



## Features

- Shielded construction
- Low profile
- Metal alloy powder core
- High saturation current
- Low DCR
- Low buzz noise
- RoHS compliant\* and halogen free\*\*

## Applications

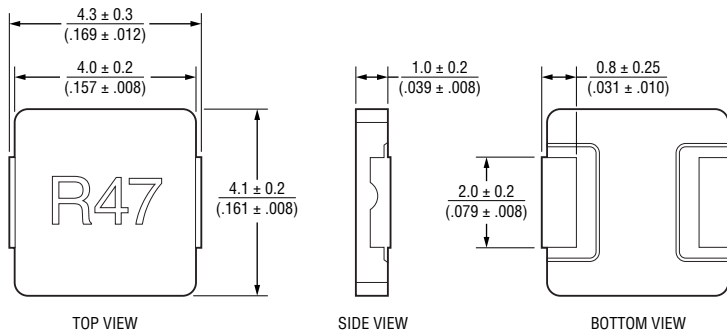
- DC-DC converters
- Power supplies in consumer, industrial and telecom electronics

# SRP0412F Series - Shielded Power Inductors

## Electrical Specifications

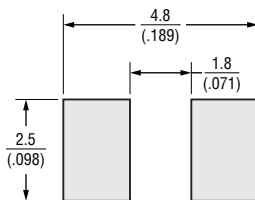
Bourns Part No.	Inductance @ 100 kHz / 1.0 V		Q @ 100 kHz Min.	SRF (MHz) Typ.	DCR (mΩ)		Irms (A) Typ.	Isat (A) Typ.
	L (μH)	Tol. %			Typ.	Max.		
SRP0412F-R47M	0.47	±20	10	88	12.5	15	8.5	11.5
SRP0412F-R68M	0.68			82	17.5	21	7.3	10.0
SRP0412F-1R0M	1.0			60	22.5	27	6.6	8.2
SRP0412F-1R5M	1.5			45	31.5	37.8	5.5	6.2
SRP0412F-2R0M	2.0			40	39	46.8	5.0	5.7
SRP0412F-2R2M	2.2			40	48	57.6	4.2	5.5
SRP0412F-3R3M	3.3			35	76	91.2	3.6	4.2
SRP0412F-4R7M	4.7			27	103	124	3.0	3.7
SRP0412F-6R8M	6.8			21	133	160	2.6	3.0
SRP0412F-8R2M	8.2			17	195	234	2.2	2.6
SRP0412F-100M	10.0			16	217	260	1.9	2.3

## Product Dimensions



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Recommended Layout



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$



**WARNING**  
Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.  
 \*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.  
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## Additional Information

Click these links for more information:



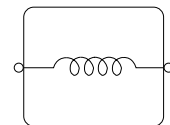
## General Specifications

Operating Temperature ..... -40 °C to +125 °C  
 (Temperature rise included)  
 Storage Temperature (Component) ..... -40 °C to +125 °C  
 Temperature Rise ..... 40 °C typ. at rated Irms<sup>1</sup> (25 °C)  
 Rated Current ..... Inductance drops 30 % at Isat  
 Moisture Sensitivity Level..... 1  
 ESD Classification (HBM)..... N/A  
<sup>1</sup>Circuit design, component, PCB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

## Materials

Core Material.....Metal alloy powder  
 Wire .....Enameled copper  
 Terminal..... Cu/Ni/Sn  
 Packaging..... 4000 pcs. per 13-inch reel

## Electrical Schematic



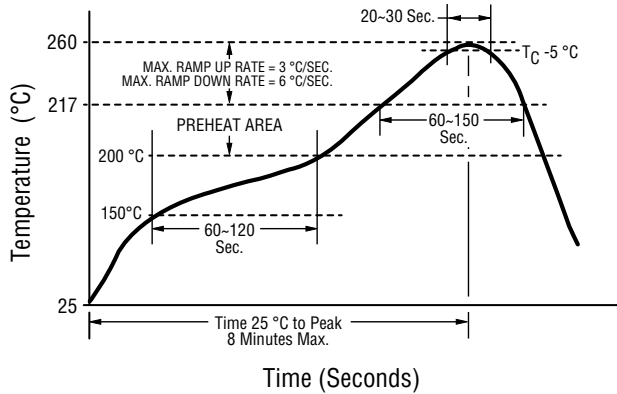
## How to Order

**SRP0412F - R47 M**  
 Model \_\_\_\_\_  
 Inductance Value Code \_\_\_\_\_  
 R47 = 0.47 μH  
 R68 = 0.68 μH  
 1R0 = 1.0 μH  
 1R5 = 1.5 μH  
 2R0 = 2.0 μH  
 2R2 = 2.2 μH  
 3R3 = 3.3 μH  
 4R7 = 4.7 μH  
 6R8 = 6.8 μH  
 8R2 = 8.2 μH  
 100 = 10.0 μH  
 Tolerance Code \_\_\_\_\_  
 M = ±20 %

# SRP0412F Series – Shielded Power Inductors



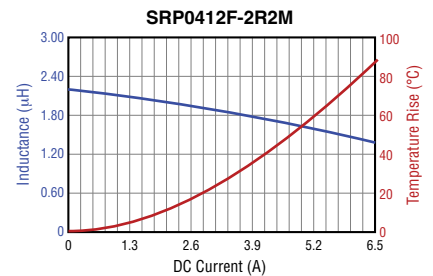
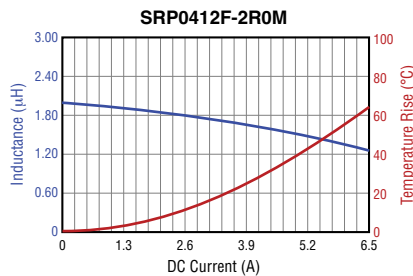
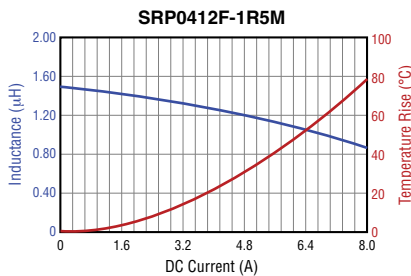
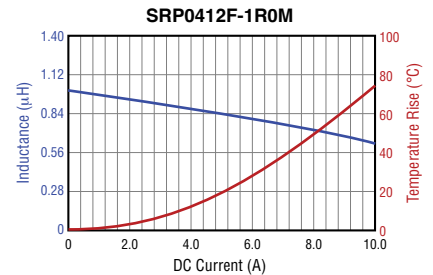
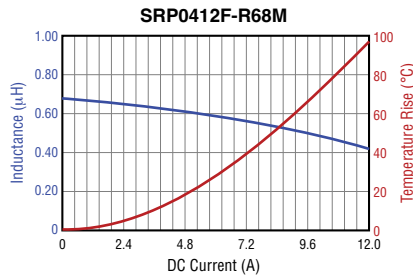
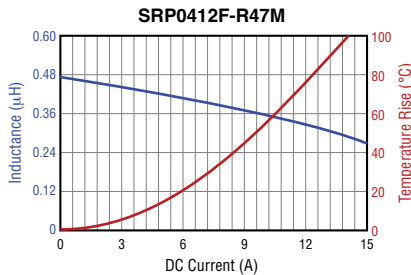
## Soldering Profile



REFLOW TIMES: 3 TIMES MAX.

Profile Feature	Pb Free Assembly
Preheat	
- Temperature Min. ( $T_{smin}$ )	150 °C
- Temperature Max. ( $T_{smax}$ )	200 °C
- Time ( $t_s$ ) from $T_{smin}$ to $T_{smax}$	60-120 seconds
Ramp-up Rate ( $T_L$ to $T_P$ )	3 °C/second max.
Liquidous temperature ( $T_L$ )	217 °C
Time ( $t_L$ ) maintained above $T_L$	60-150 seconds
Peak package body temperature ( $T_P$ )	260 °C
Time within 5 °C of Actual Peak Temperature ( $t_p$ )	<30 seconds
Ramp-Down Rate ( $T_P$ to $T_L$ )	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.

## Inductance vs. IDC



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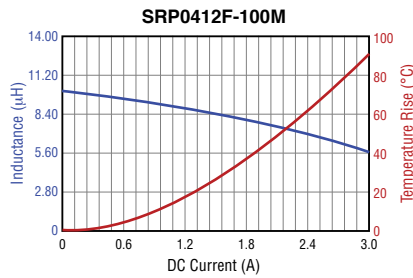
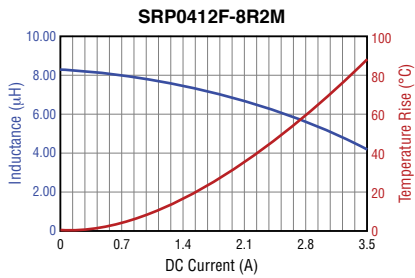
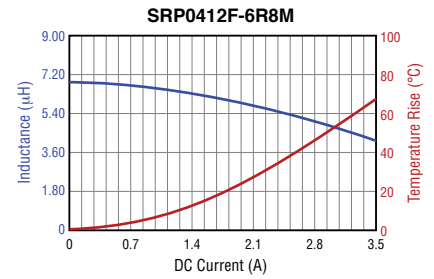
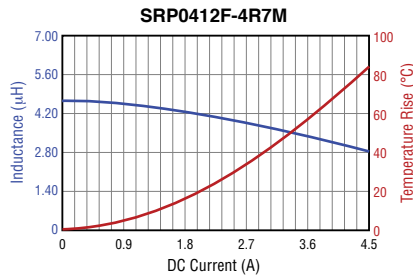
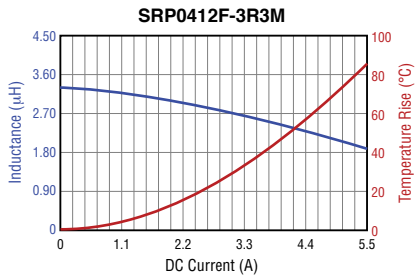
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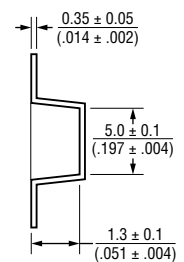
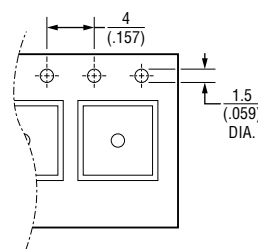
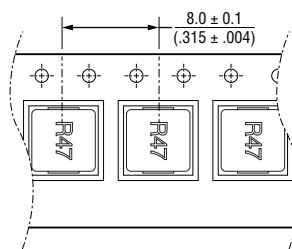
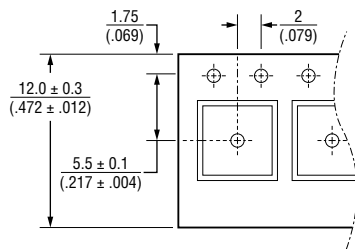
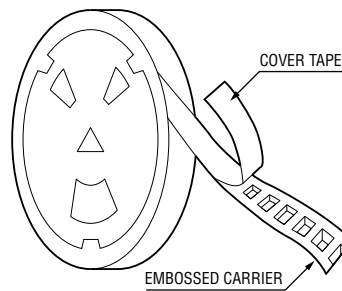
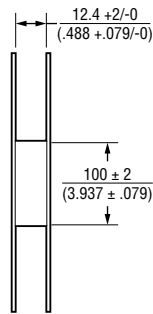
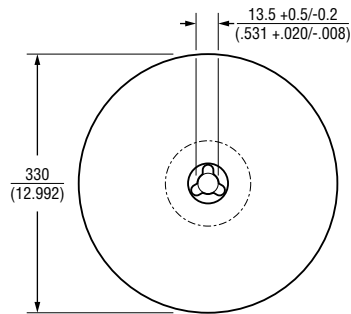
# SRP0412F Series – Shielded Power Inductors

**BOURNS®**

## Inductance vs. IDC (continued)

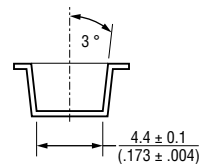


## Packaging Specifications



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

USER DIRECTION OF FEED  
QTY: 4,000 PCS. PER REEL



REV. 09/24

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