



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 ⁽¹⁾	L	$\pm 20\%$	47 μ H
Resistance	R_{DC}	Typ	480 m Ω
Resistance MAX	$R_{DC\ MAX}$	Max	540 m Ω
Rated Current ⁽²⁾	I_R	Typ	0.9 A
Saturation Current 25°C ⁽³⁾	$I_{SAT\ 25^{\circ}\text{C}}$	Typ	1 A
Saturation Current 100°C ⁽⁴⁾	$I_{SAT\ 100^{\circ}\text{C}}$	Typ	0.82 A
Resonance Frequency	f_r	Typ	12 MHz

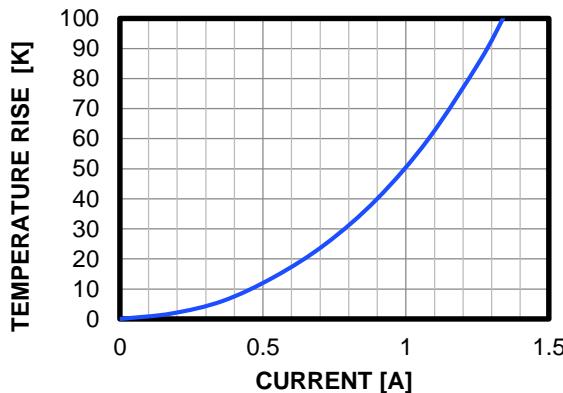
GENERAL SPECIFICATIONS

⁽¹⁾ Inductance	Measured at 100kHz, 100mA
⁽²⁾ Rated Current	Rated current will cause the coil temperature rise ΔT of 40K <i>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.</i>
⁽³⁾ Saturation Current 25°C	Saturation current will cause L to drop from 30% at 25°C ambient temperature
⁽⁴⁾ 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

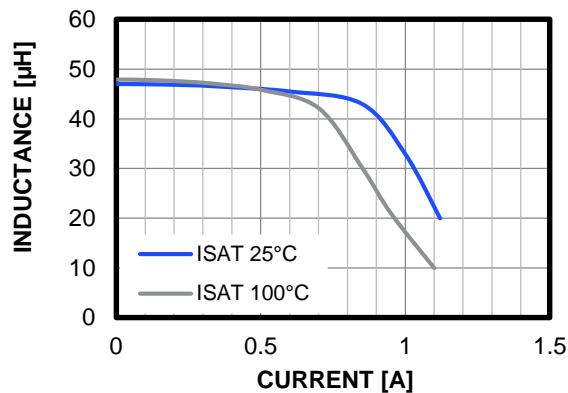
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TYPICAL PERFORMANCE CURVES

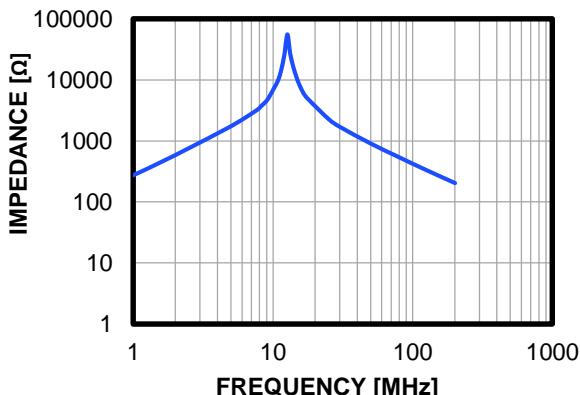
Temperature Rise vs. Current



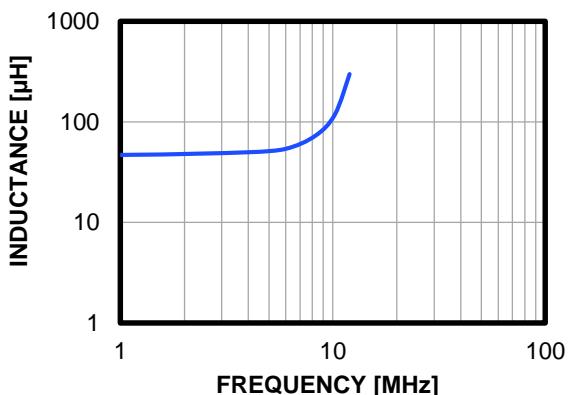
Inductance vs. Current



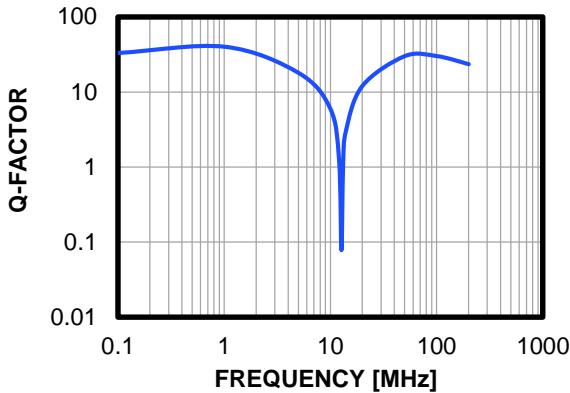
Impedance vs. Frequency



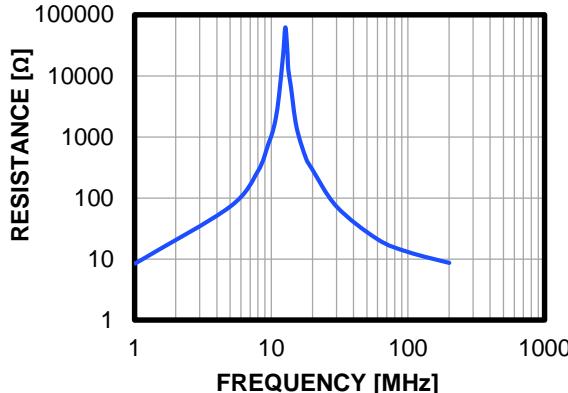
Inductance vs. Frequency



Quality Factor vs. Frequency

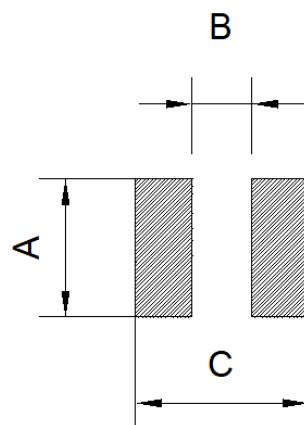


AC Resistance vs. Frequency

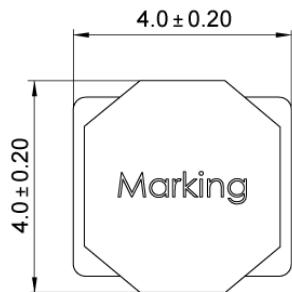


LAND PATTERN**Dimensions**

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

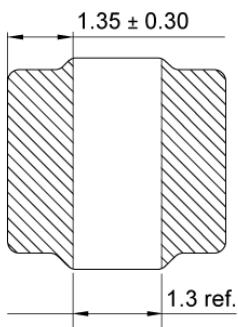
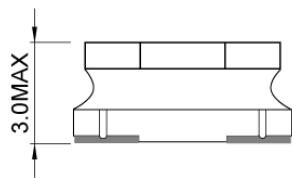
**PRODUCT PACKAGE AND DIMENSIONS****Dimensions**

(units in mm)

**TOP MARKING****Marking**

Inductance Code

470



ORDERING INFORMATION

Part Number	L ⁽¹⁾	R_{DC}	I_R ⁽²⁾	$I_{SAT\ 25^\circ C}$ ⁽³⁾	$I_{SAT\ 100^\circ C}$ ⁽⁴⁾
	$\pm 20\%$ (μ H)	Typ (m Ω)	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

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REVISION HISTORY

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

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