



### APPLICATIONS

- Battery-Powered Devices
- High-Efficiency SMPS
- Embedded Computing
- Input Filters

### FEATURES

- Size 4mmx4mmx3mm
- Semi-Shielded Construction
- Low DCR
- Low Stray Field
- Max Operating Temp +125°C
- RoHS/REACH-Compliant, Halogen-Free

### ELECTRICAL CHARACTERISTICS

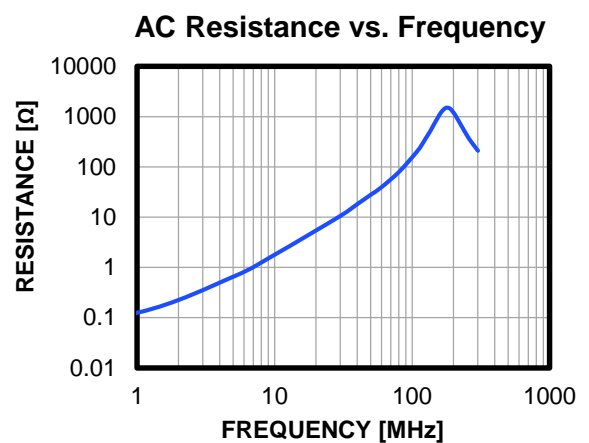
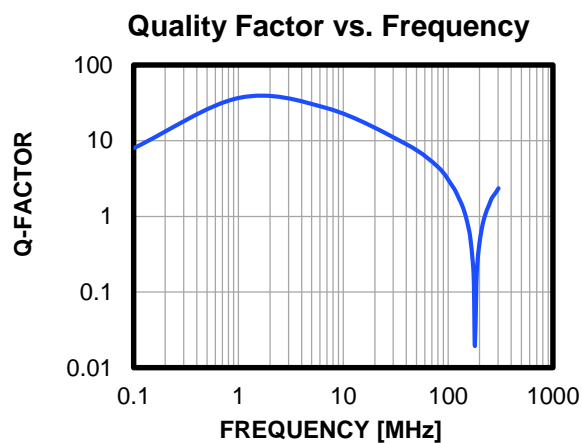
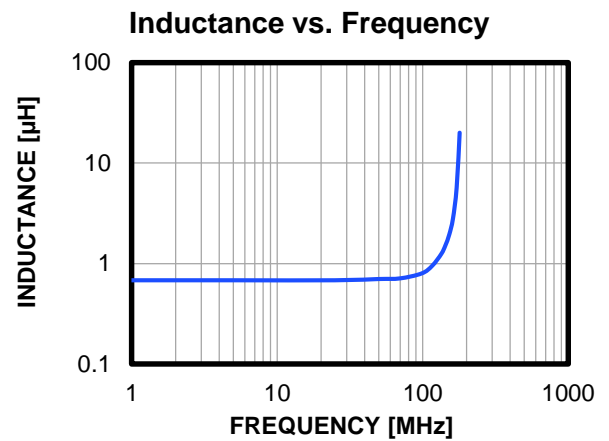
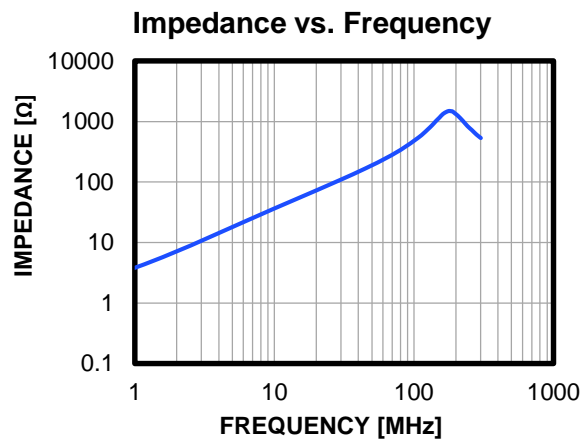
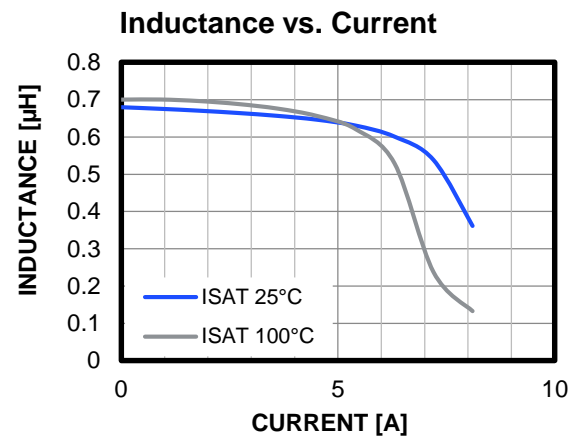
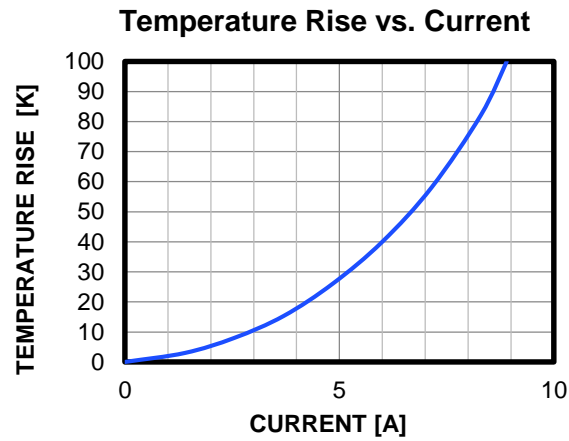
Parameter			Value	Unit
Inductance <sup>(1)</sup>	$L$	±20%	0.68	μH
Resistance	$R_{DC}$	Typ	10	mΩ
Resistance MAX	$R_{DC\ MAX}$	Max	12	mΩ
Rated Current <sup>(2)</sup>	$I_R$	Typ	6	A
Saturation Current 25°C <sup>(3)</sup>	$I_{SAT\ 25^\circ C}$	Typ	7.5	A
Saturation Current 100°C <sup>(4)</sup>	$I_{SAT\ 100^\circ C}$	Typ	6.5	A
Resonance Frequency	$f_r$	Typ	180	MHz

### GENERAL SPECIFICATIONS

<sup>(1)</sup> Inductance	Measured at 100kHz, 100mA
<sup>(2)</sup> Rated Current	Rated current will cause the coil temperature rise $\Delta T$ of 40K $I_R$ measured with the inductor soldered in a single-layer PCB. Copper layer thickness 35μm Cu / PCB size 30x50mm. Temperature behavior dependent on circuit design, PCB layout, proximity to other components, and trace dimensions and thickness.
<sup>(3)</sup> Saturation Current 25°C	Saturation current will cause L to drop from 30% at 25°C ambient temperature
<sup>(4)</sup> Saturation Current 100°C	Saturation current will cause L to drop from 30% at 100°C ambient temperature
Temperature Test Condition	Electrical specifications measured at 25°C, 35% RH if not given differently
Operating Condition	Operating temperature: -40°C to +125°C (including temp rise) Should not exceed +125°C under worst-case operation conditions
Storage Condition	Tape and Reel packaging: -10°C to +40°C Humidity: <50% RH

All MPS parts are lead-free, halogen-free, and adhere to the RoHS directive. For MPS green status, please visit the MPS website under Quality Assurance. "MPS", the MPS logo, and "Simple, Easy Solutions" are registered trademarks of Monolithic Power Systems, Inc. or its subsidiaries.

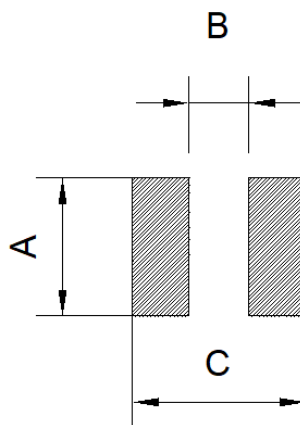
## TYPICAL PERFORMANCE CURVES



## LAND PATTERN

### Dimensions

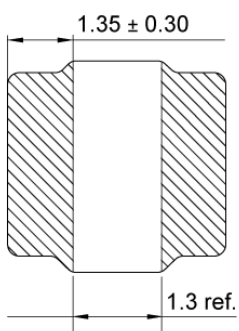
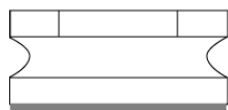
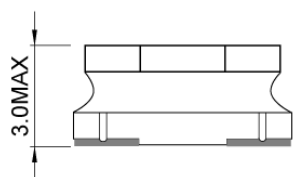
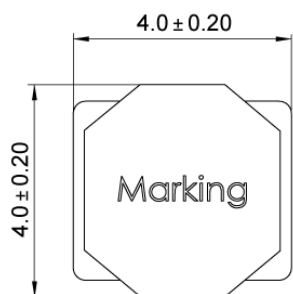
A	4.50 ref.
B	1.50 ref.
C	4.50 ref. (units in mm)



## PRODUCT PACKAGE AND DIMENSIONS

### Dimensions

(units in mm)



## TOP MARKING

### Marking

Inductance Code

R68

## ORDERING INFORMATION

Part Number	$L^{(1)}$ ±20% (μH)	$R_{DC}$ Typ (mΩ)	$I_R^{(2)}$ Typ (A)	$I_{SAT\ 25^\circ C}^{(3)}$ Typ (A)	$I_{SAT\ 100^\circ C}^{(4)}$ Typ (A)
MPL-SE4030-R68	0.68	10	6	7.5	6.5
MPL-SE4030-1R0	1	14	5.5	7	5.7
MPL-SE4030-2R2	2.2	30	3.7	5.5	4.2
MPL-SE4030-3R3	3.3	40	3.3	4.1	3.6
MPL-SE4030-4R7	4.7	62	2.6	3.4	2.7
MPL-SE4030-6R8	6.8	90	2.2	2.9	2.2
MPL-SE4030-100	10	100	2	2.2	1.75
MPL-SE4030-150	15	185	1.4	1.8	1.47
MPL-SE4030-220	22	220	1.3	1.5	1.12
MPL-SE4030-330	33	330	1.1	1.2	0.97
MPL-SE4030-470	47	480	0.9	1	0.82

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<b>(1) Inductance</b>	Measured at 100kHz, 100mA
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<b>(3) Saturation Current <math>25^\circ C</math></b>	Saturation current will cause L to drop from 30% at $25^\circ C$ ambient temperature
<b>(4) Saturation Current <math>100^\circ C</math></b>	Saturation current will cause L to drop from 30% at $100^\circ C$ ambient temperature
<b>Temperature Test Condition</b>	Electrical specifications measured at $25^\circ C$ , 35% RH if not given differently
<b>Operating Condition</b>	Operating temperature: $-40^\circ C$ to $+125^\circ C$ (including temp rise) Should not exceed $+125^\circ C$ under worst-case operation conditions
<b>Storage Condition</b>	Tape and Reel packaging: $-10^\circ C$ to $+40^\circ C$ Humidity: <50% RH

## REVISION HISTORY

Revision #	Revision Date	Description	Pages Updated
1.0	9/19/2022	Initial Release	-

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