

### 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

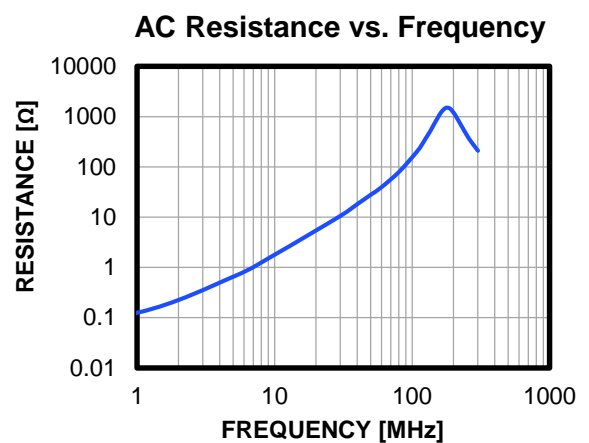
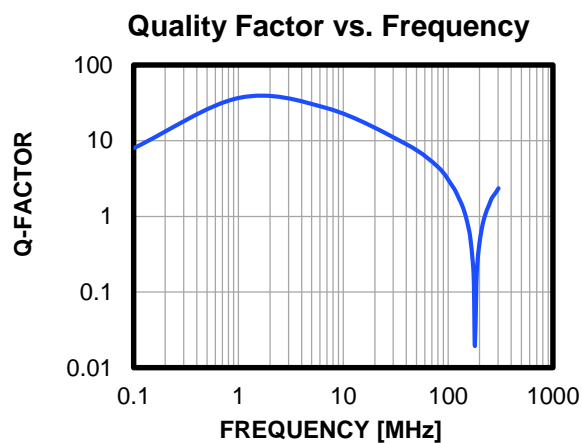
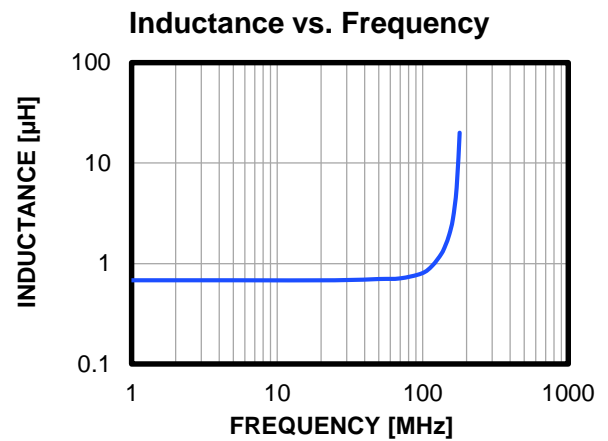
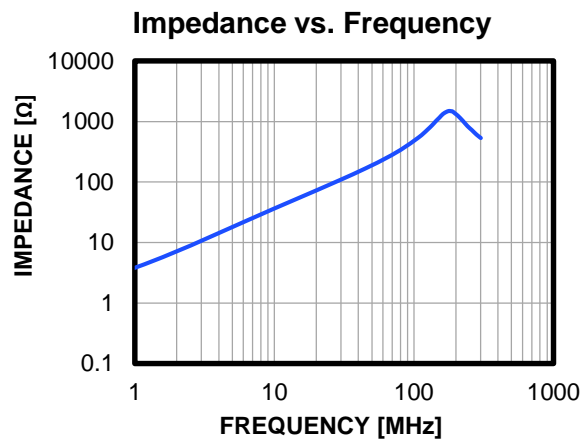
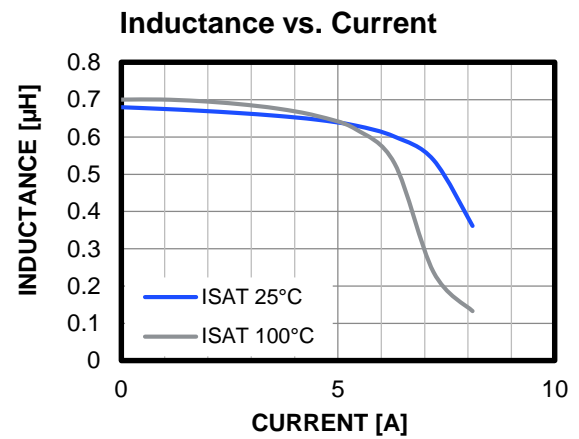
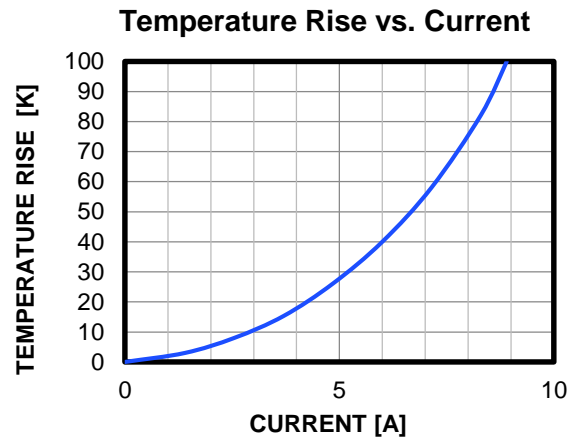
Parameter			Value	Unit
Inductance <sup>(1)</sup>	$L$	±20%	0.68	μH
Resistance	$R_{DC}$	Typ	10	mΩ
Resistance $_{MAX}$	$R_{DC\ MAX}$	Max	12	mΩ
Rated Current <sup>(2)</sup>	$I_R$	Typ	6	A
Saturation Current $_{25^{\circ}C}$ <sup>(3)</sup>	$I_{SAT\ 25^{\circ}C}$	Typ	7.5	A
Saturation Current $_{100^{\circ}C}$ <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 $_{25^{\circ}C}$	Saturation current will cause L to drop from 30% at 25°C ambient temperature
<sup>(4)</sup> Saturation Current $_{100^{\circ}C}$	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

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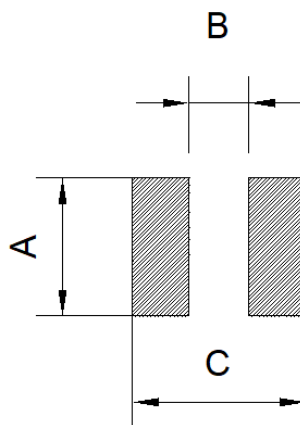
## TYPICAL PERFORMANCE CURVES



## LAND PATTERN

### Dimensions

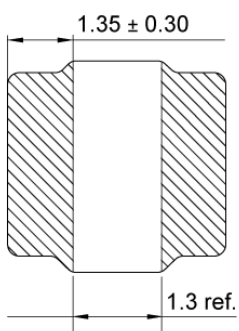
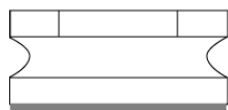
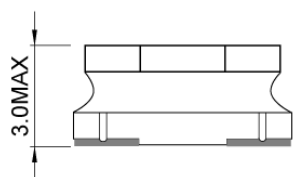
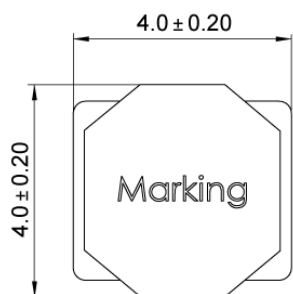
A	4.50 ref.
B	1.50 ref.
C	4.50 ref. (units in mm)



## PRODUCT PACKAGE AND DIMENSIONS

### Dimensions

(units in mm)



## TOP MARKING

### Marking

Inductance Code

R68

## ORDERING INFORMATION

Part Number	$L^{(1)}$	$R_{DC}$	$I_R^{(2)}$	$I_{SAT\ 25^{\circ}C}^{(3)}$	$I_{SAT\ 100^{\circ}C}^{(4)}$
	±20% (μH)	Typ (mΩ)	Typ (A)	Typ (A)	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

## GENERAL SPECIFICATIONS

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

## REVISION HISTORY

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

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