



## Features

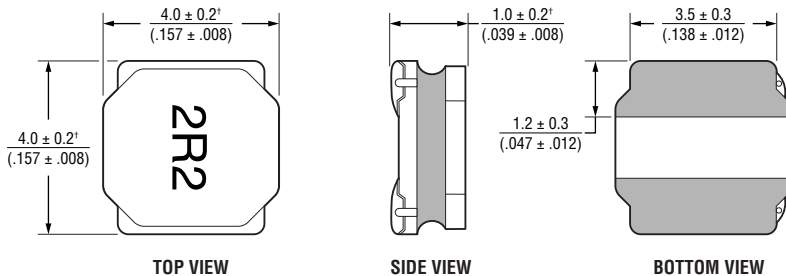
- Semi-shielded construction
- Bottom soldered lead-wire for enhanced product reliability
- AEC-Q200 compliant
- RoHS compliant\* and halogen free\*\*

## SRN4012BTA Series - Semi-shielded Power Inductors

### Electrical Specifications @ 25 °C

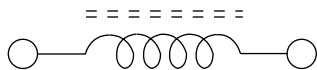
Bourns Part No.	Inductance @ 100 kHz / 1 V		Q @ 100 kHz Typ.	SRF (MHz) Typ.	DCR (mΩ) Typ.	DCR (mΩ) Max.	I <sub>rms</sub> (A) Typ.	I <sub>sat</sub> (A) Typ.
	L (μH)	Tol. %						
SRN4012BTA-R47M	0.47	20	10	238	25	30	5.5	5.0
SRN4012BTA-R68M	0.68	20	10	188	36	43	5.0	4.6
SRN4012BTA-1R0M	1.0	20	10	140	43	52	4.4	4.0
SRN4012BTA-1R2M	1.2	20	10	138	44	53	4.2	3.8
SRN4012BTA-1R5M	1.5	20	10	110	52	62.4	3.9	3.3
SRN4012BTA-2R2M	2.2	20	10	92	66	79.2	3.3	2.5
SRN4012BTA-3R3M	3.3	20	10	76	81.6	98	2.8	1.9
SRN4012BTA-4R7M	4.7	20	10	65	112	134	2.5	1.6
SRN4012BTA-5R6M	5.6	20	10	53	135	162	2.1	1.4
SRN4012BTA-6R8M	6.8	20	10	45	165	198	1.8	1.25
SRN4012BTA-100M	10	20	10	29	230	276	1.4	1.0
SRN4012BTA-150M	15	20	10	27	320	384	1.2	0.9
SRN4012BTA-220M	22	20	10	23	470	564	1.0	0.7
SRN4012BTA-330M	33	20	10	19	850	1020	0.8	0.6
SRN4012BTA-470M	47	20	10	16	1100	1320	0.65	0.48

### Product Dimensions



† Dimension does not include termination. For maximum overall dimensions with termination, add 0.1 mm (.004 in.).

### Electrical Schematic



### How to Order

**SRN4012BTA - R47M**

Model \_\_\_\_\_  
Value Code (see table) \_\_\_\_\_

### Additional Information

Click these links for more information:



[PRODUCT SELECTOR](#) [TECHNICAL LIBRARY](#) [INVENTORY](#) [SAMPLES](#) [CONTACT](#)

### General Specifications

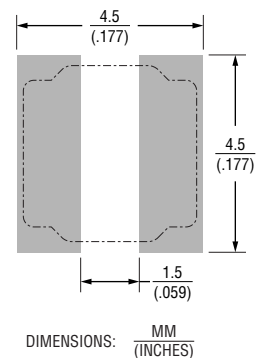
**Operating Temperature**  
 ..... -55 °C to +125 °C  
 (Temperature rise included)  
**Storage Temperature**  
 (Component on board)  
 ..... -55 °C to +125 °C  
 (In tape and reel package)  
 ..... -10 °C to +40 °C, 50-60 % RH  
**Temperature Rise** ..... 40 °C at rated I<sub>rms</sub><sup>1</sup>  
**Rated Current**  
 ..... Inductance drops 30 % at I<sub>sat</sub>  
**Moisture Sensitivity Level** ..... 1  
**ESD Classification (HBM)** ..... N/A

Note 1: 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 ..... Ferrite  
 Wire ..... Enameled copper  
 Terminal Finish ..... Ag/Ni/Sn  
 Coating ..... Magnetic resin  
 Packaging ..... 4000 pcs. per 13-inch reel

### Recommended Layout



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

\* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

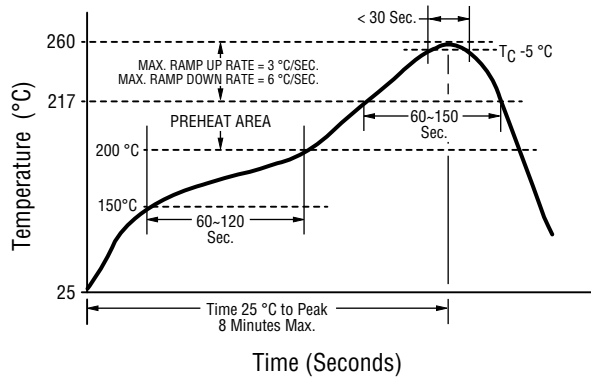
\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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# SRN4012BTA Series – Semi-shielded Power Inductors



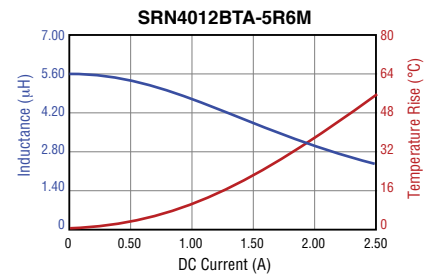
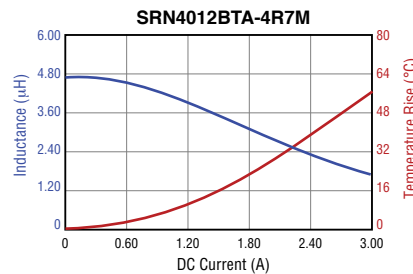
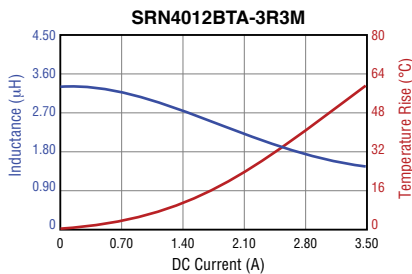
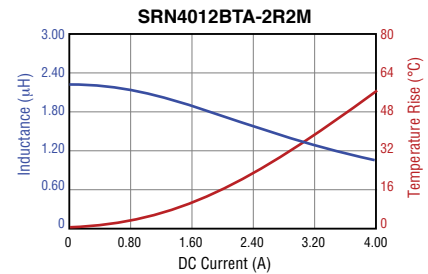
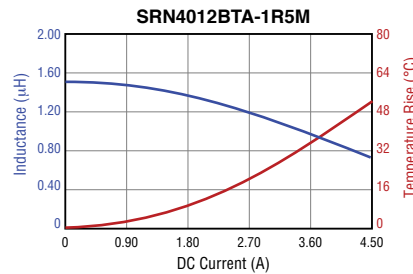
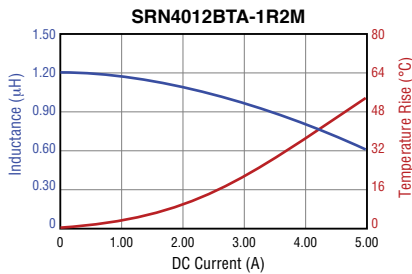
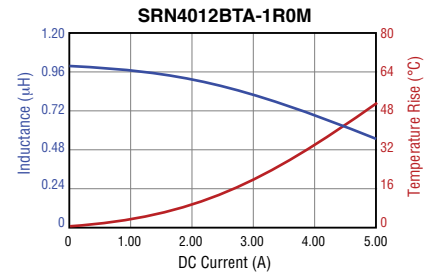
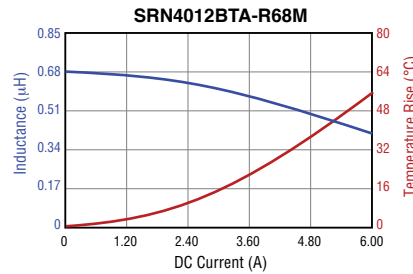
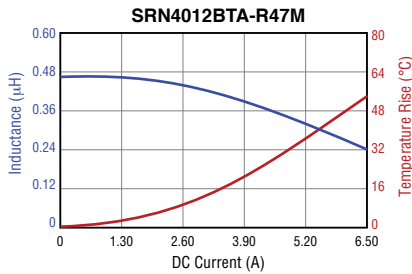
## Soldering Profile



REFLOW TIMES: 3 TIMES MAX.

Profile Feature	Pb Free Assembly
Preheat <ul style="list-style-type: none"> <li>- Temperature Min. (<math>T_{smin}</math>)</li> <li>- Temperature Max. (<math>T_{smax}</math>)</li> <li>- Time (<math>t_s</math>) from <math>T_{smin}</math> to <math>T_{smax}</math></li> </ul>	150 °C 200 °C 60-120 seconds
Ramp-up Rate ( $T_L$ to $T_P$ )	3 °C/second max.
Liquidous temperature ( $T_L$ ) Time ( $t_L$ ) maintained above $T_L$	217 °C 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.

## L vs. I Charts



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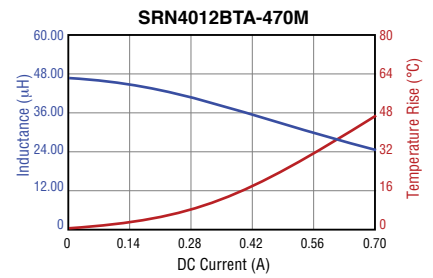
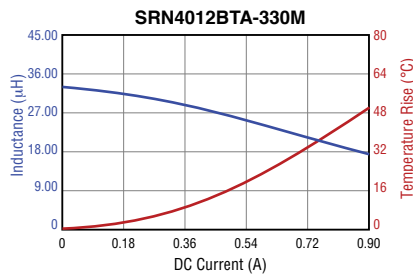
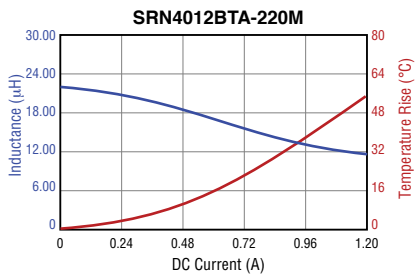
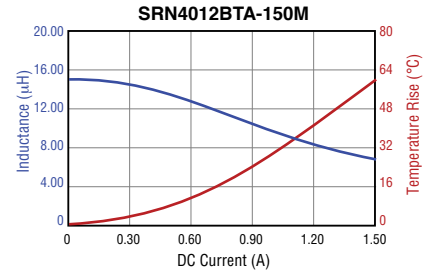
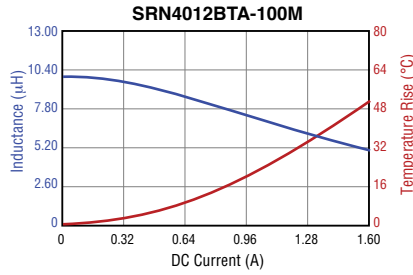
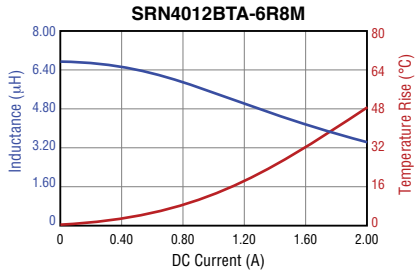
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# SRN4012BTA Series – Semi-shielded Power Inductors



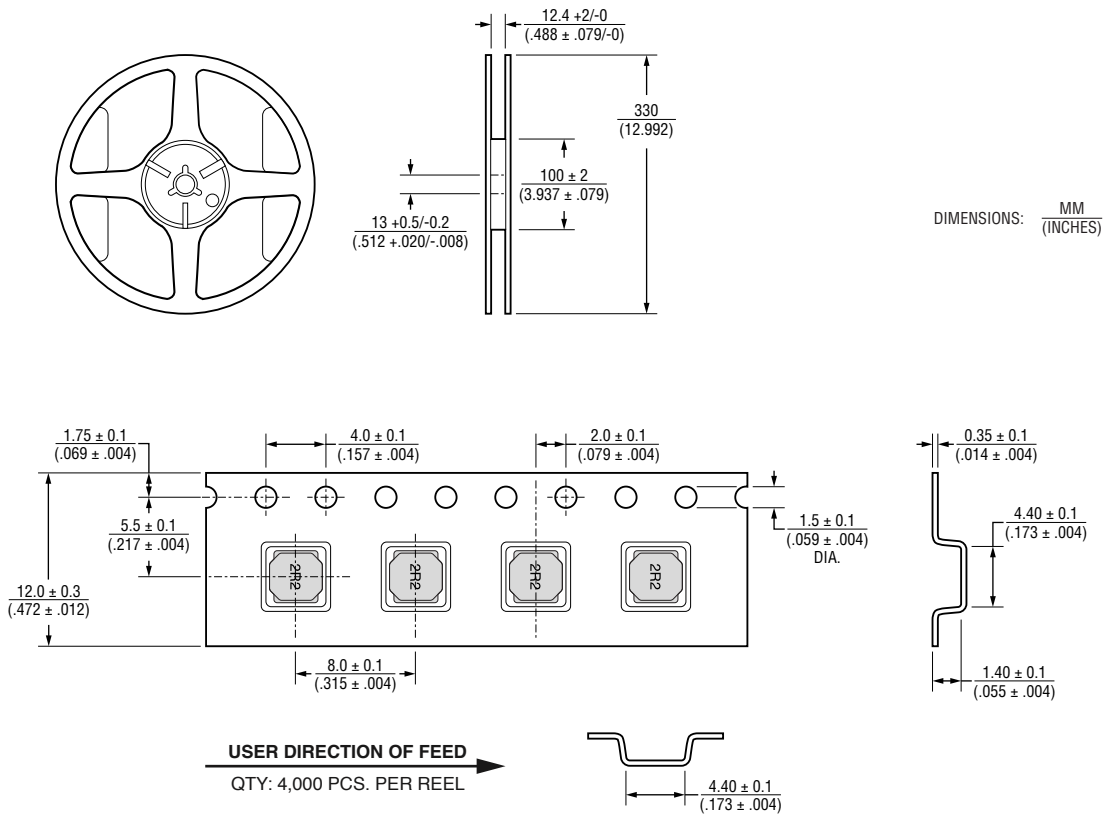
## L vs. I Charts (continued)



# SRN4012BTA Series – Semi-shielded Power Inductors

**BOURNS®**

## Packaging Specifications



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EMEA: Tel: +36 88 885 877 • Email: [eurocus@bourns.com](mailto:eurocus@bourns.com)

The Americas: Tel: +1-951 781-5500 • Email: [americus@bourns.com](mailto:americus@bourns.com)

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