



SMD Molding Type Power Inductor

EMPI Series



Features

- Shielded construction
- Handles high transient current spikes without saturation
- Ultra low buzz noise, due to composite construction

Application

- Excellent for power line DC-DC conversion applications used in power switching, personal computers and other handheld electronic equipment

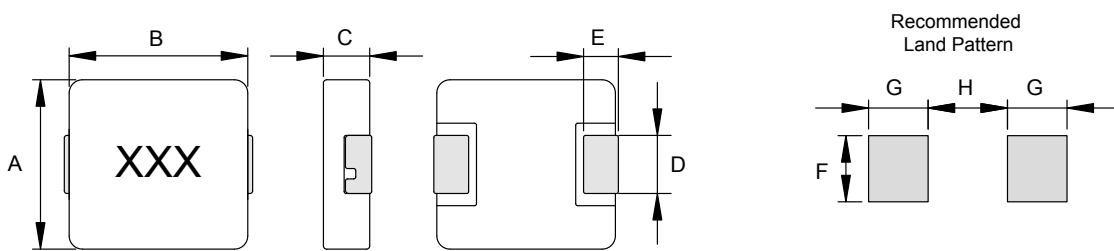
Part Numbering

EMPI 1004 - **1R0** **M** -

1
 2
 3
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 5
 6

- 1 Product Group
- 2 Dimension Code
- 3 Type Code
- 4 Inductance Code: R means decimal point
Ex: 1R0→1.0μH
- 5 Inductance Tolerance
M=±20%, N=±30%
- 6 Control Code

Shapes and Dimension



Unit: mm

Type	A	B	C	D	E	F	G	H
EMPI0603	6.6±0.3	7.1±0.3	3.0 (Max.)	3.0±0.3	1.6±0.5	3.50 (Typ.)	1.85 (Typ.)	3.70 (Typ.)
EMPI1004	10.5±0.5	11.5±1.0	4.0 (Max.)	3.0±0.5	2.5±0.5	4.00 (Typ.)	3.50 (Typ.)	6.00 (Typ.)
EMPI1250	12.8±0.5	13.5±1.0	5.0 (Max.)	3.8 (Ref.)	2.5 (Ref.)	5.00 (Typ.)	4.50 (Typ.)	6.00 (Typ.)

General Technical Data

Operating Temperature Range	-40°C~+85°C
Storage Temperature	40°C Max. , 70%RHMax.

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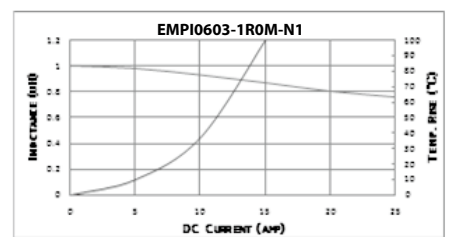
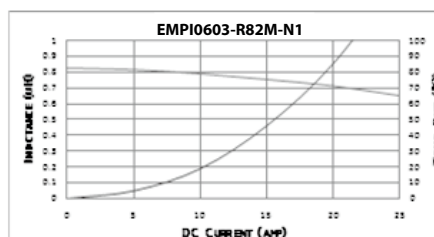
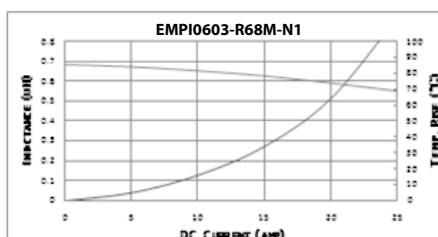
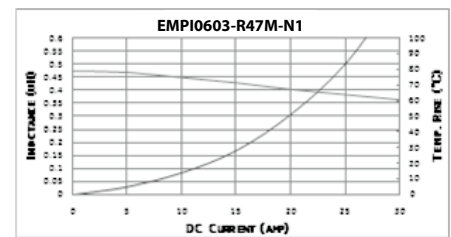
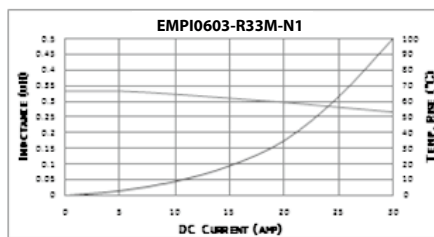
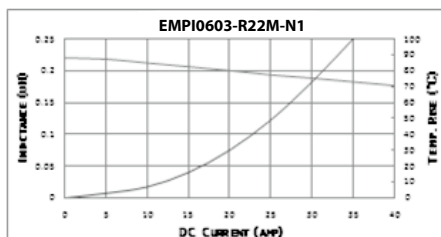
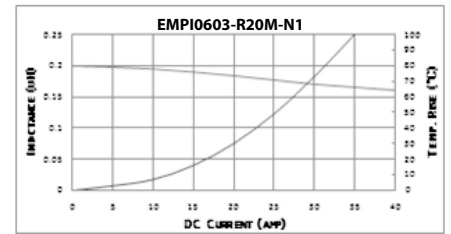
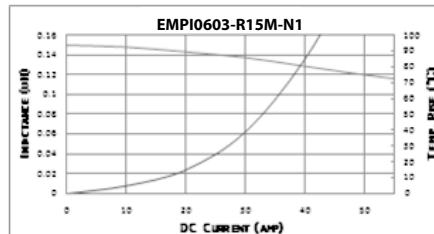
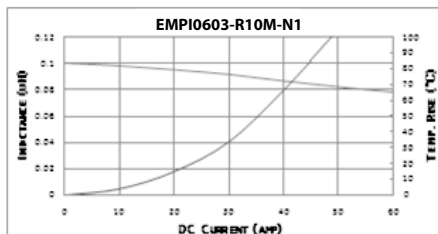
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EMPI Series

Electrical Characteristics

Part Number	Inductance	Test Frequency	Max. of DC Resistance	Saturation Current	Temperature Rise Current
EMPI0603 Series					
EMPI0603-R10M-N1	0.10 $\mu\text{H} \pm 20\%$	100KHz	1.7 mohm	60.0 A	32.5 A
EMPI0603-R15M-N1	0.15 $\mu\text{H} \pm 20\%$	100KHz	2.5 mohm	52.0 A	26.0 A
EMPI0603-R20M-N1	0.20 $\mu\text{H} \pm 20\%$	100KHz	3.0 mohm	41.0 A	24.0 A
EMPI0603-R22M-N1	0.22 $\mu\text{H} \pm 20\%$	100KHz	2.8 mohm	40.0 A	23.0 A
EMPI0603-R33M-N1	0.33 $\mu\text{H} \pm 20\%$	100KHz	3.9 mohm	30.0 A	20.0 A
EMPI0603-R47M-N1	0.47 $\mu\text{H} \pm 20\%$	100KHz	4.2 mohm	26.0 A	17.5 A
EMPI0603-R68M-N1	0.68 $\mu\text{H} \pm 20\%$	100KHz	5.5 mohm	25.0 A	15.5 A
EMPI0603-R82M-N1	0.82 $\mu\text{H} \pm 20\%$	100KHz	8.0 mohm	24.0 A	13.0 A
EMPI0603-1R0M-N1	1.00 $\mu\text{H} \pm 20\%$	100KHz	10.0 mohm	22.0 A	11.0 A
EMPI0603-1R5M-N1	1.50 $\mu\text{H} \pm 20\%$	100KHz	15.0 mohm	18.0 A	9.00 A
EMPI0603-1R8M-N1	1.80 $\mu\text{H} \pm 20\%$	100KHz	15.0 mohm	18.0 A	9.00 A
EMPI0603-2R2M-N1	2.20 $\mu\text{H} \pm 20\%$	100KHz	20.0 mohm	14.0 A	8.00 A
EMPI0603-3R3M-N1	3.30 $\mu\text{H} \pm 20\%$	100KHz	30.0 mohm	13.5 A	6.00 A
EMPI0603-4R7M-N1	4.70 $\mu\text{H} \pm 20\%$	100KHz	40.0 mohm	10.0 A	5.50 A
EMPI0603-6R8M-N1	6.80 $\mu\text{H} \pm 20\%$	100KHz	60.0 mohm	8.00 A	4.50 A
EMPI0603-8R2M-N1	8.20 $\mu\text{H} \pm 20\%$	100KHz	68.0 mohm	7.50 A	4.00 A
EMPI0603-100M-N1	10.0 $\mu\text{H} \pm 20\%$	100KHz	105.0 mohm	7.00 A	3.00 A

- Saturation Current for Inductance becomes 30% lower than its initial value
- Temperature Rise Current for a 40°C rise above 25°C ambient



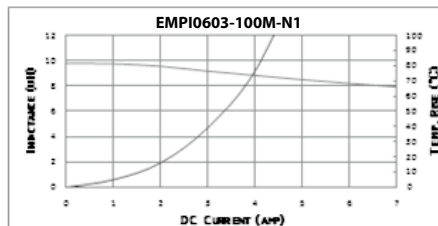
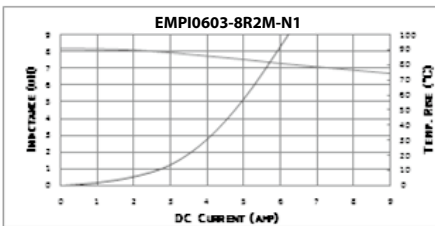
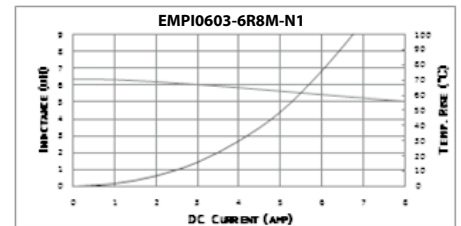
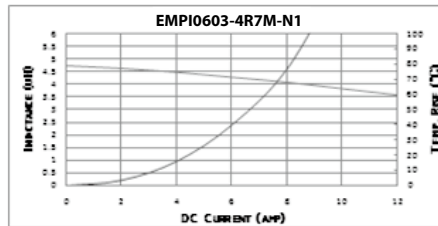
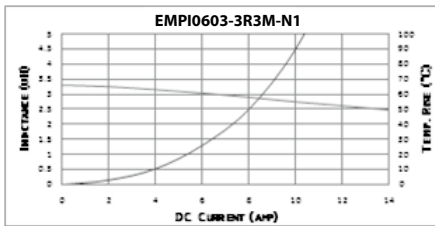
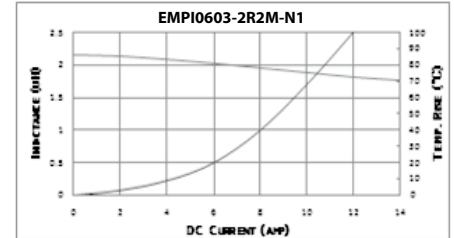
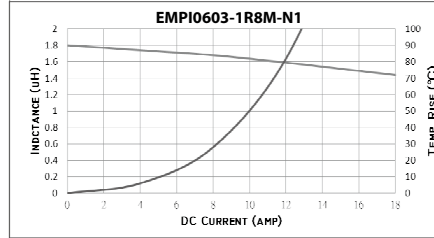
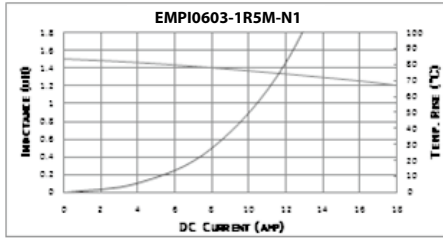
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EMPI1004 Series					
EMPI1004-R19M-N1	0.19 µH±20%	100KHz	0.60 mohm	44.0 A	44.0 A
EMPI1004-R24M-N1	0.24 µH±20%	100KHz	0.80 mohm	38.0 A	38.0 A
EMPI1004-R36M-N1	0.36 µH±20%	100KHz	0.95 mohm	35.0 A	35.0 A
EMPI1004-R47M-N1	0.47 µH±20%	100KHz	1.40 mohm	32.0 A	32.0 A
EMPI1004-R56M-N1	0.56 µH±20%	100KHz	1.50 mohm	30.0 A	30.0 A
EMPI1004-R78M-N1	0.78 µH±20%	100KHz	1.70 mohm	25.0 A	25.0 A
EMPI1004-1R0M-N1	1.00 µH±20%	100KHz	2.50 mohm	21.0 A	21.0 A
EMPI1004-1R8M-N1	1.80 µH±20%	100KHz	5.00 mohm	15.0 A	15.0 A
EMPI1004-2R2M-N1	2.20 µH±20%	100KHz	6.30 mohm	16.0 A	14.0 A
EMPI1004B-3R3M-N1	3.30 µH±20%	100KHz	11.80 mohm	18.6 A	10.0 A
EMPI1004B-4R7M-N1	4.70 µH±20%	100KHz	16.50 mohm	17.0 A	9.50 A
EMPI1004B-5R6M-N1	5.60 µH±20%	100KHz	19.30 mohm	16.0 A	8.50 A
EMPI1004B-6R8M-N1	6.80 µH±20%	100KHz	23.30 mohm	13.5 A	8.00 A
EMPI1004B-8R2M-N1	8.20 µH±20%	100KHz	34.00 mohm	12.5 A	7.00 A
EMPI1004B-100M-N1	10.0 µH±20%	100KHz	36.50 mohm	12.0 A	6.80 A
EMPI1004C-150M-N1	15.0 µH±20%	100KHz	45.00 mohm	6.00 A	6.25 A
EMPI1004C-220M-N1	22.0 µH±20%	100KHz	66.00 mohm	4.50 A	5.00 A
EMPI1004C-330M-N1	33.0 µH±20%	100KHz	94.50 mohm	4.00 A	4.40 A
EMPI1004C-470M-N1	47.0 µH±20%	100KHz	145.00 mohm	3.00 A	4.00 A
EMPI1004C-101M-N1	100.0µH±20%	100KHz	270.00 mohm	2.25 A	3.00 A

- Saturation Current for Inductance becomes 30% lower than its initial value
- Temperature Rise Current for a 40°C rise above 25°C ambient

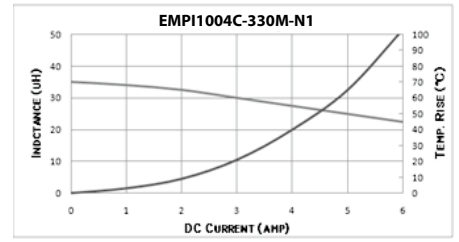
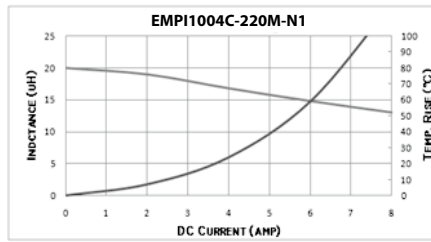
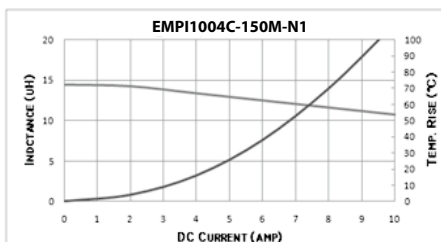
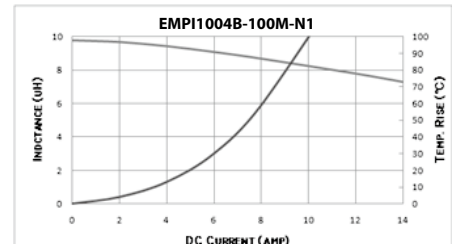
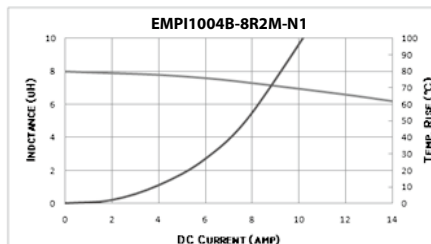
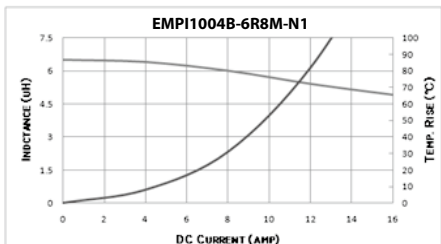
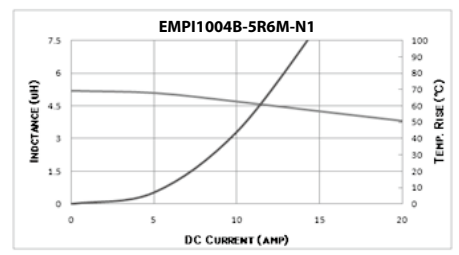
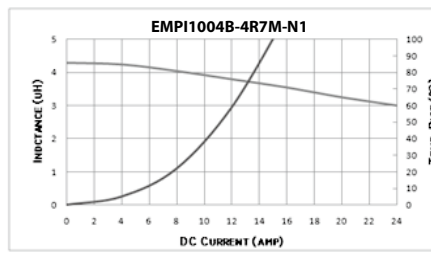
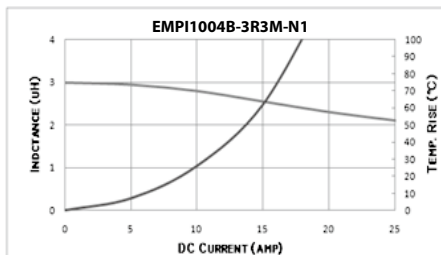
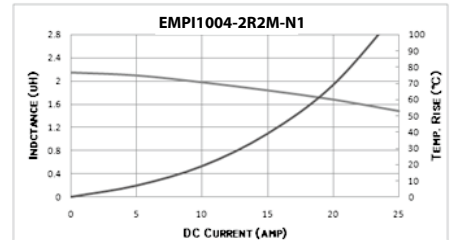
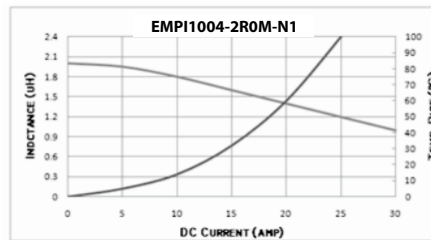
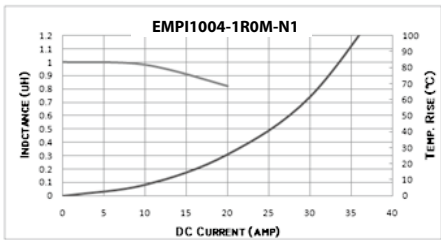
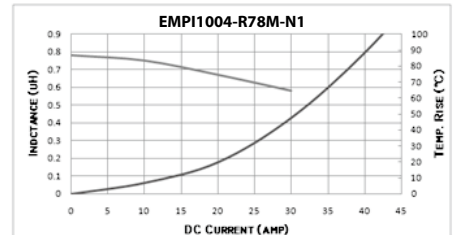
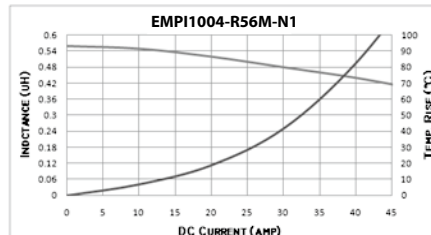
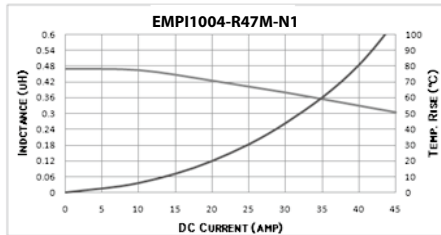
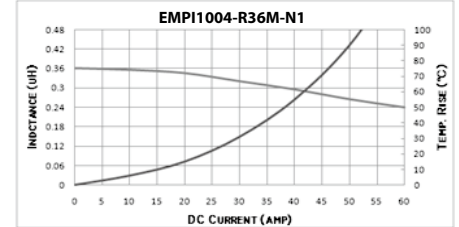
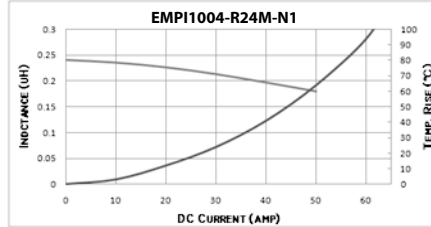
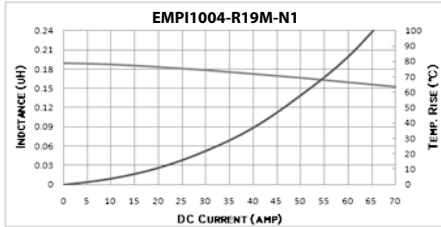
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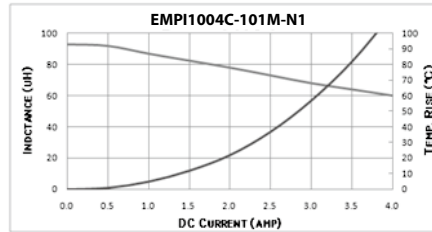
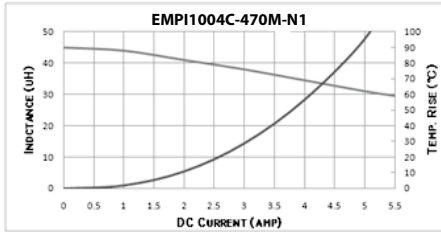
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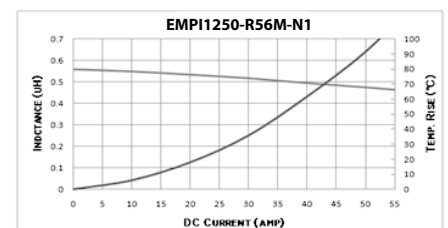
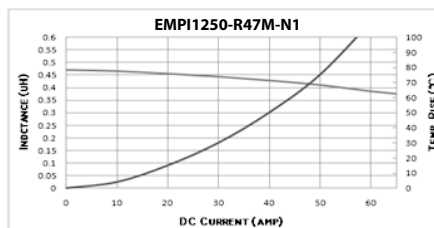
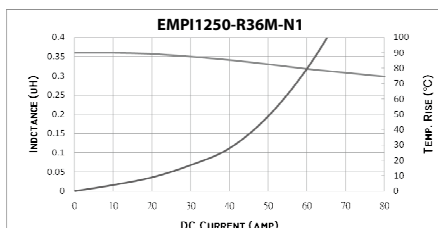
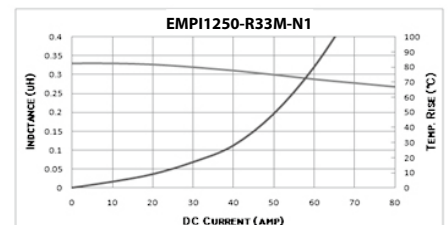
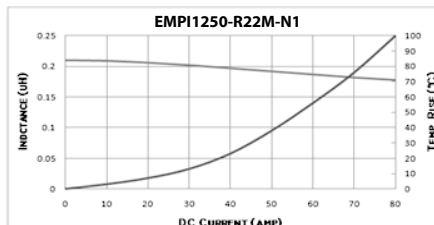
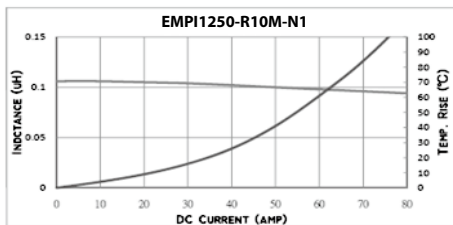
EMPI Series

Electrical Characteristics



Part Number	Inductance	Test Frequency	Max. of DC Resistance	Saturation Current	Temperature Rise Current
EMPI1250 Series					
EMPI1250-R10M-N1	0.10 $\mu\text{H} \pm 20\%$	100KHz	0.6 mohm	118.0 A	55.0 A
EMPI1250-R22M-N1	0.22 $\mu\text{H} \pm 20\%$	100KHz	0.8 mohm	110.0 A	51.0 A
EMPI1250-R33M-N1	0.33 $\mu\text{H} \pm 20\%$	100KHz	1.1 mohm	80.0 A	42.0 A
EMPI1250-R36M-N1	0.36 $\mu\text{H} \pm 20\%$	100KHz	1.1 mohm	80.0 A	42.0 A
EMPI1250-R47M-N1	0.47 $\mu\text{H} \pm 20\%$	100KHz	1.3 mohm	65.0 A	38.0 A
EMPI1250-R56M-N1	0.56 $\mu\text{H} \pm 20\%$	100KHz	1.5 mohm	55.0 A	36.0 A
EMPI1250-R68M-N1	0.68 $\mu\text{H} \pm 20\%$	100KHz	1.7 mohm	54.0 A	34.0 A
EMPI1250-R82M-N1	0.82 $\mu\text{H} \pm 20\%$	100KHz	2.3 mohm	53.0 A	31.0 A
EMPI1250-1R0M-N1	1.00 $\mu\text{H} \pm 20\%$	100KHz	2.5 mohm	50.0 A	29.0 A
EMPI1250-1R2M-N1	1.20 $\mu\text{H} \pm 20\%$	100KHz	3.5 mohm	49.0 A	25.0 A
EMPI1250-1R5M-N1	1.50 $\mu\text{H} \pm 20\%$	100KHz	4.1 mohm	48.0 A	23.0 A
EMPI1250-1R8M-N1	1.80 $\mu\text{H} \pm 20\%$	100KHz	4.9 mohm	40.0 A	19.0 A
EMPI1250-2R2M-N1	2.20 $\mu\text{H} \pm 20\%$	100KHz	5.8 mohm	32.0 A	20.0 A
EMPI1250-3R3M-N1	3.30 $\mu\text{H} \pm 20\%$	100KHz	9.2 mohm	32.0 A	15.0 A
EMPI1250-4R7M-N1	4.70 $\mu\text{H} \pm 20\%$	100KHz	15.0 mohm	27.0 A	12.0 A
EMPI1250-5R6M-N1	5.60 $\mu\text{H} \pm 20\%$	100KHz	16.5 mohm	22.0 A	11.5 A
EMPI1250-6R8M-N1	6.80 $\mu\text{H} \pm 20\%$	100KHz	18.5 mohm	21.0 A	11.0 A
EMPI1250-8R2M-N1	8.20 $\mu\text{H} \pm 20\%$	100KHz	22.5 mohm	18.0 A	9.5 A
EMPI1250-100M-N1	10.0 $\mu\text{H} \pm 20\%$	100KHz	25.5 mohm	16.0 A	9.0 A

- Saturation Current for Inductance becomes 30% lower than its initial value
- Temperature Rise Current for a 40°C rise above 25°C ambient



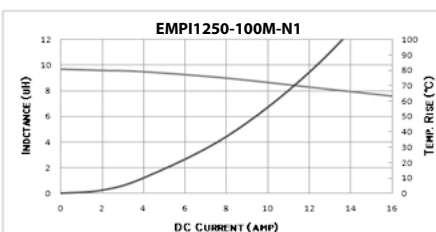
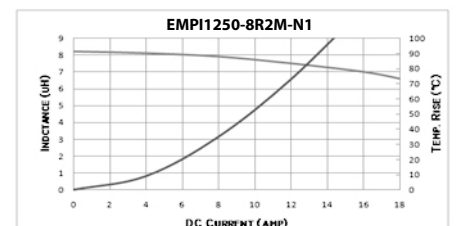
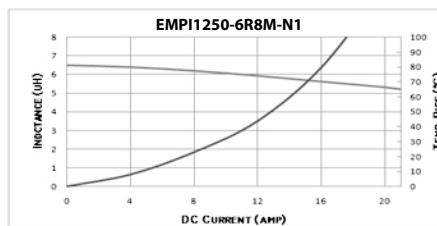
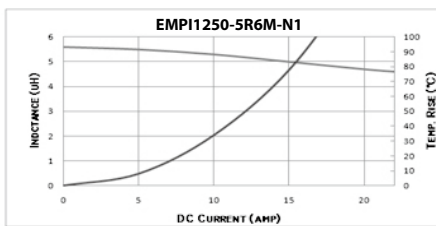
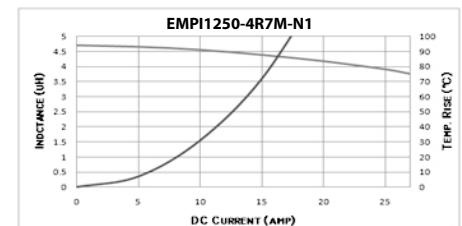
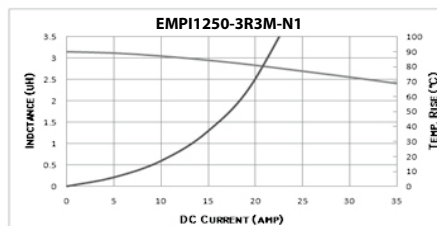
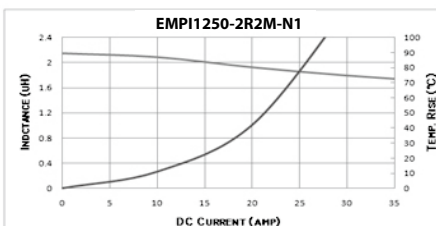
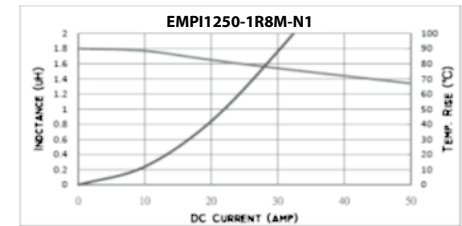
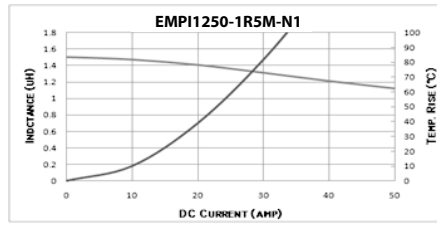
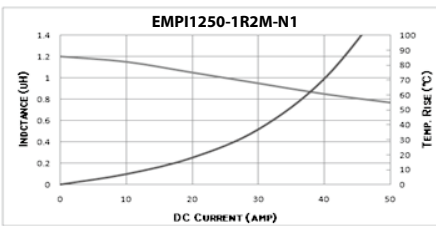
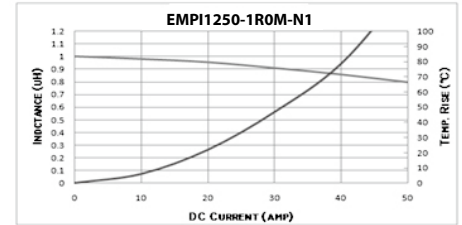
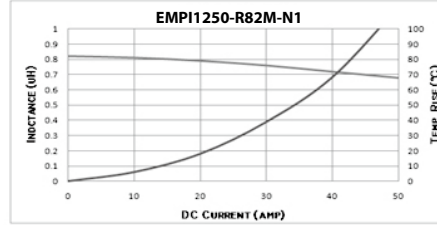
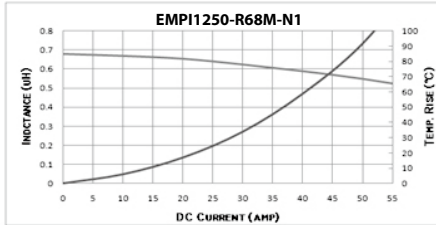
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- The catalog has only typical specifications because there is no space for detailed specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.



SMD Molding Type Power Inductor

EMPI Series

Electrical Characteristics



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