



**THE DATASHEET OF  
SRR1210A-680M**





## Features

- Shielded construction
- Inductance range: 1.0 to 1000  $\mu$ H
- Heating current up to 11 A
- Dimensions: 12 x 12 x 10 mm
- AEC-Q200 qualified
- RoHS compliant\* and halogen free\*\*

## SRR1210A Series - Shielded Power Inductors

### Electrical Specifications @ 25 °C

| Bourns Part Number | Inductance @ 1 kHz / 0.25 V |          | Q Ref. | Q Test Freq. (MHz) | SRF (MHz) Typ. | DCR ( $\Omega$ ) Max. | I rms (A) | I sat (A) | ***K-Factor |
|--------------------|-----------------------------|----------|--------|--------------------|----------------|-----------------------|-----------|-----------|-------------|
|                    | L ( $\mu$ H)                | Tol. (%) |        |                    |                |                       |           |           |             |
| SRR1210A-1R0Y      | 1.0                         | $\pm 30$ | 10     | 7.96               | 85             | 0.006                 | 11.0      | 16.5      | 86          |
| SRR1210A-1R8Y      | 1.8                         | $\pm 30$ | 10     | 7.96               | 56             | 0.075                 | 10.2      | 13.2      | 67          |
| SRR1210A-2R2Y      | 2.2                         | $\pm 30$ | 10     | 7.96               | 54             | 0.09                  | 9.5       | 12.2      | 55          |
| SRR1210A-3R3Y      | 3.3                         | $\pm 30$ | 15     | 7.96               | 44             | 0.01                  | 9.0       | 10.5      | 46          |
| SRR1210A-4R7Y      | 4.7                         | $\pm 30$ | 8      | 7.96               | 35             | 0.012                 | 8.5       | 9.6       | 40          |
| SRR1210A-5R6Y      | 5.6                         | $\pm 30$ | 12     | 7.96               | 28             | 0.0135                | 8.0       | 8.5       | 35          |
| SRR1210A-6R8Y      | 6.8                         | $\pm 30$ | 12     | 7.96               | 20             | 0.015                 | 7.85      | 8.3       | 32          |
| SRR1210A-8R2Y      | 8.2                         | $\pm 30$ | 11     | 7.96               | 16             | 0.017                 | 7.25      | 7.55      | 29          |
| SRR1210A-100M      | 10                          | $\pm 20$ | 16     | 2.52               | 12             | 0.018                 | 6.5       | 6.5       | 26          |
| SRR1210A-120M      | 12                          | $\pm 20$ | 14     | 2.52               | 18             | 0.022                 | 6.3       | 6.1       | 24          |
| SRR1210A-150M      | 15                          | $\pm 20$ | 16     | 2.52               | 10.5           | 0.032                 | 5.8       | 5.3       | 21          |
| SRR1210A-180M      | 18                          | $\pm 20$ | 13     | 2.52               | 8              | 0.035                 | 5.5       | 5.1       | 19          |
| SRR1210A-220M      | 22                          | $\pm 20$ | 16     | 2.52               | 8              | 0.038                 | 5.2       | 4.5       | 17          |
| SRR1210A-270M      | 27                          | $\pm 20$ | 16     | 2.52               | 6.5            | 0.04                  | 5.0       | 4.2       | 15          |
| SRR1210A-330M      | 33                          | $\pm 20$ | 16     | 2.52               | 6.5            | 0.052                 | 4.4       | 3.7       | 14          |
| SRR1210A-390M      | 39                          | $\pm 20$ | 16     | 2.52               | 4.5            | 0.066                 | 4.2       | 3.5       | 13          |
| SRR1210A-470M      | 47                          | $\pm 20$ | 16     | 2.52               | 4.5            | 0.072                 | 3.8       | 3.1       | 12          |
| SRR1210A-560M      | 56                          | $\pm 20$ | 8      | 2.52               | 4              | 0.09                  | 3.4       | 2.9       | 11          |
| SRR1210A-680M      | 68                          | $\pm 20$ | 12     | 2.52               | 3.8            | 0.102                 | 3.0       | 2.7       | 10          |
| SRR1210A-820M      | 82                          | $\pm 20$ | 15     | 2.52               | 3.5            | 0.112                 | 2.8       | 2.5       | 9           |
| SRR1210A-101M      | 100                         | $\pm 20$ | 16     | 0.796              | 3              | 0.135                 | 2.5       | 2.2       | 8           |
| SRR1210A-121M      | 120                         | $\pm 20$ | 13     | 0.796              | 2.6            | 0.17                  | 2.3       | 1.9       | 7           |
| SRR1210A-151M      | 150                         | $\pm 20$ | 12     | 0.796              | 2.2            | 0.19                  | 2.2       | 1.8       | 7           |
| SRR1210A-181M      | 180                         | $\pm 20$ | 14     | 0.796              | 1.8            | 0.25                  | 1.9       | 1.6       | 6           |
| SRR1210A-221M      | 220                         | $\pm 20$ | 15     | 0.796              | 1.8            | 0.315                 | 1.7       | 1.5       | 5           |
| SRR1210A-271M      | 270                         | $\pm 20$ | 16     | 0.796              | 1.8            | 0.41                  | 1.5       | 1.3       | 5           |
| SRR1210A-331M      | 330                         | $\pm 20$ | 14     | 0.796              | 1.8            | 0.45                  | 1.4       | 1.2       | 4           |
| SRR1210A-391M      | 390                         | $\pm 20$ | 16     | 0.796              | 1.3            | 0.6                   | 1.3       | 1.1       | 4           |
| SRR1210A-471M      | 470                         | $\pm 20$ | 12     | 0.796              | 0.85           | 0.82                  | 1.2       | 1.0       | 4           |
| SRR1210A-561M      | 560                         | $\pm 20$ | 12     | 0.796              | 0.85           | 0.9                   | 1.1       | 0.95      | 3           |
| SRR1210A-681M      | 680                         | $\pm 20$ | 11     | 0.796              | 0.85           | 1.2                   | 1.0       | 0.85      | 3           |
| SRR1210A-821M      | 820                         | $\pm 20$ | 6      | 0.796              | 0.85           | 1.32                  | 0.85      | 0.75      | 3           |
| SRR1210A-102M      | 1000                        | $\pm 20$ | 22     | 0.796              | 0.85           | 1.65                  | 0.75      | 0.7       | 3           |

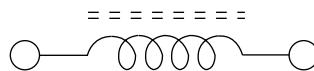
\*\*\*K-Factor: To calculate core flux density,  $B_p$ -p (gauss) =  $K \times L(\mu H) \times \Delta I$  (peak-to-peak ripple current, A), determine core loss from *Core Loss vs. Flux Density* plot.

### How to Order

SRR1210A - 100M

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

### Electrical Schematic



**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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### General Specifications

Operating Temperature ..... -40 °C to +125 °C  
(Temperature rise included)  
Storage Temperature ..... -40 °C to +125 °C  
Temperature Rise ..... 40 °C typ. at rated I rms  
Inductance drop ..... 20 % at I sat

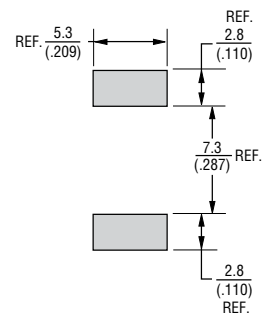
### Materials

Core ..... Ferrite  
Wire ..... Enameled copper  
Terminal Finish ..... Sn  
Packaging ..... 250 pcs. per reel

### Product Dimensions



### Recommended Layout



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

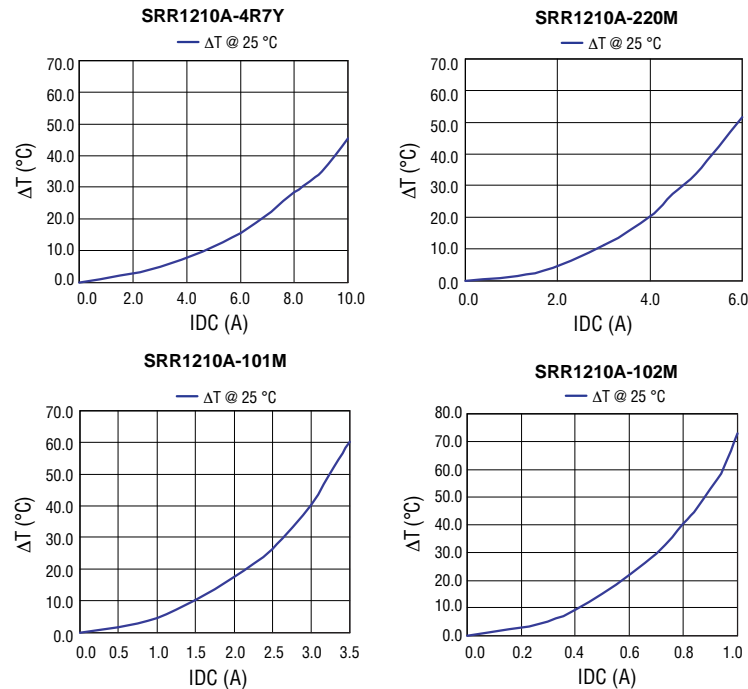
# SRR1210A Series - Shielded Power Inductors



## Inductance vs. IDC



## Temperature Rise vs. IDC



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## Soldering Profile



## Core Loss vs. Flux Density



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## Packaging Specifications



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REV. 11/19

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