



**THE DATASHEET OF  
SDE0805A-391K**



RoHS COMPLIANT  
& REEL-Q200 QUALIFIED



**BOURNS®**

## 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\*\*

## 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)	***K-Factor
	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	218
SDE0805A-2R5M	2.5	$\pm 20$	1 MHz / 1 V	71.2	0.02	0.027	5.0	5.0	166
SDE0805A-3R3M	3.3	$\pm 20$	1 MHz / 1 V	53.3	0.024	0.032	4.6	4.5	149
SDE0805A-4R7M	4.7	$\pm 20$	1 MHz / 1 V	44.2	0.028	0.038	4.3	4.0	135
SDE0805A-5R6M	5.6	$\pm 20$	1 MHz / 1 V	34.9	0.032	0.043	4.0	3.7	123
SDE0805A-6R8M	6.8	$\pm 20$	1 MHz / 1 V	32	0.036	0.048	3.8	3.2	105
SDE0805A-8R2M	8.2	$\pm 20$	1 MHz / 1 V	28.5	0.039	0.052	3.6	3.0	98
SDE0805A-100M	10	$\pm 20$	1 MHz / 1 V	27.5	0.05	0.07	3.2	2.6	86
SDE0805A-120M	12	$\pm 20$	1 MHz / 1 V	25.8	0.056	0.08	3.0	2.4	81
SDE0805A-150M	15	$\pm 20$	1 MHz / 1 V	22.5	0.06	0.09	2.5	2.2	73
SDE0805A-180M	18	$\pm 20$	1 MHz / 1 V	17.6	0.074	0.1	2.45	2.0	66
SDE0805A-220M	22	$\pm 20$	1 MHz / 1 V	16.5	0.082	0.11	2.35	1.8	58
SDE0805A-270M	27	$\pm 20$	1 MHz / 1 V	14.3	0.094	0.12	2.2	1.7	53
SDE0805A-330M	33	$\pm 20$	1 MHz / 1 V	13.2	0.117	0.13	2.0	1.6	46
SDE0805A-390M	39	$\pm 20$	1 MHz / 1 V	12.6	0.137	0.16	1.9	1.5	44
SDE0805A-470K	47	$\pm 10$	1 MHz / 1 V	12.1	0.165	0.18	1.7	1.4	39
SDE0805A-560K	56	$\pm 10$	1 MHz / 1 V	11.5	0.2	0.24	1.6	1.2	36
SDE0805A-680K	68	$\pm 10$	1 MHz / 1 V	10.5	0.23	0.28	1.45	1.1	33
SDE0805A-820K	82	$\pm 10$	1 MHz / 1 V	9.4	0.3	0.37	1.2	1.0	30
SDE0805A-101K	100	$\pm 10$	1 kHz / 1 V	8.8	0.32	0.43	1.1	0.9	28
SDE0805A-121K	120	$\pm 10$	1 kHz / 1 V	7.7	0.36	0.47	1.0	0.8	25
SDE0805A-151K	150	$\pm 10$	1 kHz / 1 V	7.2	0.515	0.64	0.9	0.72	23
SDE0805A-181K	180	$\pm 10$	1 kHz / 1 V	6.2	0.576	0.71	0.85	0.65	21
SDE0805A-221K	220	$\pm 10$	1 kHz / 1 V	6	0.75	0.96	0.8	0.6	19
SDE0805A-271K	270	$\pm 10$	1 kHz / 1 V	5	0.87	1.11	0.7	0.55	17
SDE0805A-331K	330	$\pm 10$	1 kHz / 1 V	4.9	1.02	1.2	0.65	0.5	15
SDE0805A-391K	390	$\pm 10$	1 kHz / 1 V	4.4	1.29	1.5	0.6	0.45	14
SDE0805A-471K	470	$\pm 10$	1 kHz / 1 V	3.6	1.47	1.7	0.55	0.4	13

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

### Core Loss vs. Flux Density



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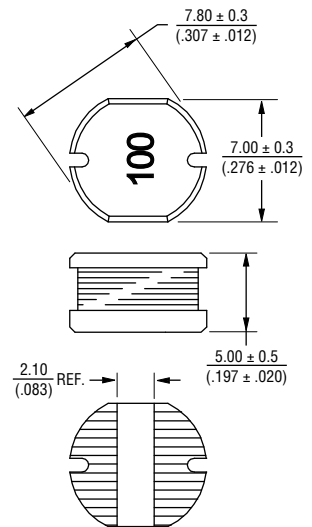
### General Specifications

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 ..... 10 % typ. at I sat

### Materials

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

### Product Dimensions



### Recommended Layout



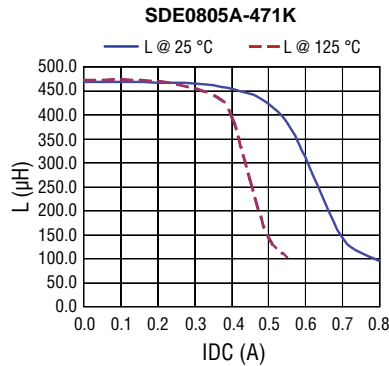
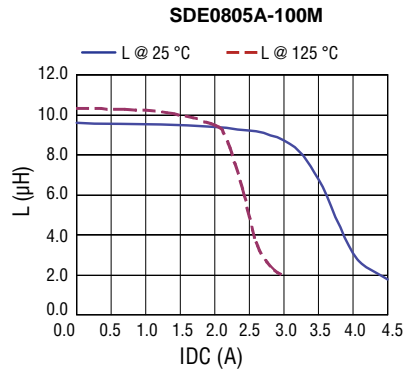
**WARNING**  
Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\* 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.

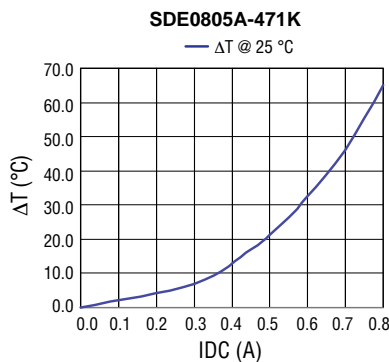
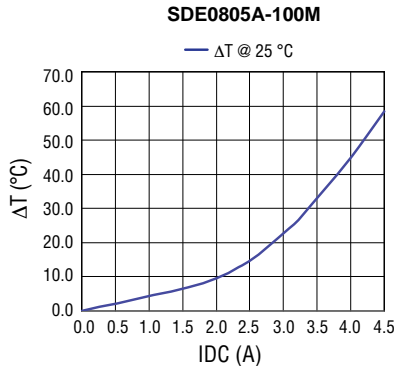
# SDE0805A Series - SMD Power Inductors



## Inductance vs. IDC



## Temperature Rise vs. IDC



## Electrical Schematic



## How to Order

**SDE0805A - 100M**

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

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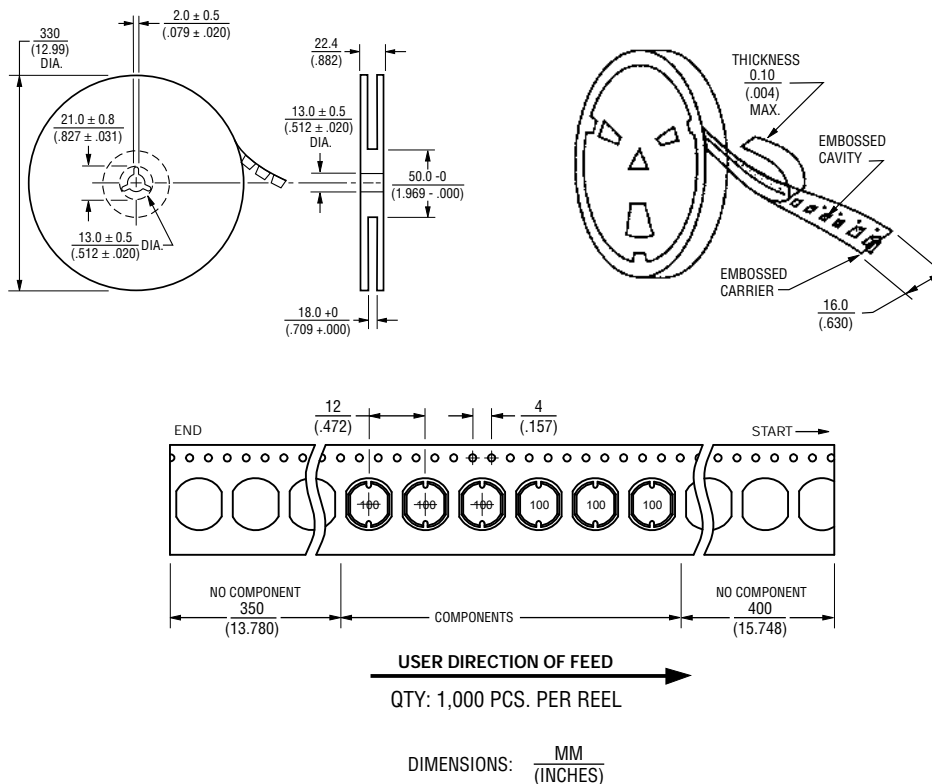
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## Soldering Profile



## Packaging Specifications



REV. 11/19

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