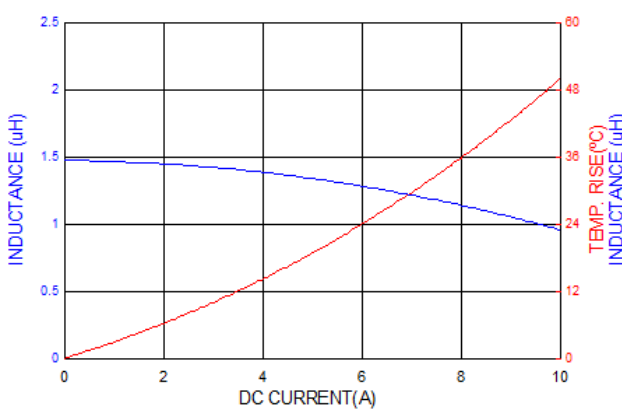
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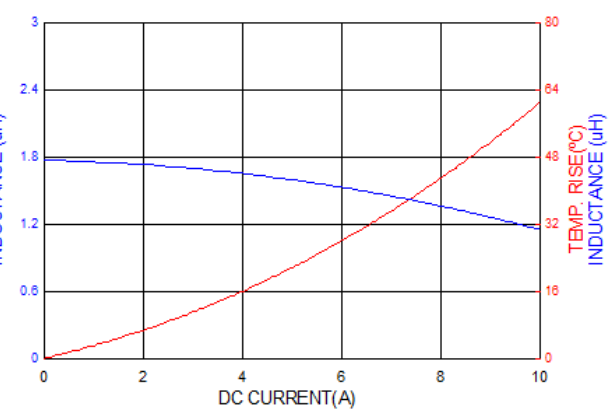
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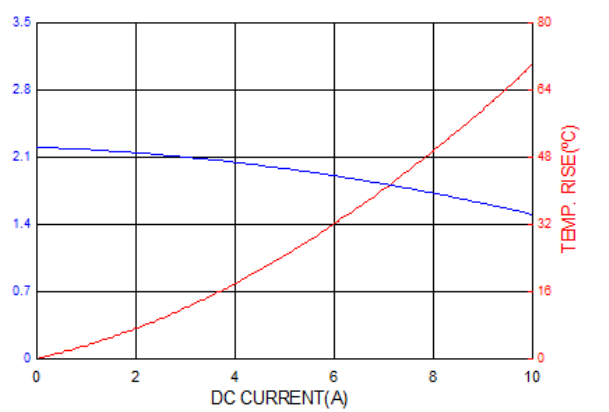
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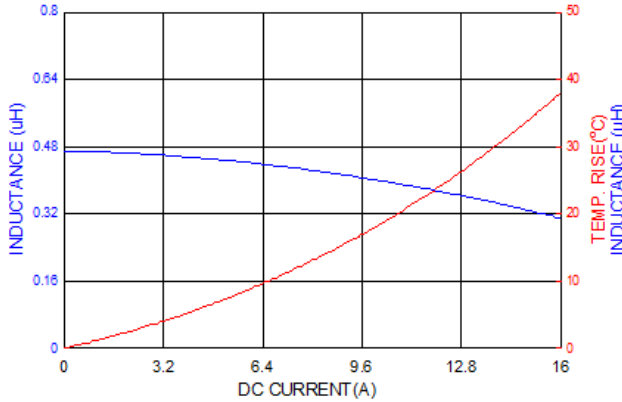
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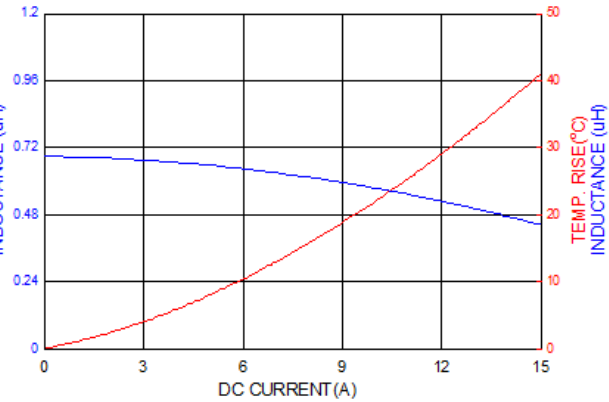
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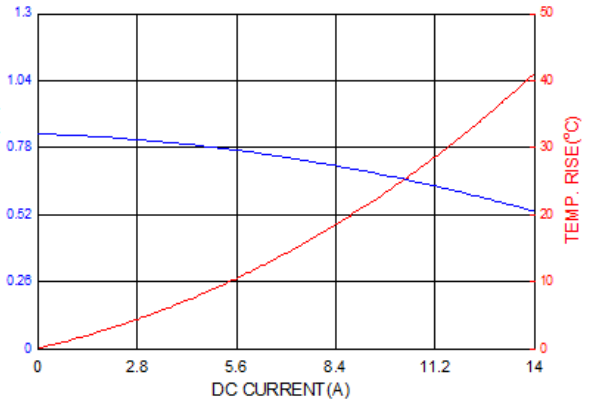
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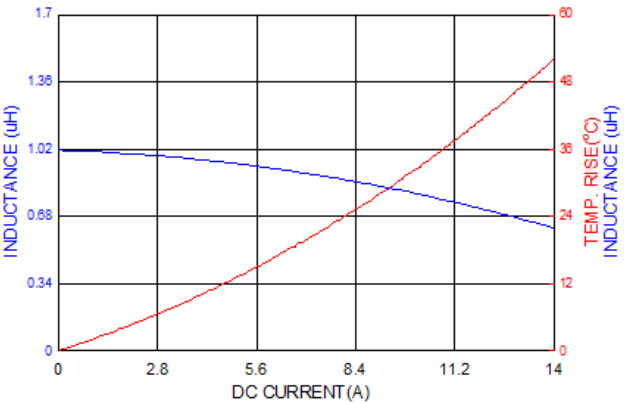
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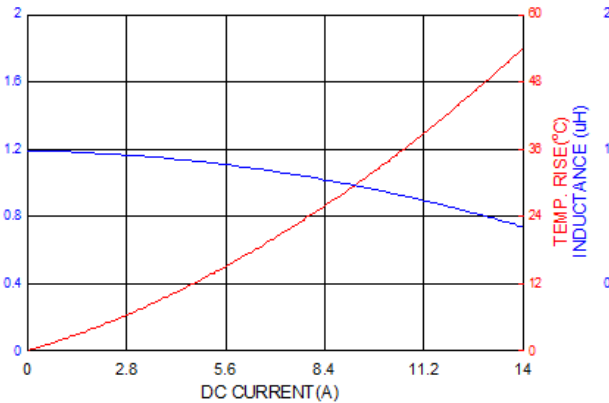
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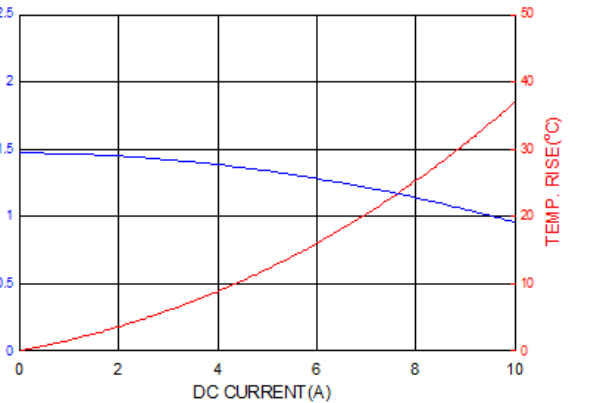
**ASPIAIG-FLR4020-1R0**



**ASPIAIG-FLR4020-1R2**



**ASPIAIG-FLR4020-1R5**



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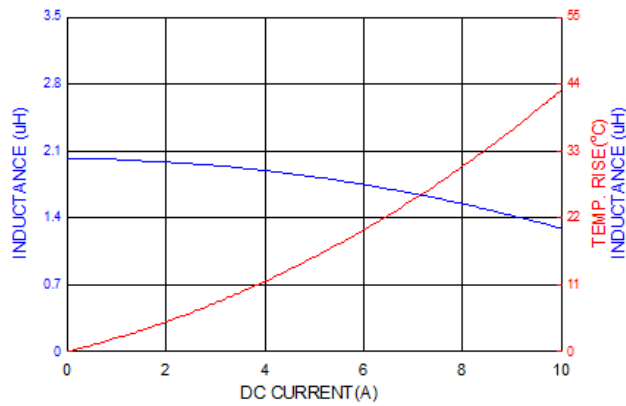
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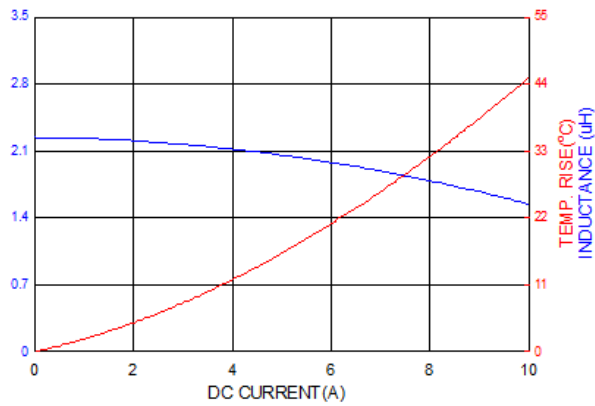


### ELECTRICAL CHARACTERISTICS

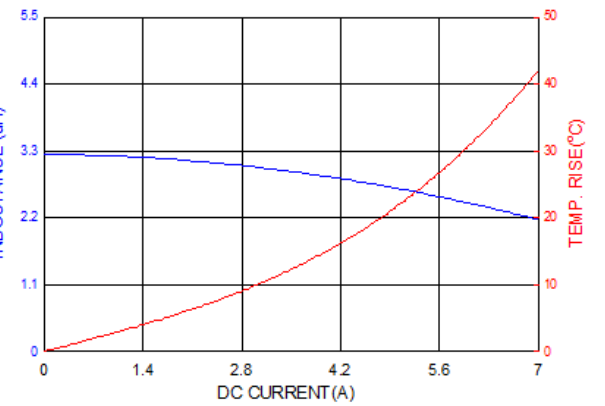
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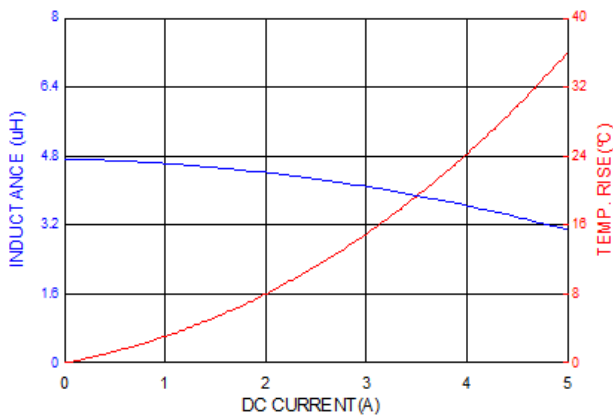
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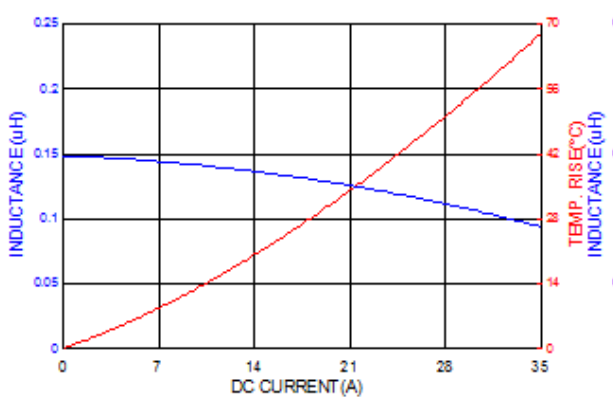
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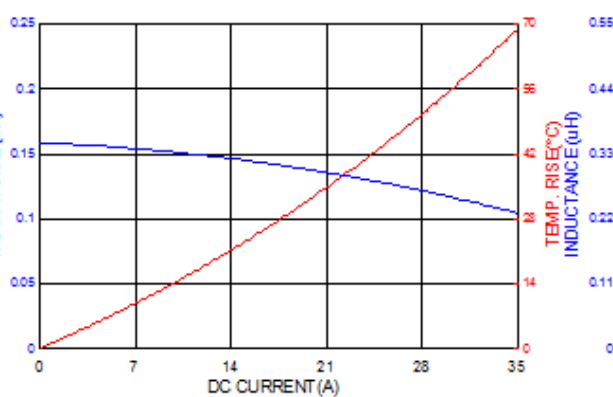
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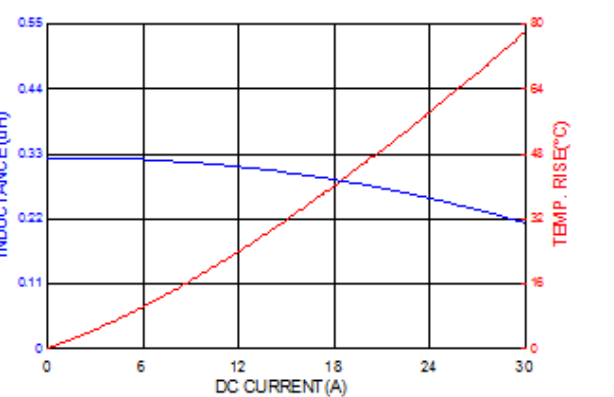
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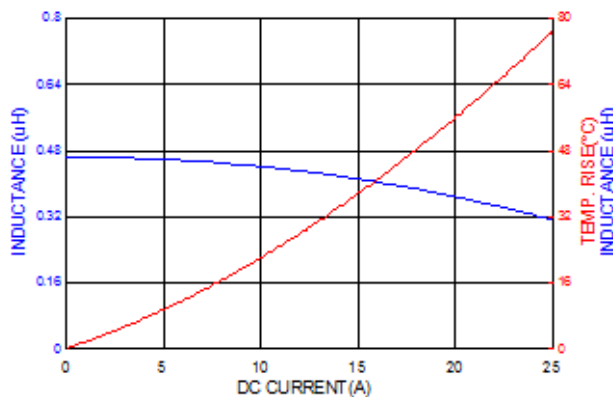
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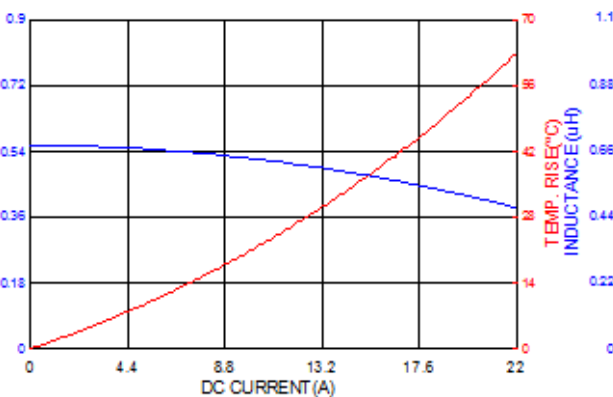
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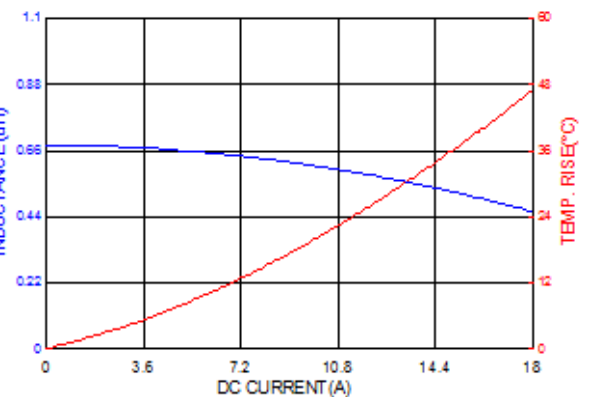
ASPIAIG-F5020-R47



ASPIAIG-F5020-R47



ASPIAIG-F5020-R68



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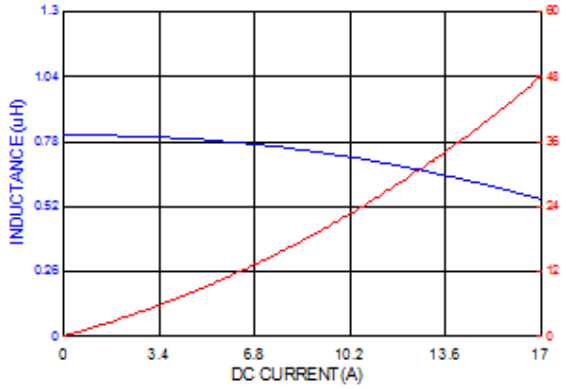
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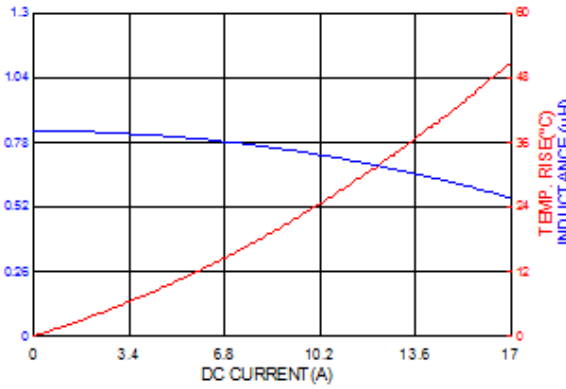


### ELECTRICAL CHARACTERISTICS

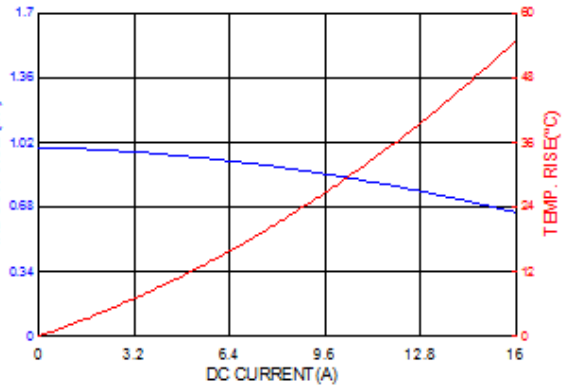
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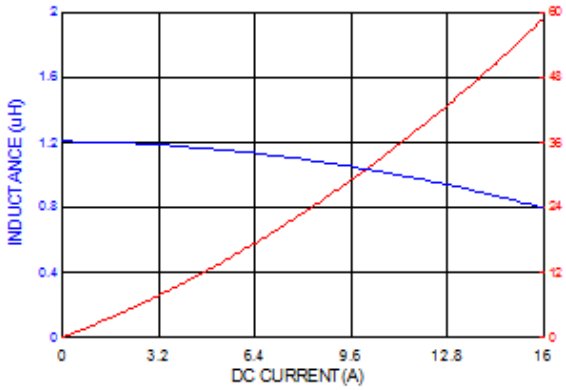
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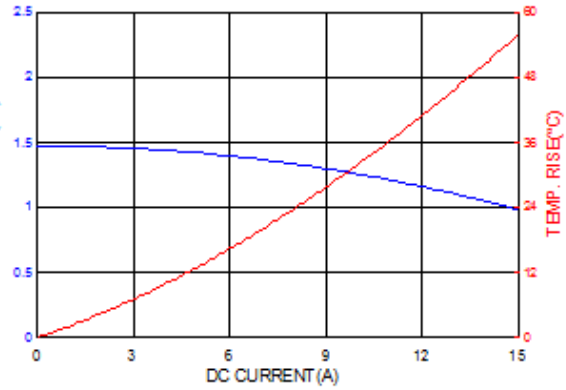
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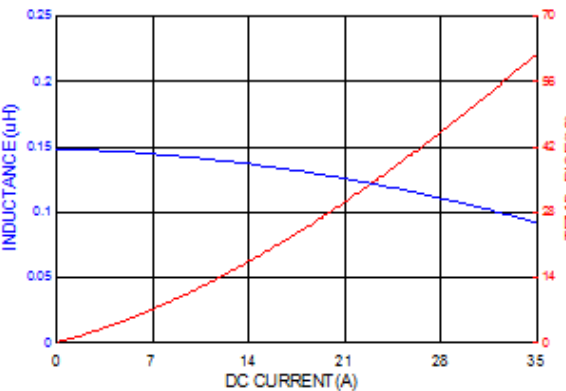
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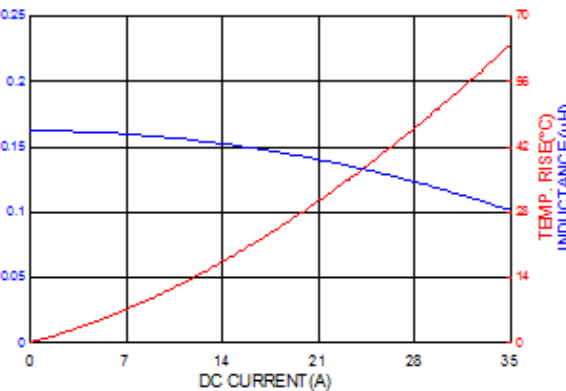
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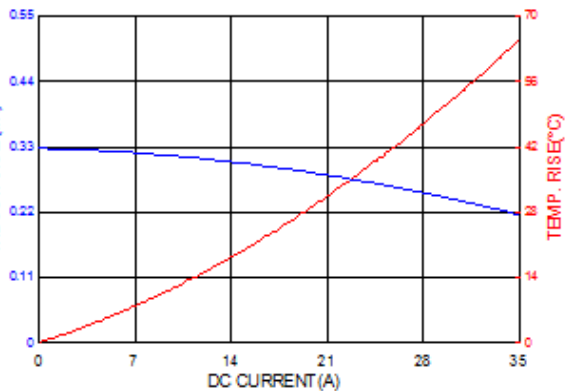
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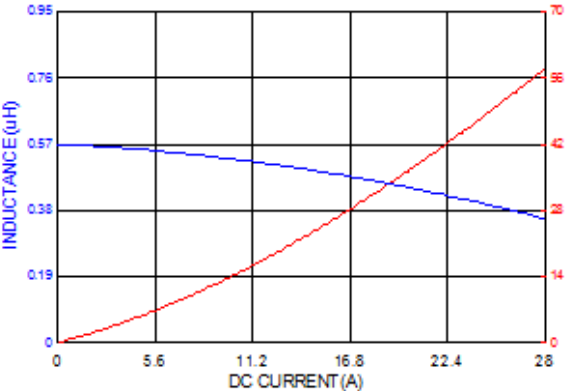
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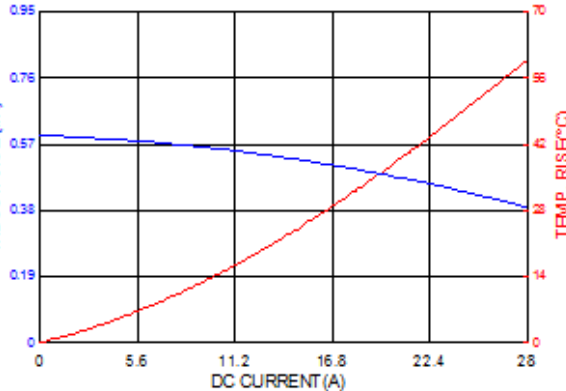
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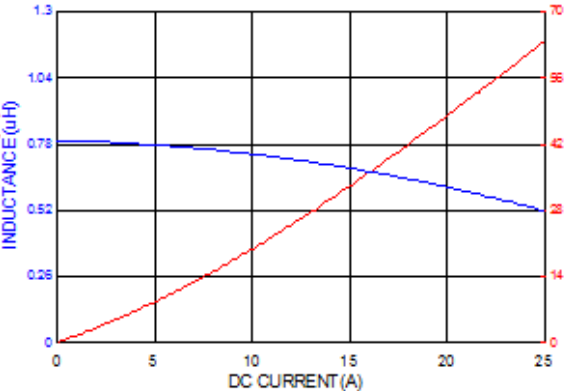
ASPIAIG-F5030-R56



ASPIAIG-F5030-R60



ASPIAIG-F5030-R80



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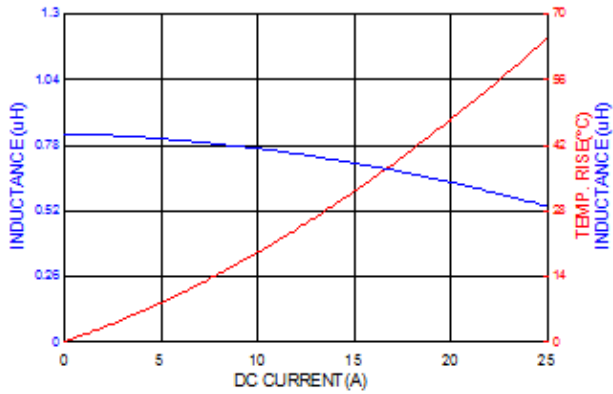
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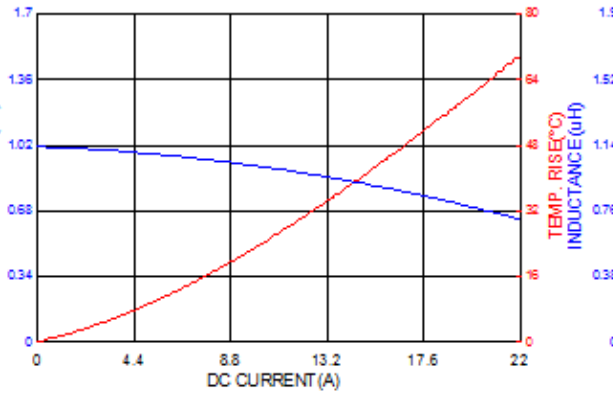


### ELECTRICAL CHARACTERISTICS

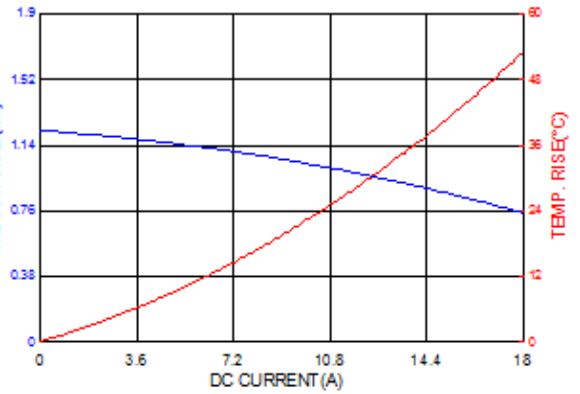
ASPIAIG-F5030-R82



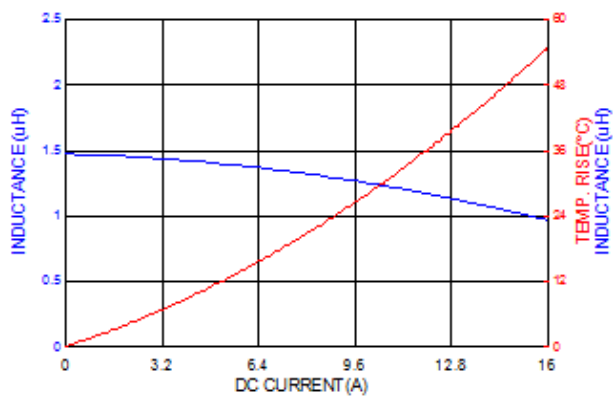
ASPIAIG-F5030-1R0



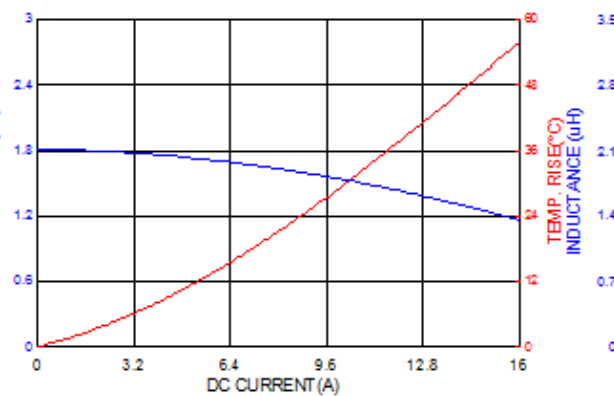
ASPIAIG-F5030-1R2



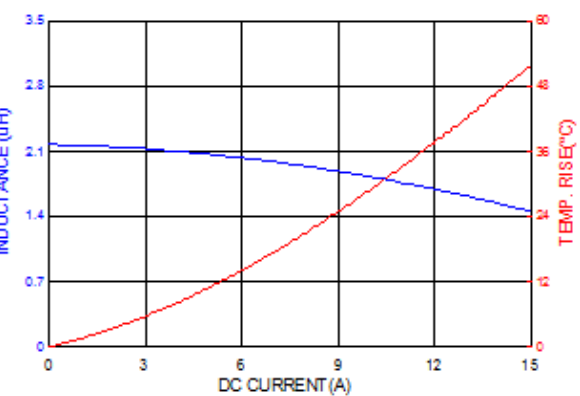
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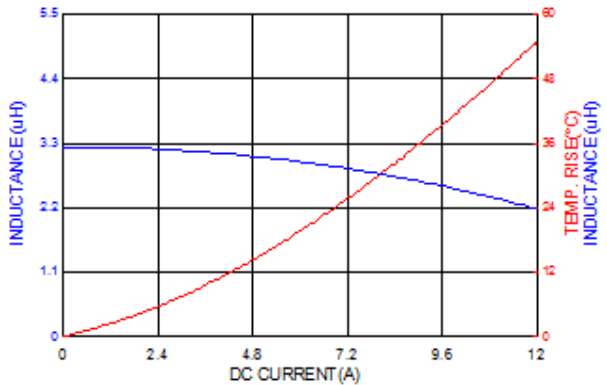
ASPIAIG-F5030-1R8



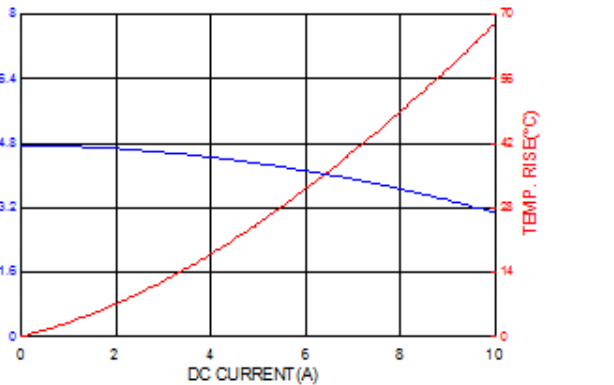
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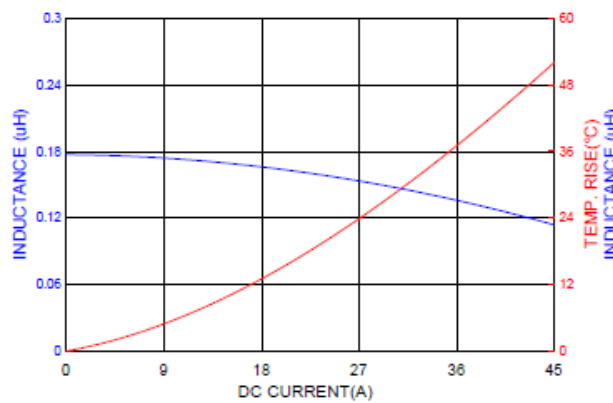
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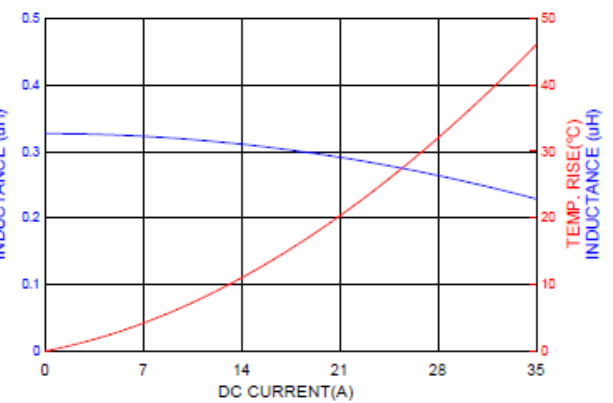
ASPIAIG-F5030-4R7



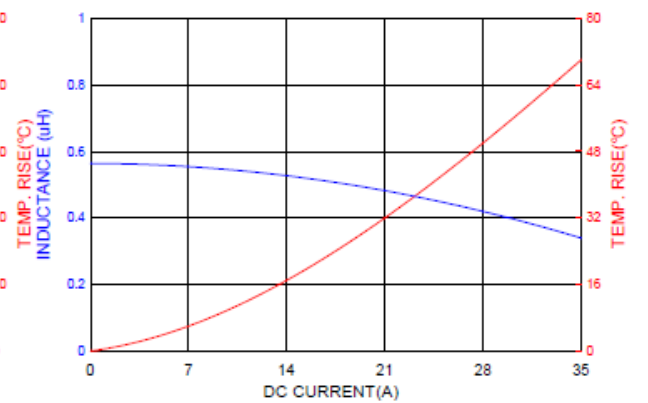
ASPIAIG-F6030-R18



ASPIAIG-F6030-R33



ASPIAIG-F6030-R56



REVISED: 11.07.2017



# HIGH CURRENT SHIELDED SMD POWER INDUCTOR AIG



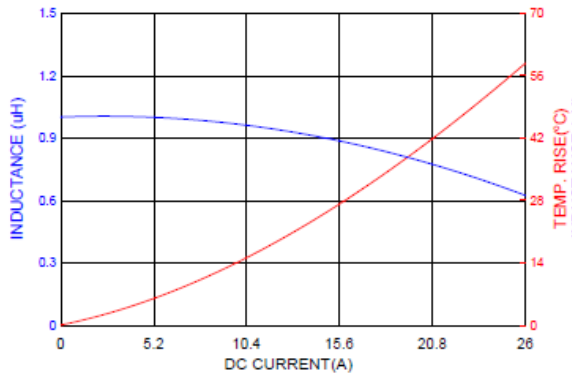
## ASPIAIG-F SERIES

Dimensions vary  
MSL = 1

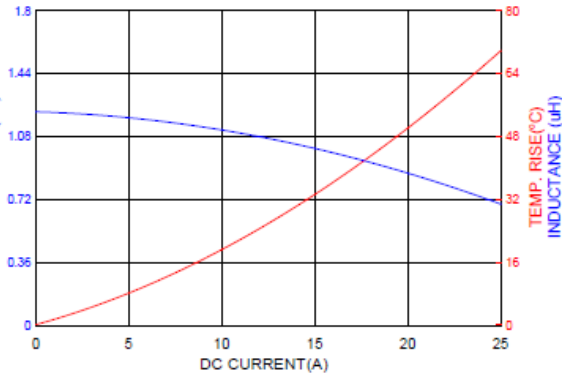


### ELECTRICAL CHARACTERISTICS

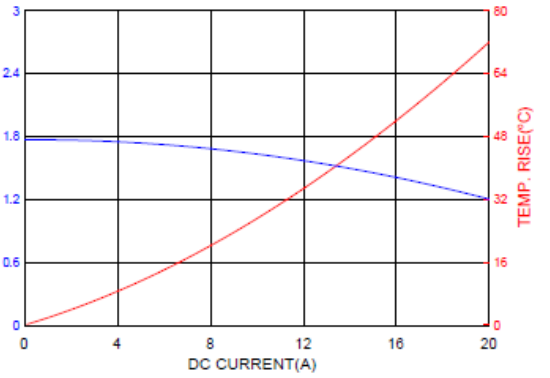
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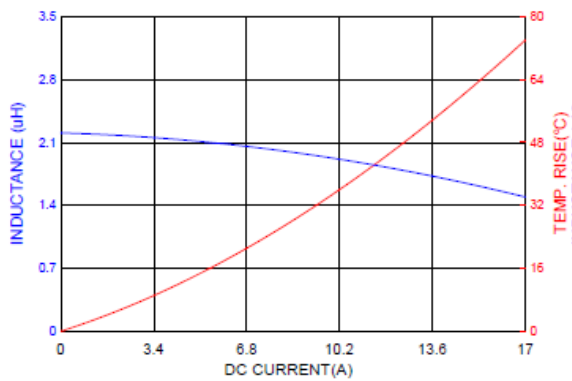
ASPIAIG-F6030-1R2



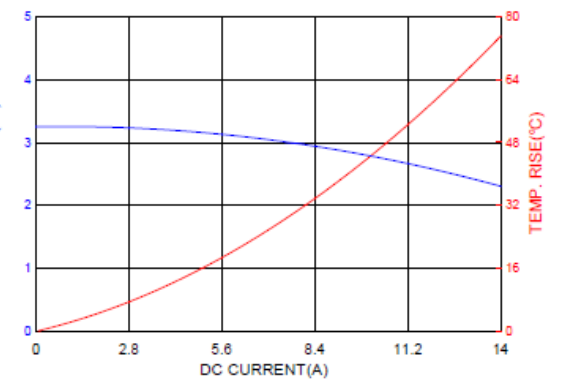
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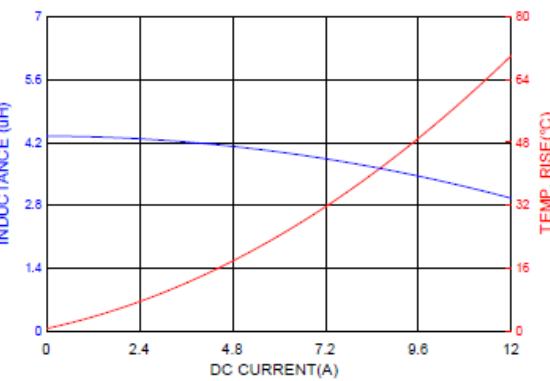
ASPIAIG-F6030-2R2



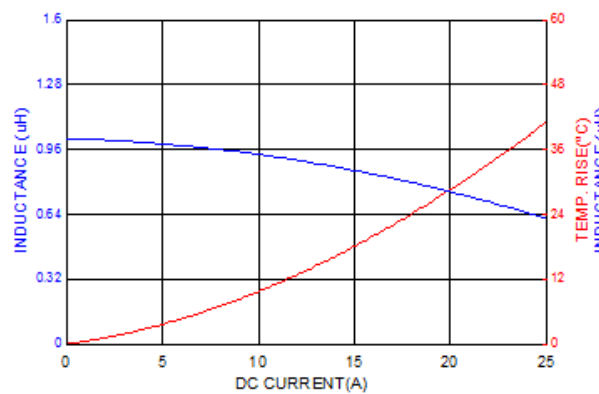
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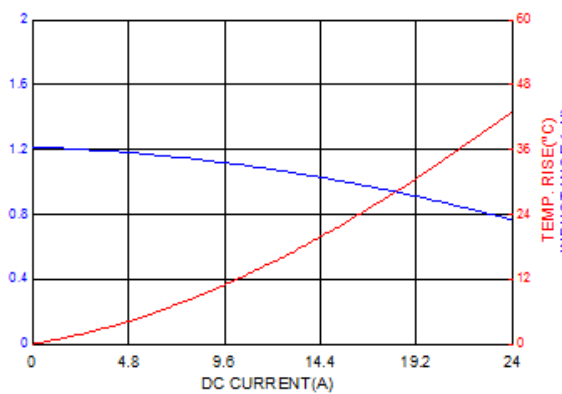
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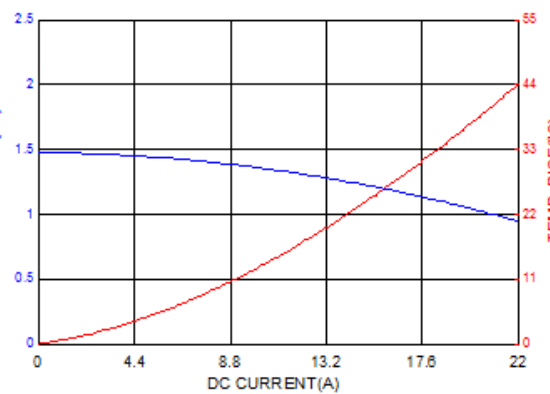
ASPIAIG-F6050-1R0



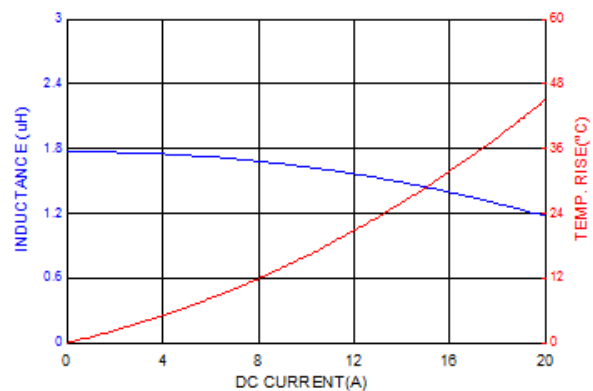
ASPIAIG-F6050-1R2



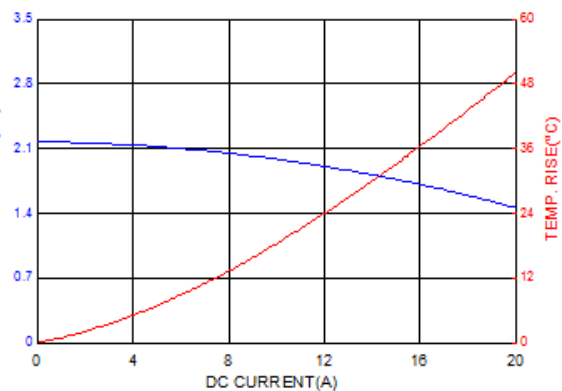
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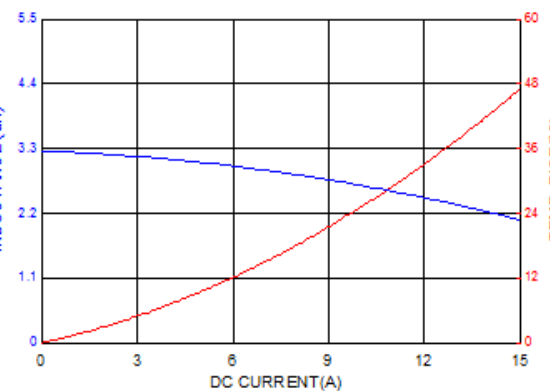
ASPIAIG-F6050-1R8



ASPIAIG-F6050-2R2



ASPIAIG-F6050-3R3



# HIGH CURRENT SHIELDED SMD POWER INDUCTOR AIG



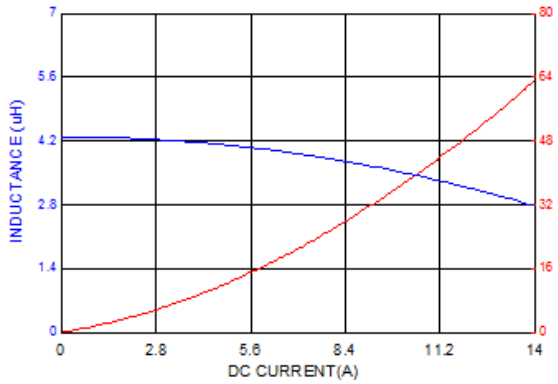
## ASPIAIG-F SERIES

Dimensions vary  
MSL = 1

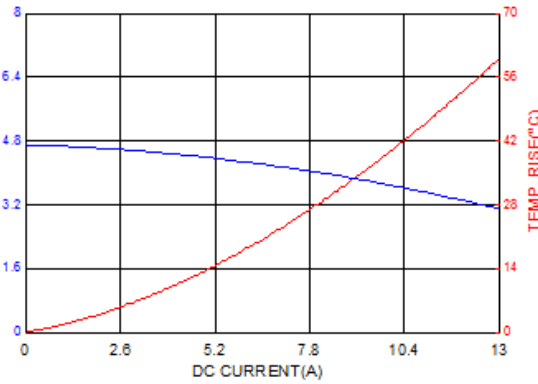


### ELECTRICAL CHARACTERISTICS

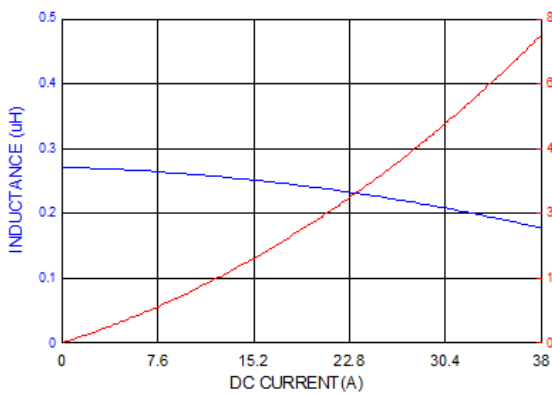
**ASPIAIG-F6050-4R3**



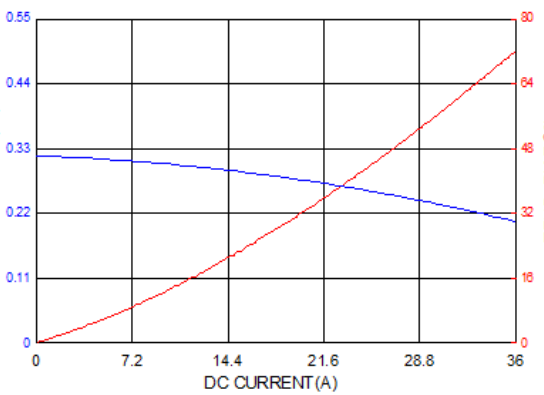
**ASPIAIG-F6050-4R7**



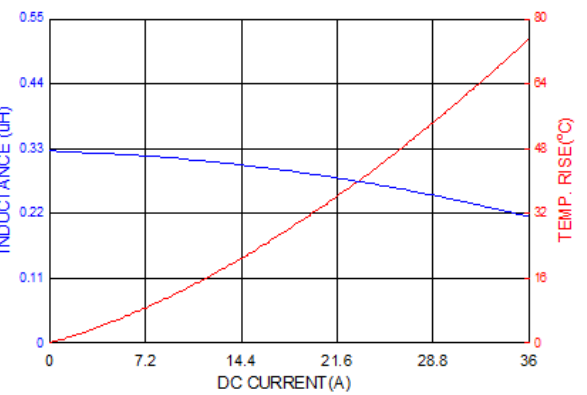
**ASPIAIG-F7020-R27**



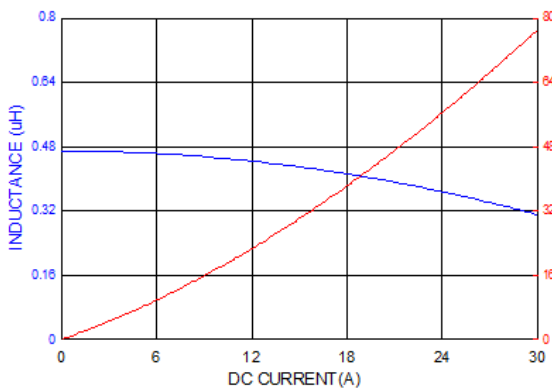
**ASPIAIG-F7020-R31**



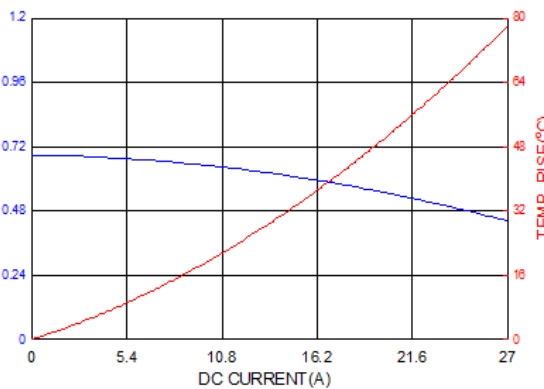
**ASPIAIG-F7020-R33**



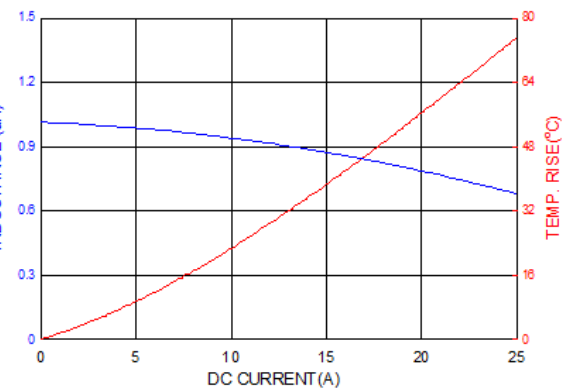
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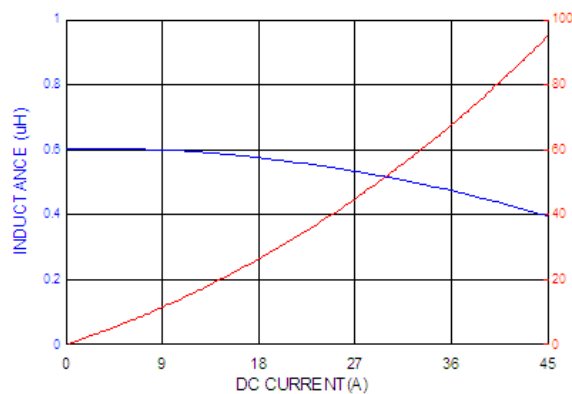
**ASPIAIG-F7020-R68**



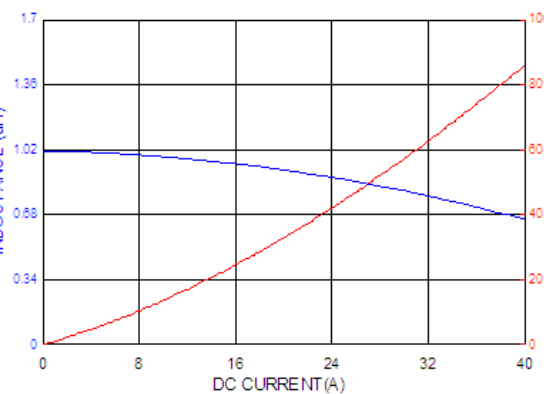
**ASPIAIG-F7020-1R0**



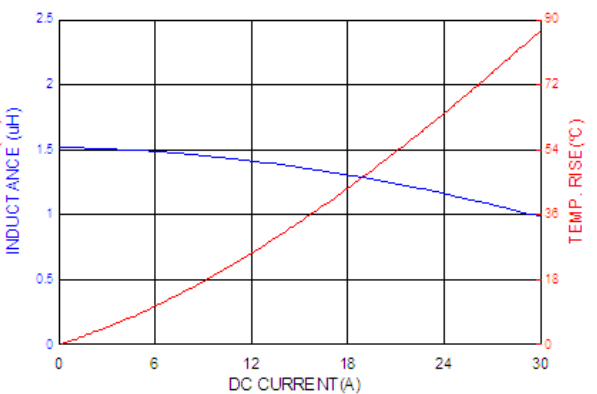
**ASPIAIG-F7030-R60**



**ASPIAIG-F7030-1R0**



**ASPIAIG-F7030-1R5**



# HIGH CURRENT SHIELDED SMD POWER INDUCTOR AIG

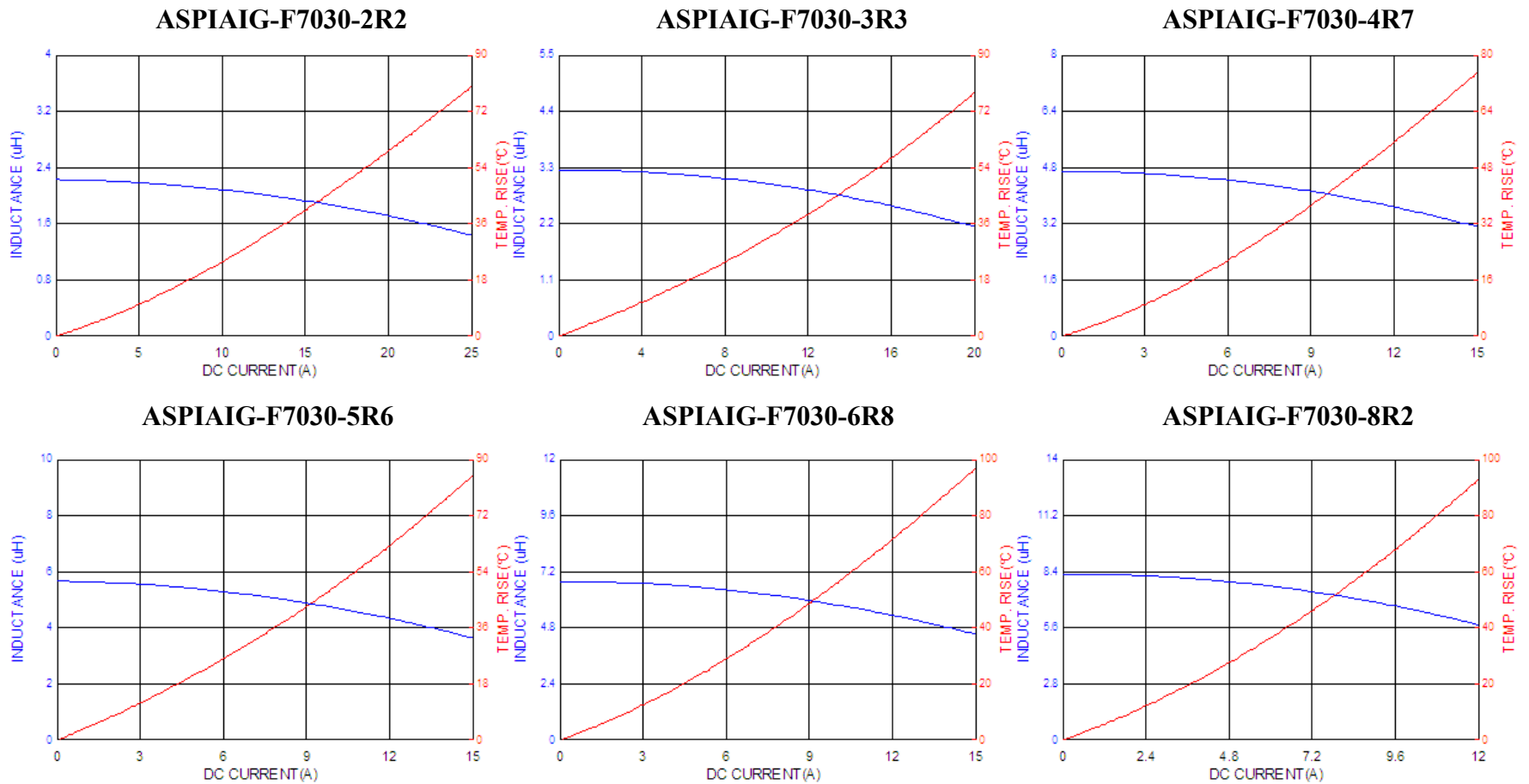


## ASPIAIG-F SERIES

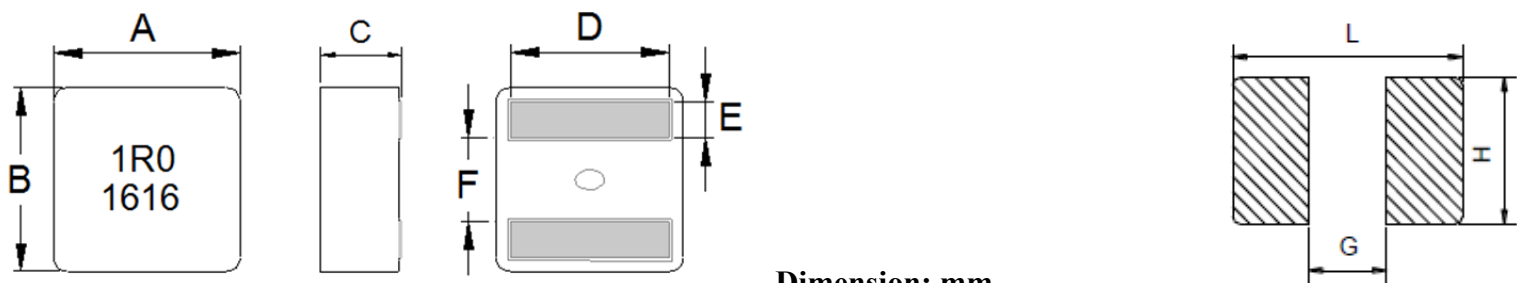
Dimensions vary  
MSL = 1



### ELECTRICAL SPECIFICATIONS



### MECHANICAL DIMENSIONS



Dimension: mm

SERIES	A	B	C	D	E	F
ASPIAIG-F4020	4.1 ± 0.2	4.1 ± 0.2	1.9 ± 0.2	3.4 ± 0.3	0.88 ± 0.2	1.6 ± 0.25
ASPIAIG-FLR4020	4.1 ± 0.2	4.1 ± 0.2	1.9 ± 0.2	3.4 ± 0.3	0.88 ± 0.2	1.6 ± 0.25
ASPIAIG-F5020	5.5 ± 0.2	5.3 ± 0.2	1.9 ± 0.2	4.3 ± 0.3	1.1 ± 0.2	2.3 ± 0.25
ASPIAIG-F5030	5.5 ± 0.2	5.3 ± 0.2	2.9 ± 0.2	4.3 ± 0.3	1.1 ± 0.2	2.3 ± 0.25
ASPIAIG-F6030	6.6 ± 0.2	6.4 ± 0.2	2.8 ± 0.2	5.3 ± 0.3	1.4 ± 0.2	2.6 ± 0.25
ASPIAIG-F6050	6.6 ± 0.2	6.4 ± 0.2	4.8 ± 0.2	5.3 ± 0.3	1.4 ± 0.2	2.6 ± 0.25
ASPIAIG-F7020	7.8 ± 0.25	7.6 ± 0.2	1.85 ± 0.2	SEE SPEC TABLE	1.75 ± 0.2	3.15 ± 0.25
ASPIAIG-F7030	7.8 ± 0.25	7.6 ± 0.2	2.90 ± 0.2	SEE SPEC TABLE	1.75 ± 0.2	3.15 ± 0.25

SERIES	L typ	G typ	H typ
ASPIAIG-F4020	3.4	1.4	3.8
ASPIAIG-FLR4020			
ASPIAIG-F5020	4.5	2.0	4.7
ASPIAIG-F5030			
ASPIAIG-F6030	5.6	2.5	5.6
ASPIAIG-F6050			
ASPIAIG-F7020	2.8	7.2	7.4
ASPIAIG-F7030			

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# HIGH CURRENT SHIELDED SMD POWER INDUCTOR AIG

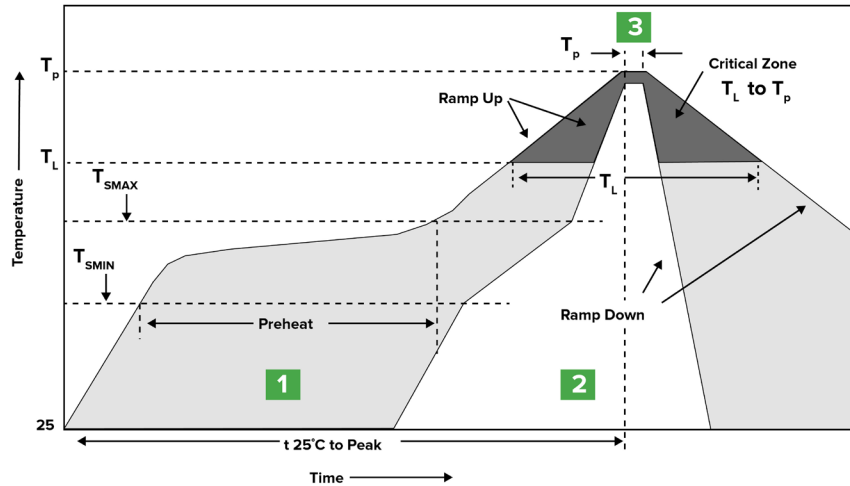


## ASPIAIG-F SERIES

Dimensions vary  
MSL = 1

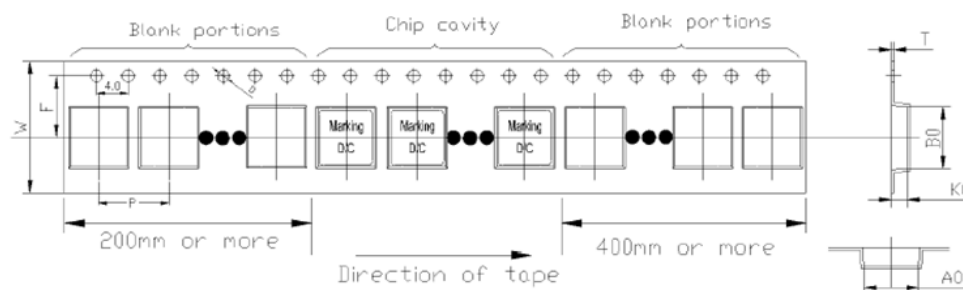


### REFLOW

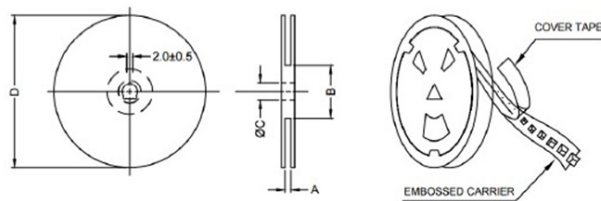


Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 180°C	120 ~ 180 sec.
2	Reflow	$T_L$ 217°C	60 ~ 150 sec.
3	Peak heat	$T_P$ 245°C	5 sec. MAX

### PACKING (TAPE & REEL)



SERIES	W	F	P	D	A0	B0	T	K0
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
ASPIAIG-FLR4020	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
ASPIAIG-F5020	12.0±0.3	7.5±0.1	8.0±0.1	1.5±0.1	5.7±0.1	6.0 ±0.1	0.35±0.05	2.3±0.1
ASPIAIG-F5030	16.0±0.3	7.5±0.1	8.0±0.1	1.5±0.1	5.8±0.1	5.6 ±0.1	0.35±0.05	3.3±0.1
ASPIAIG-F6030	16.0±0.3	7.5±0.1	12.0±0.1	1.5±0.1	6.8±0.1	7.0 ±0.1	0.35±0.1	3.3±0.1
ASPIAIG-F6050	16.0±0.3	7.5±0.1	12.0±0.1	1.5±0.1	6.8±0.1	7.0 ±0.1	0.35±0.1	5.3±0.1
ASPIAIG-F7020	16.0±0.3	7.5±0.1	12.0±0.1	1.5±0.1	8.2±0.1	8.0 ±0.1	0.35±0.1	2.3±0.1
ASPIAIG-F7030	16.0±0.3	7.5±0.1	12.0±0.1	1.5±0.1	8.2±0.1	8.0 ±0.1	0.35±0.1	3.3±0.1



Dimension: mm

SERIES	A	B	C	D
ASPIAIG-F4020	12.4+2/-0	100 ± 2	13.0+0.5/-0.2	330
ASPIAIG-FLR4020				
ASPIAIG-F5020				
ASPIAIG-F5030	16.4+2/-0	100 ± 2	13.0+0.5/-0.2	330
ASPIAIG-F6030				
ASPIAIG-F6050				
ASPIAIG-F7020				
ASPIAIG-F7030				

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