

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

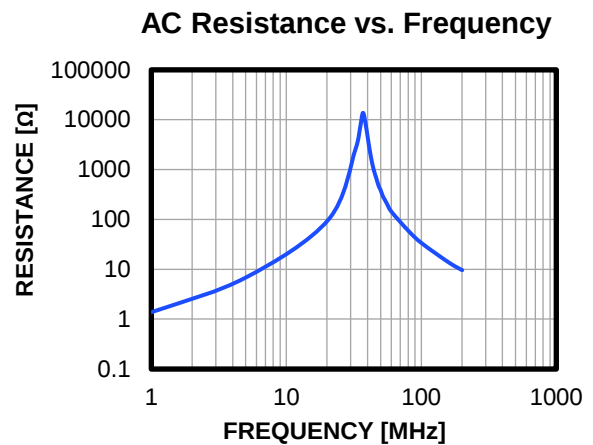
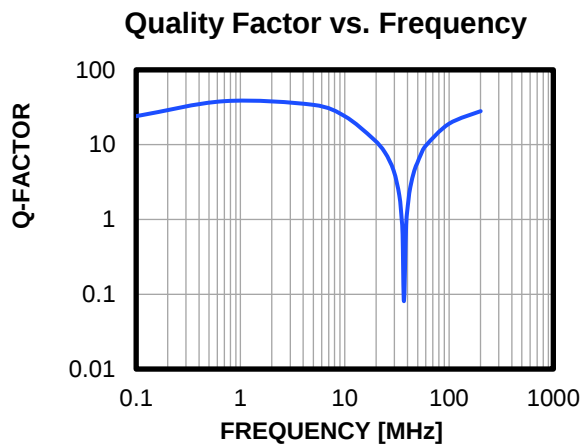
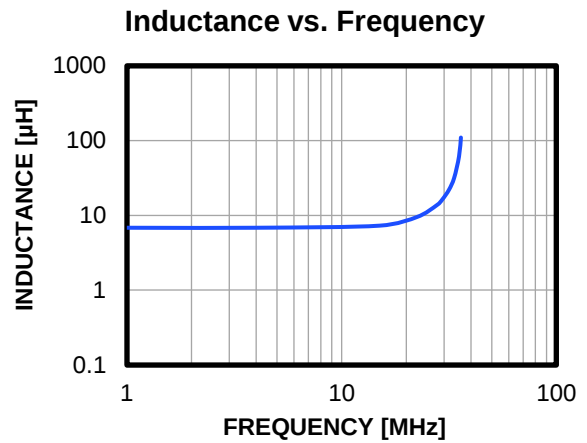
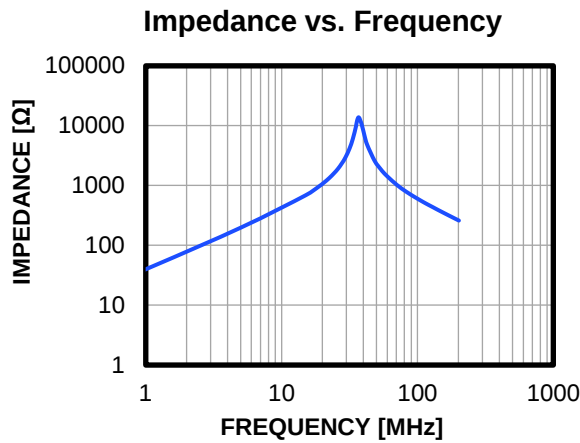
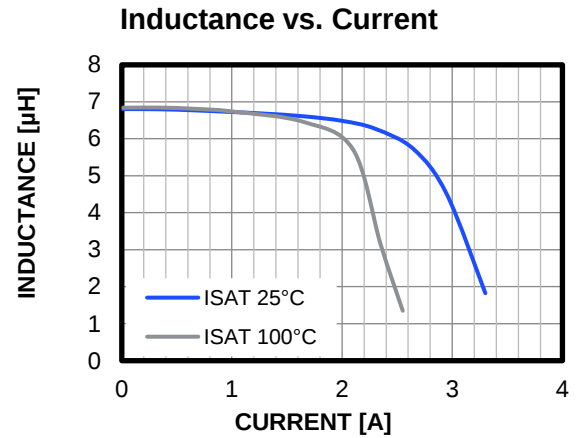
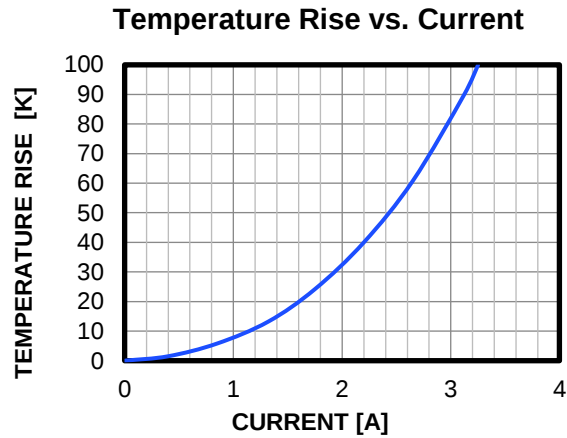
Parameter			Value	Unit
Inductance ⁽¹⁾	L	±20%	6.8	μH
Resistance	R_{DC}	Typ	90	mΩ
Resistance $_{MAX}$	$R_{DC MAX}$	Max	110	mΩ
Rated Current ⁽²⁾	I_R	Typ	2.2	A
Saturation Current $_{25^{\circ}C}$ ⁽³⁾	$I_{SAT 25^{\circ}C}$	Typ	2.9	A
Saturation Current $_{100^{\circ}C}$ ⁽⁴⁾	$I_{SAT 100^{\circ}C}$	Typ	2.2	A
Resonance Frequency	f_r	Typ	36	MHz

GENERAL SPECIFICATIONS

⁽¹⁾ Inductance	Measured at 100kHz, 100mA
⁽²⁾ Rated Current	Rated current will cause the coil temperature rise ΔT 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.
⁽³⁾ Saturation Current $_{25^{\circ}C}$	Saturation current will cause L to drop from 30% at 25°C ambient temperature
⁽⁴⁾ 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

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.

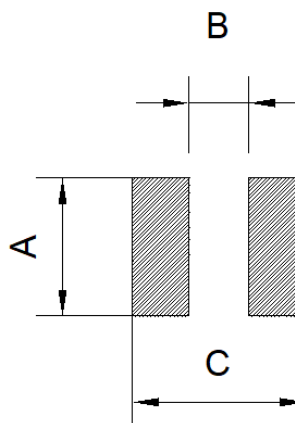
TYPICAL PERFORMANCE CURVES



LAND PATTERN

Dimensions

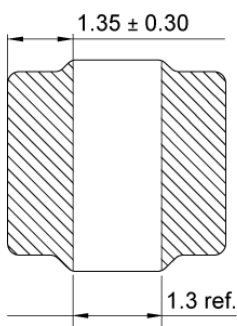
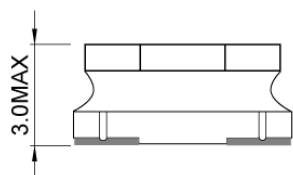
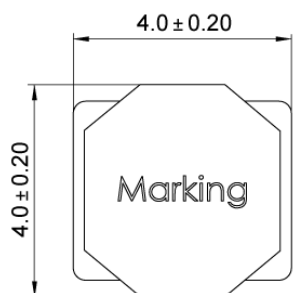
A	4.50 ref.
B	1.50 ref.
C	4.50 ref. (units in mm)



PRODUCT PACKAGE AND DIMENSIONS

Dimensions

(units in mm)



TOP MARKING

Marking

Inductance Code	6R8
-----------------	-----

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

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 $_{25^\circ C}$	Saturation current will cause L to drop from 30% at 25°C ambient temperature
(4) 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

REVISION HISTORY

Revision #	Revision Date	Description	Pages Updated
1.0	7/12/2019	Initial Release	-
1.1	7/31/2019	Updated Impedance vs. Frequency Curve	2
1.2	9/19/2022	Updated Electrical Characteristics	1
		Updated Typical Performance Curves	2
		Updated Land Pattern and Product Package Dimensions	3
		Updated Ordering Information	4
		Grammar and formatting updates	All

NOTICE: The information in this document is subject to change without notice. Please contact MPS for current specifications. Users should warrant and guarantee that third-party Intellectual Property rights are not infringed upon when integrating MPS products into any application. MPS will not assume any legal responsibility for any said applications.