

Semi-Shielded Inductor 3.3µH



APPLICATIONS

- Battery-powered devices
- IoT
- Wearable
- Portable devices
- Input filters

FEATURES

• Size 2mmx2.5mmx1.2mm

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

ELECTRICAL CHARACTERISTICS

Parameter			Value	Unit
Inductance ⁽¹⁾	L	±20%	3.3	μH
Resistance	R _{DC}	typ	158	mΩ
Resistance MAX	R DC MAX	max	189	mΩ
Rated Current ⁽²⁾	I _R	typ	1.8	Α
Saturation Current 25°C (3)	ISAT 25°C	typ	2.4	Α
Saturation Current 100°C (4)	ISAT 100°C	typ	2.4	Α
Resonance Frequency	f _r	typ	49	MHz

GENERAL SPECIFICATIONS

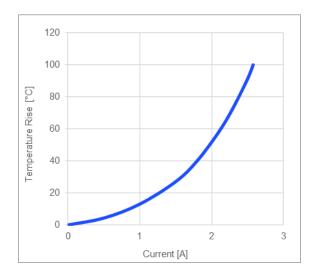
asured at 100kHz, 100mA
ed current will cause the coil temperature rise ΔT of 40K neasured with the inductor soldered in a single-layer PCB. Copper layer thickness m Cu / PCB size 30x50mm. Temperature behavior dependent on circuit design, B layout, proximity to other components, and trace dimensions and thickness.
uration current will cause L to drop from 30% at 25°C ambient temperature
uration current will cause L to drop from 30% at 100°C ambient temperature
ctrical specifications measured at 25°C, 35% RH if not given differently
erating temperature: -40°C to +125°C (including temp rise)
uld not exceed +125°C under worst-case operation conditions
e and Reel packaging: -10°C to +40°C nidity: <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.

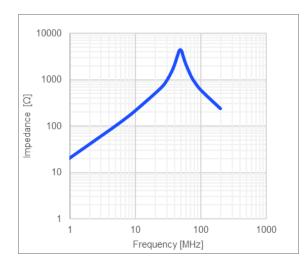
MPL-SE2512-3R3 – SEMI-SHIELDED INDUCTOR 3.3µH

TYPICAL PERFORMANCE CURVES





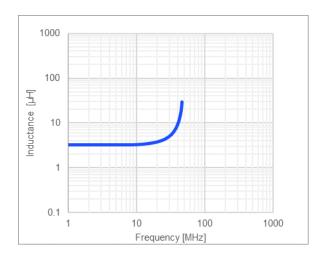
Impedance vs. Frequency



4 3.5 3 2.5 Inductance [µH] 2 1.5 1 0.5 ISAT 25°C ISAT 100°C 0 0 2 3 5 4 1 Current [A]

Inductance vs. Current

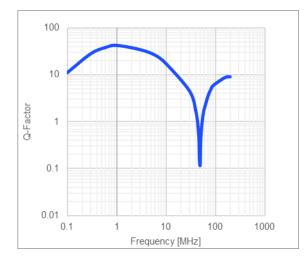
Inductance vs. Frequency

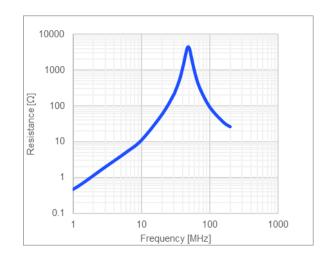




Quality Factor vs. Frequency

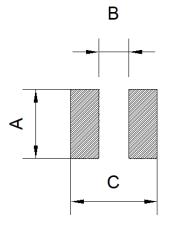
AC Resistance vs. Frequency





MPL-SE2512-3R3 – SEMI-SHIELDED INDUCTOR 3.3µH

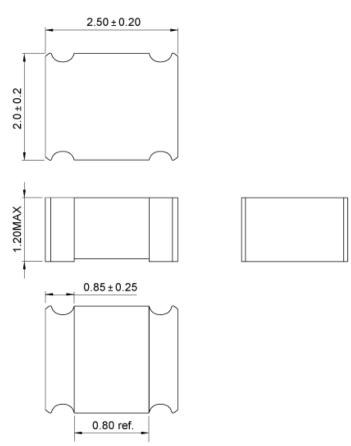
LAND PATTERN			
Dimensions			
A	2.10 ref.		
В	0.80 ref.		
С	2.60 ref.		
	(unit in mm)		



PRODUCT PACKAGE AND DIMENSIONS

Dimensions

(unit in mm)



ORDERING INFORMATION L (1) $I_{R}^{(2)}$ ISAT 25°C (3) ISAT 100°C (4) **R**_Dc **Part Number** typ (A) typ (A) typ (µH) typ (mΩ) typ (A) MPL-SE2512-R47 0.47 27 4.5 6.5 6.5 MPL-SE2512-R68 0.68 33 3.8 4.3 4.3 MPL-SE2512-1R0 1.0 45 3.35 4.2 4.2 MPL-SE2512-1R5 62 2.9 3.2 3.2 1.5 92 2.7 2.7 MPL-SE2512-2R2 2.2 2.5 MPL-SE2512-3R3 158 2.4 2.4 3.3 1.8 MPL-SE2512-4R7 4.7 205 1.6 1.9 1.9 MPL-SE2512-100 10 400 1.1 1.3 1.3 MPL-SE2512-150 620 0.85 0.9 0.9 15 MPL-SE2512-220 22 1000 0.70 0.8 0.8

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°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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