



## Features

- High saturation current
- Inductance range: 1.5 to 470  $\mu$ H
- Heating current up to 5.8 A
- Dimensions: 7.8 x 7 x 5 mm
- AEC-Q200 qualified
- RoHS compliant\* and halogen free\*\*

## Applications

- Automotive systems:
  - Driver assistant
  - Information
  - Entertainment
  - Lighting
- DC/DC converters
- Power supplies

# SDE0805A Series - SMD Power Inductors

### Electrical Specifications @ 25 °C

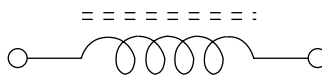
| Bourns Part Number | Inductance   |          |                     | SRF (MHz) Typ. | DCR ( $\Omega$ ) Typ. | DCR ( $\Omega$ ) Max. | I rms (A) | I sat (A) |
|--------------------|--------------|----------|---------------------|----------------|-----------------------|-----------------------|-----------|-----------|
|                    | L ( $\mu$ H) | Tol. (%) | Test Freq./ Voltage |                |                       |                       |           |           |
| SDE0805A-1R5M      | 1.5          | $\pm 20$ | 1 MHz / 1 V         | 115            | 0.015                 | 0.02                  | 5.8       | 6.5       |
| SDE0805A-2R5M      | 2.5          | $\pm 20$ | 1 MHz / 1 V         | 71.2           | 0.02                  | 0.027                 | 5.0       | 5.0       |
| SDE0805A-3R3M      | 3.3          | $\pm 20$ | 1 MHz / 1 V         | 53.3           | 0.024                 | 0.032                 | 4.6       | 4.5       |
| SDE0805A-4R7M      | 4.7          | $\pm 20$ | 1 MHz / 1 V         | 44.2           | 0.028                 | 0.038                 | 4.3       | 4.0       |
| SDE0805A-5R6M      | 5.6          | $\pm 20$ | 1 MHz / 1 V         | 34.9           | 0.032                 | 0.043                 | 4.0       | 3.7       |
| SDE0805A-6R8M      | 6.8          | $\pm 20$ | 1 MHz / 1 V         | 32             | 0.036                 | 0.048                 | 3.8       | 3.2       |
| SDE0805A-8R2M      | 8.2          | $\pm 20$ | 1 MHz / 1 V         | 28.5           | 0.039                 | 0.052                 | 3.6       | 3.0       |
| SDE0805A-100M      | 10           | $\pm 20$ | 1 MHz / 1 V         | 27.5           | 0.05                  | 0.07                  | 3.2       | 2.6       |
| SDE0805A-120M      | 12           | $\pm 20$ | 1 MHz / 1 V         | 25.8           | 0.056                 | 0.08                  | 3.0       | 2.4       |
| SDE0805A-150M      | 15           | $\pm 20$ | 1 MHz / 1 V         | 22.5           | 0.06                  | 0.09                  | 2.5       | 2.2       |
| SDE0805A-180M      | 18           | $\pm 20$ | 1 MHz / 1 V         | 17.6           | 0.074                 | 0.1                   | 2.45      | 2.0       |
| SDE0805A-220M      | 22           | $\pm 20$ | 1 MHz / 1 V         | 16.5           | 0.082                 | 0.11                  | 2.35      | 1.8       |
| SDE0805A-270M      | 27           | $\pm 20$ | 1 MHz / 1 V         | 14.3           | 0.094                 | 0.12                  | 2.2       | 1.7       |
| SDE0805A-330M      | 33           | $\pm 20$ | 1 MHz / 1 V         | 13.2           | 0.117                 | 0.13                  | 2.0       | 1.6       |
| SDE0805A-390M      | 39           | $\pm 20$ | 1 MHz / 1 V         | 12.6           | 0.137                 | 0.16                  | 1.9       | 1.5       |
| SDE0805A-470K      | 47           | $\pm 10$ | 1 MHz / 1 V         | 12.1           | 0.165                 | 0.18                  | 1.7       | 1.4       |
| SDE0805A-560K      | 56           | $\pm 10$ | 1 MHz / 1 V         | 11.5           | 0.2                   | 0.24                  | 1.6       | 1.2       |
| SDE0805A-680K      | 68           | $\pm 10$ | 1 MHz / 1 V         | 10.5           | 0.23                  | 0.28                  | 1.45      | 1.1       |
| SDE0805A-820K      | 82           | $\pm 10$ | 1 MHz / 1 V         | 9.4            | 0.3                   | 0.37                  | 1.2       | 1.0       |
| SDE0805A-101K      | 100          | $\pm 10$ | 1 kHz / 1 V         | 8.8            | 0.32                  | 0.43                  | 1.1       | 0.9       |
| SDE0805A-121K      | 120          | $\pm 10$ | 1 kHz / 1 V         | 7.7            | 0.36                  | 0.47                  | 1.0       | 0.8       |
| SDE0805A-151K      | 150          | $\pm 10$ | 1 kHz / 1 V         | 7.2            | 0.515                 | 0.64                  | 0.9       | 0.72      |
| SDE0805A-181K      | 180          | $\pm 10$ | 1 kHz / 1 V         | 6.2            | 0.576                 | 0.71                  | 0.85      | 0.65      |
| SDE0805A-221K      | 220          | $\pm 10$ | 1 kHz / 1 V         | 6              | 0.75                  | 0.96                  | 0.8       | 0.6       |
| SDE0805A-271K      | 270          | $\pm 10$ | 1 kHz / 1 V         | 5              | 0.87                  | 1.11                  | 0.7       | 0.55      |
| SDE0805A-331K      | 330          | $\pm 10$ | 1 kHz / 1 V         | 4.9            | 1.02                  | 1.2                   | 0.65      | 0.5       |
| SDE0805A-391K      | 390          | $\pm 10$ | 1 kHz / 1 V         | 4.4            | 1.29                  | 1.5                   | 0.6       | 0.45      |
| SDE0805A-471K      | 470          | $\pm 10$ | 1 kHz / 1 V         | 3.6            | 1.47                  | 1.7                   | 0.55      | 0.4       |

### How to Order

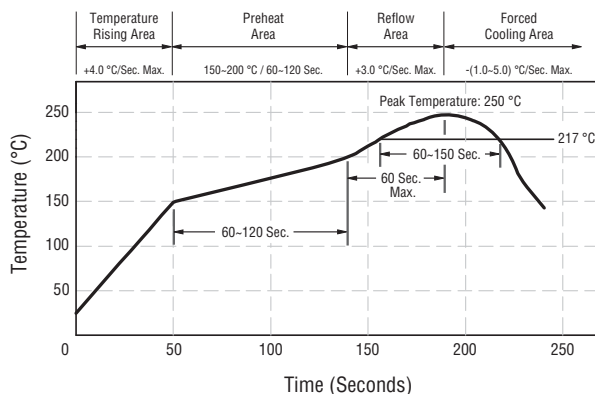
**SDE0805A - 100M**

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

### Electrical Schematic



### Soldering Profile



Peak Temperature: 250 °C max.  
Max. Peak Temperature -5 °C: 30 sec. max.  
Max. Time Above 217 °C: 90-150 sec. max.

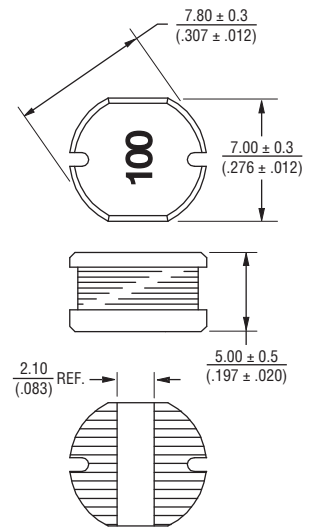
### General Specifications

Operating Temperature .....-40 °C to +125 °C  
(Temperature rise included)  
Storage Temperature .....-40 °C to +125 °C  
Resistance to Solder Heat .....+250 °C for 10 sec.  
Temperature Rise .....40 °C typ. at rated I rms  
Inductance Drop ..... 10 % typ. at I sat

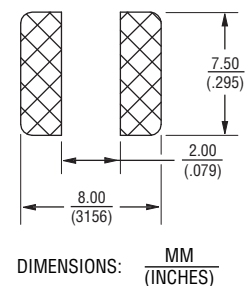
### Materials

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

### Product Dimensions



### Recommended Layout

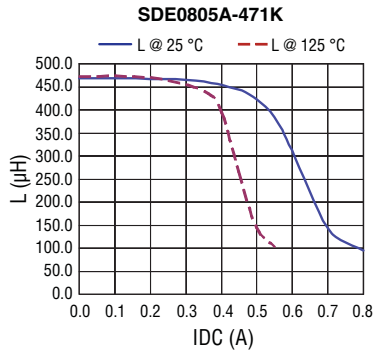
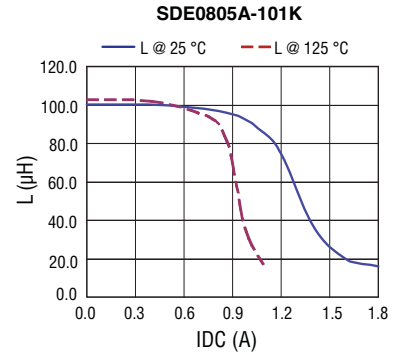
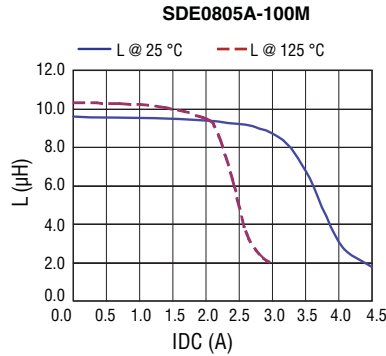
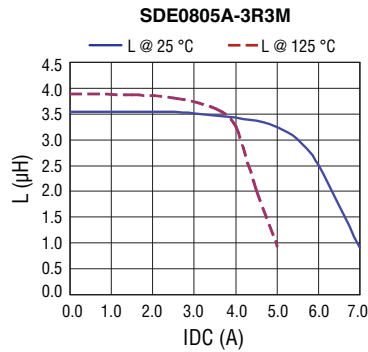


\* RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.  
\*\* Bourns follows the prevailing definition of "halogen free" in the industry. Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.  
Specifications are subject to change without notice.  
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.  
Users should verify actual device performance in their specific applications.

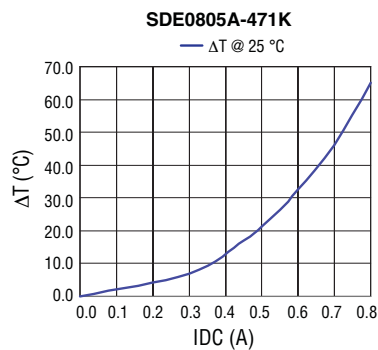
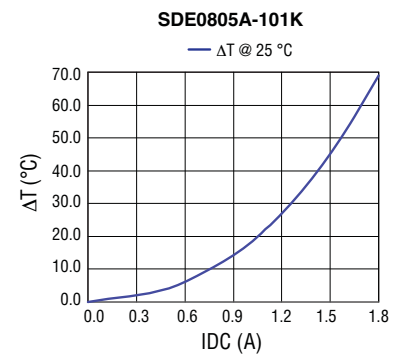
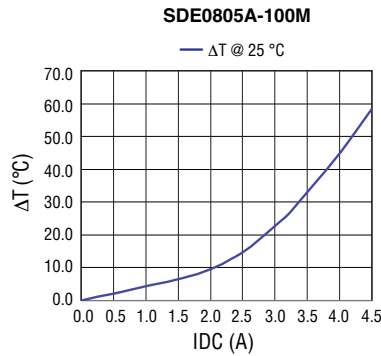
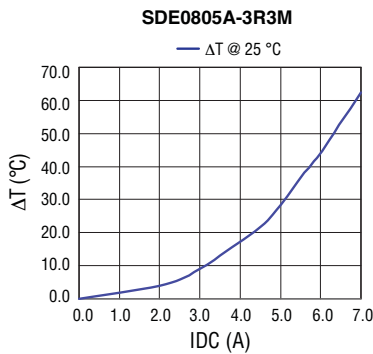
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## Inductance vs. IDC



## Temperature Rise vs. IDC

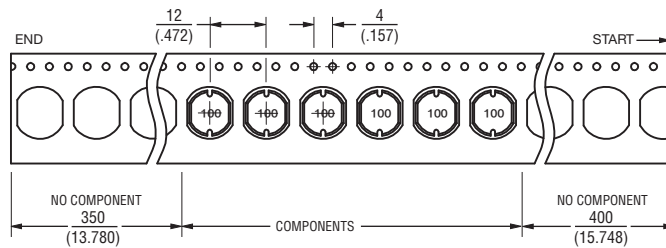
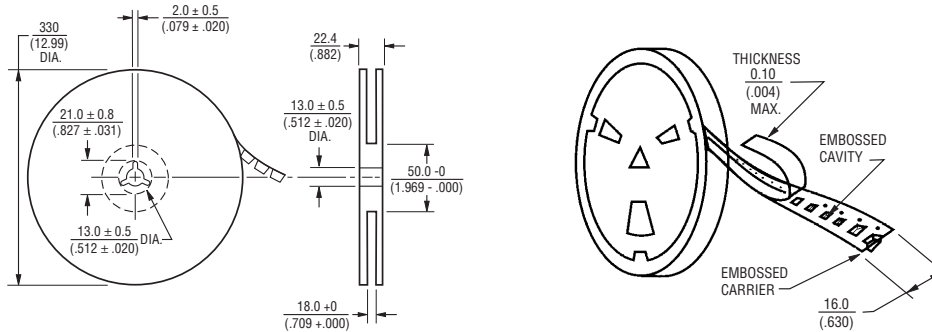


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# SDE0805A Series - SMD Power Inductors

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## Packaging Specifications



USER DIRECTION OF FEED →

QTY: 1,000 PCS. PER REEL

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

**BOURNS®**

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