

Semi-Shielded Inductor 22µH



### **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**

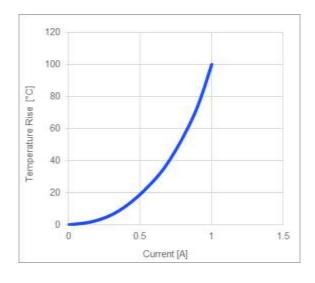
Parameter			Value	Unit
Inductance <sup>(1)</sup>	L	<b>±20%</b>	22	μH
Resistance	RDC	Тур	885	mΩ
Resistance MAX	RDC MAX	Max	1050	mΩ
Rated Current <sup>(2)</sup>	<b>I</b> R	Тур	0.70	Α
Saturation Current <sub>25°C</sub> <sup>(3)</sup>	ISAT 25°C	Тур	0.80	Α
Saturation Current 100°C (4)	<b>I</b> SAT 100℃	Тур	0.80	Α
<b>Resonance Frequency</b>	fr	Тур	14	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 35 $\mu$ m 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 otherwise noted		
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		

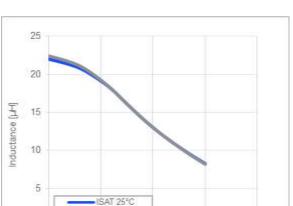
All MPS parts are lead-free, halogen-free, and adhere to the RoHS directive. For MPS green status, please visit the MPS website under Quality Assurance. "MPS", the MPS logo, and "Simple, Easy Solutions" are registered trademarks of Monolithic Power Systems, Inc. or its subsidiaries.



### **TYPICAL PERFORMANCE CURVES**



#### Temperature Rise vs. Current



ISAT 100°C

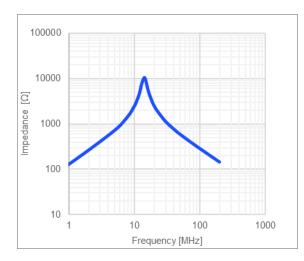
0.5

0

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#### Inductance vs. Current

#### Impedance vs. Frequency



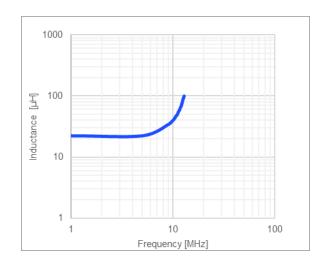
#### Inductance vs. Frequency

1

Current [A]

1.5

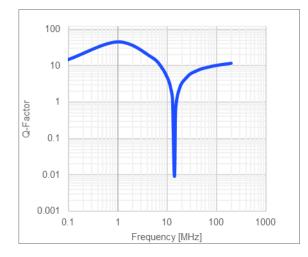
2

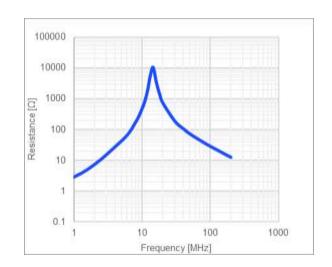




#### **Quality Factor vs. Frequency**

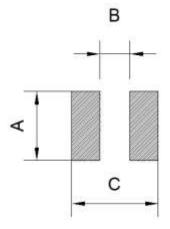
AC Resistance vs. Frequency







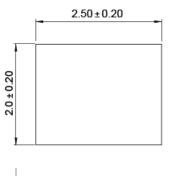
LAND PATTERN			
Dime	ensions		
A	2.40 ref.		
В	0.80 ref.		
С	2.90 ref.		
	(units in mm)		



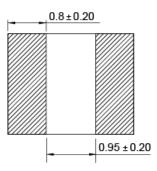
### **PRODUCT PACKAGE AND DIMENSIONS**

**Dimensions** 

(units in mm)









# **ORDERING INFORMATION**

Part Number	<u>L</u> (1)	R <sub>D</sub> c	I <sub>R</sub> <sup>(2)</sup>	Isat 25°C <sup>(3)</sup>	ISAT 100°C <sup>(4)</sup>
	Тур (µН)	Typ (mΩ)	Тур (А)	Тур (А)	Тур (А)
MPL-SE2512-R47	0.47	20	4.5	6.5	6.5
MPL-SE2512-R68	0.68	28	3.9	5	5
MPL-SE2512-1R0	1	35	3.4	4.2	4.2
MPL-SE2512-1R5	1.5	50	2.9	3.2	3.2
MPL-SE2512-2R2	2.2	72	2.5	2.7	2.7
MPL-SE2512-3R3	3.3	90	2.1	2.4	2.4
MPL-SE2512-4R7	4.7	165	1.6	1.9	1.9
MPL-SE2512-6R8	6.8	305	1.2	1.6	1.6
MPL-SE2512-100	10	410	1.1	1.3	1.3
MPL-SE2512-150	15	620	0.85	0.9	0.9
MPL-SE2512-220	22	885	0.7	0.8	0.8

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# **REVISION HISTORY**

Revision #	Revision Date	Description	Pages Updated
1.0	7/26/2019	Initial Release	-
1.1	8/2/2019	Updated Impedance vs. Frequency Curve	2
		Updated Electrical Characteristics	1
		Updated Typical Performance Curves	2–3
1.2 1/19/2022	2 1/19/2022 Updated Land Pattern and Product Package Dimensions		4
		Updated Ordering Information	5
		Grammar and formatting updates	All

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