



## Features

- Shielded construction – low radiation
- Inductance range: 1.0 to 100  $\mu$ H
- Heating current up to 6.8 A
- AEC-Q200 compliant
- RoHS compliant\* and halogen free\*\*

## Applications

- Automotive systems
- DC-DC converters
- Power supplies

# SRR6838A Series – Shielded Power Inductors

### Electrical Specifications @ 25 °C

Bourns Part Number	Inductance @ 100 kHz / 0.1 V		SRF (MHz) Typ.	DCR (m $\Omega$ )		$I_{rms1}$ (A) Typ.	$I_{rms2}$ (A) Typ.	$I_{sat}$ (A) Typ.
	L ( $\mu$ H)	Tol. (%)		Typ.	Max.			
SRR6838A-1R0Y	1.0	$\pm$ 30	160.0	7.7	15.0	4.50	6.80	5.70
SRR6838A-3R0Y	3.0	$\pm$ 30	93.0	16.9	21.0	3.30	4.80	3.40
SRR6838A-5R0Y	5.0	$\pm$ 30	55.0	22.3	25.0	3.00	4.50	2.63
SRR6838A-7R5Y	7.5	$\pm$ 30	34.0	26.4	34.0	2.55	3.80	2.10
SRR6838A-100M	10.0	$\pm$ 20	28.0	35.3	50.0	2.40	3.50	1.72
SRR6838A-120M	12.0	$\pm$ 20	26.0	38.6	55.0	2.25	3.20	1.60
SRR6838A-150M	15.0	$\pm$ 20	22.0	45.6	60.0	2.10	3.10	1.50
SRR6838A-180M	18.0	$\pm$ 20	20.0	54.6	75.0	1.95	2.90	1.35
SRR6838A-220M	22.0	$\pm$ 20	18.0	68.0	87.0	1.80	2.80	1.25
SRR6838A-270M	27.0	$\pm$ 20	16.0	84.4	105.0	1.60	2.35	1.15
SRR6838A-330M	33.0	$\pm$ 20	14.0	105.5	120.0	1.35	2.00	1.02
SRR6838A-390M	39.0	$\pm$ 20	13.0	115.0	135.0	1.25	1.85	0.94
SRR6838A-470M	47.0	$\pm$ 20	11.0	134.0	160.0	1.15	1.70	0.85
SRR6838A-560M	56.0	$\pm$ 20	10.0	160.0	190.0	1.05	1.55	0.75
SRR6838A-680M	68.0	$\pm$ 20	9.0	183.0	240.0	0.95	1.40	0.70
SRR6838A-820M	82.0	$\pm$ 20	8.0	229.0	290.0	0.85	1.30	0.63
SRR6838A-101M	100.0	$\pm$ 20	7.0	289.0	345.0	0.75	1.10	0.57

#### Notes:

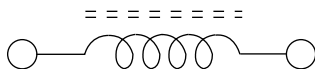
1.  $I_{rms1}$  based on temperature rise of 20 °C typ.
2.  $I_{rms2}$  based on temperature rise of 40 °C typ.

### How to Order

#### SRR6838A - 1R0Y

Model \_\_\_\_\_  
 Value Code (see table) \_\_\_\_\_  
 Tolerance \_\_\_\_\_  
 Y =  $\pm$ 30 %  
 M =  $\pm$ 20 %

### Electrical Schematic



### General Specifications

Operating Temperature ..... -55 °C to +150 °C  
 (Temperature rise included)  
 Storage Temperature ..... -55 °C to +150 °C  
 Temperature Rise ..... 20 °C typ. at rated  $I_{rms1}$   
 ..... 40 °C typ. at rated  $I_{rms2}$   
 Inductance Drop ..... 35 % typ. at  $I_{sat}$   
 Moisture Sensitivity Level ..... 1  
 ESD Classification (HBM) ..... N/A

### Additional Information

Click these links for more information:



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

### Materials

Core ..... Ferrite  
 Wire ..... Enameled copper  
 Terminal Finish ..... Sn  
 Packaging ..... 1000 pcs. per 13-inch reel



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

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

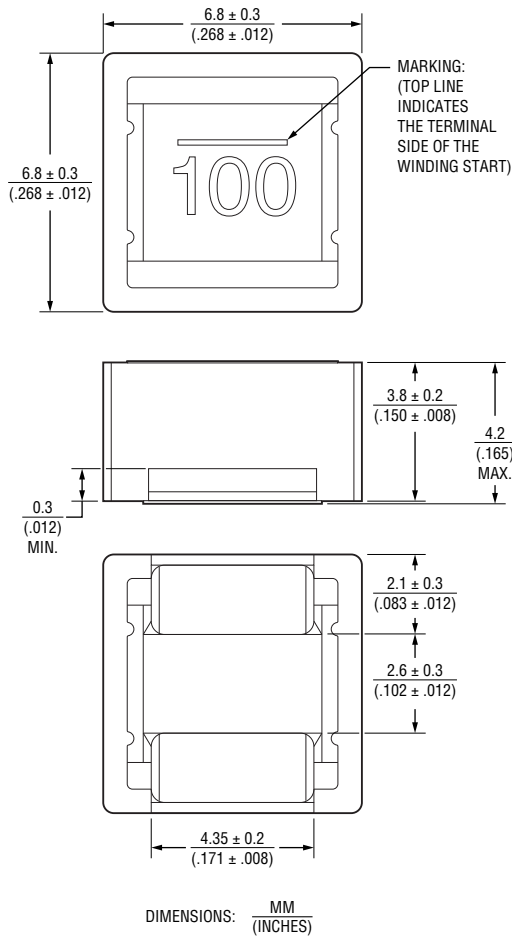
\*\* Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

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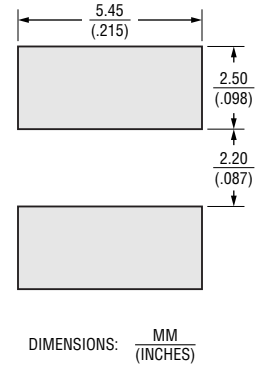
# SRR6838A Series – Shielded Power Inductors

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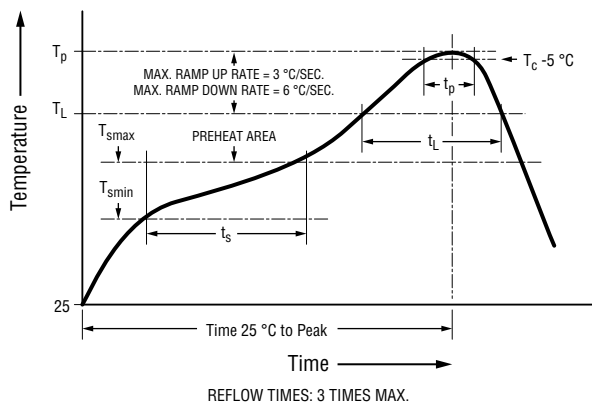
## Product Dimensions



## Recommended Layout



## Soldering Profile



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 ( $T_p$ )	250 °C
Time ( $t_p$ ) at $T_C - 5$ °C ( $T_p$ should be equal to or less than $T_C$ )	< 30 seconds
Ramp-Down Rate ( $T_p$ to $T_L$ )	6 °C/second max.
Time 25 °C to Peak Temperature	8 minutes max.

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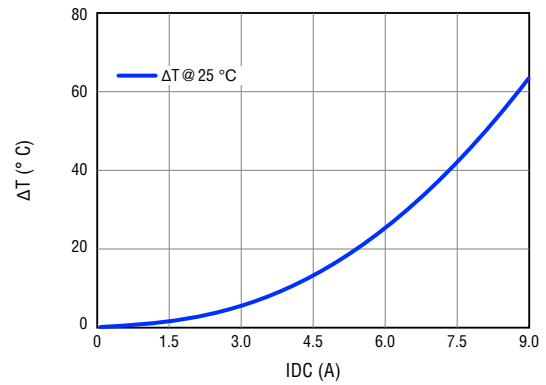
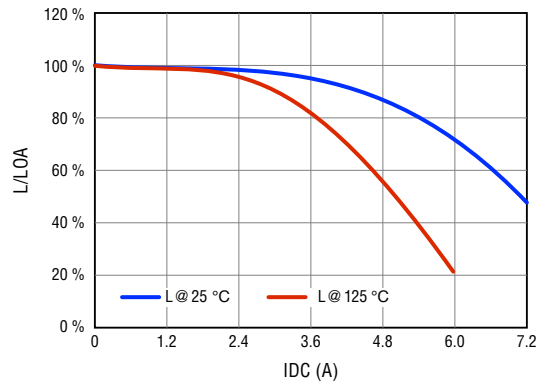
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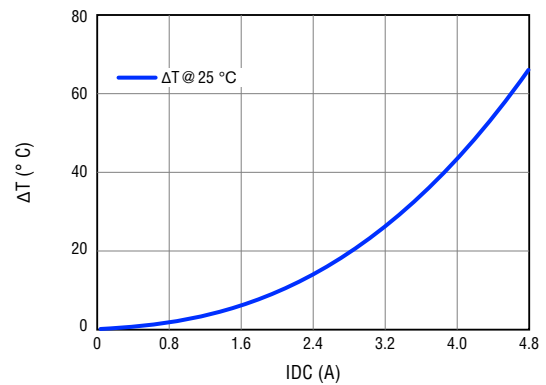
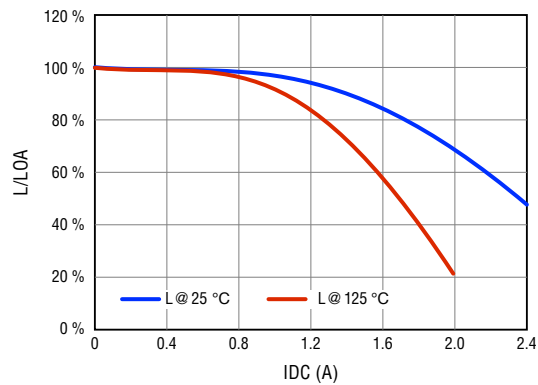
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## Typical Current Characteristics

### SRR6838A-1R0Y



### SRR6838A-100M

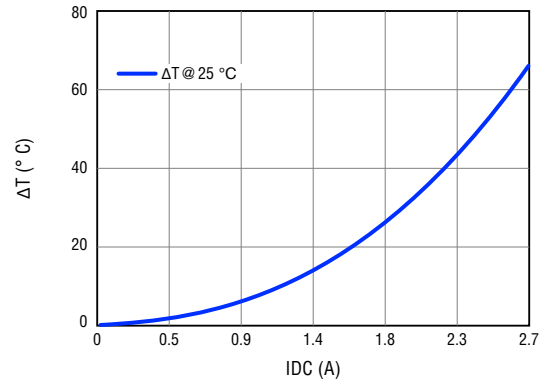
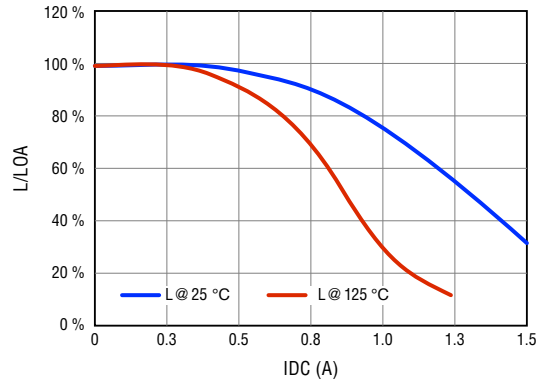


# SRR6838A Series – Shielded Power Inductors

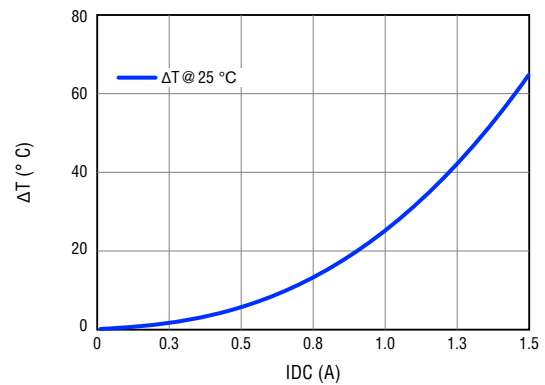
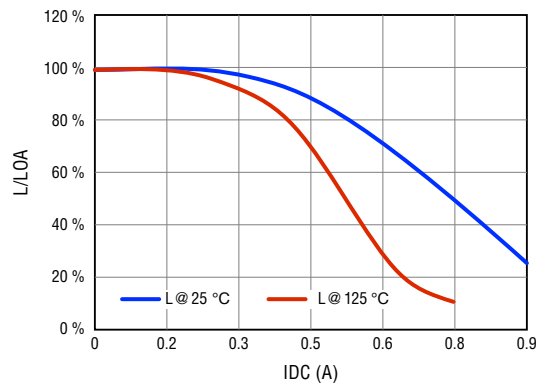
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## Typical Current Characteristics

### SRR6838A-330M



### SRR6838A-101M



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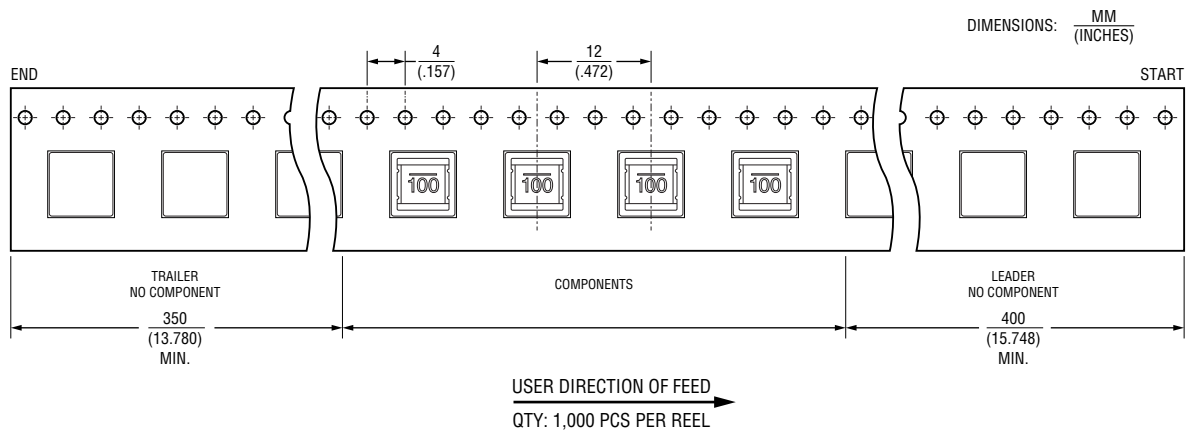
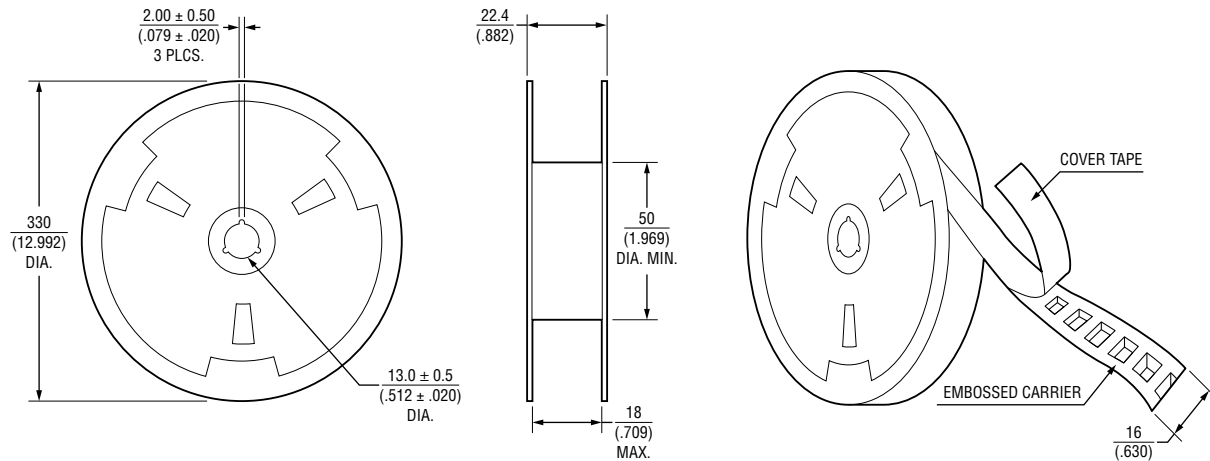
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# SRR6838A Series – Shielded Power Inductors

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## Packaging Specifications



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