



**THE DATASHEET OF  
SDE0403A-680K**





### Features

- High saturation current
- Inductance range: 1.0 to 68  $\mu$ H
- Heating current up to 2.7 A
- Dimensions: 4.5 x 4 x 3.2 mm
- AEC-Q200 compliant
- RoHS compliant\* and halogen free\*\*

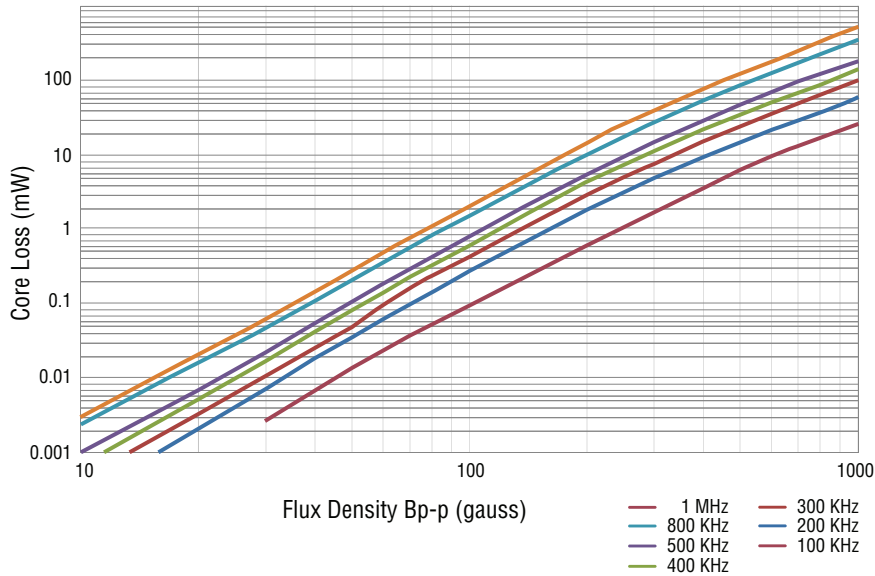
## SDE0403A Series - SMD Power Inductors

### 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. (%)						
SDE0403A-1R0M	1.0	$\pm 20$	113	0.0193	0.048	2.7	4.8	490
SDE0403A-2R2M	2.2	$\pm 20$	76	0.0318	0.071	2.3	3.3	335
SDE0403A-3R3M	3.3	$\pm 20$	64	0.0469	0.086	2.0	2.5	255
SDE0403A-4R7M	4.7	$\pm 20$	50	0.0645	0.108	1.65	2.2	220
SDE0403A-6R8M	6.8	$\pm 20$	41	0.0936	0.126	1.45	1.7	182
SDE0403A-8R2M	8.2	$\pm 20$	38	0.106	0.142	1.4	1.6	163
SDE0403A-100M	10	$\pm 20$	36	0.127	0.172	1.05	1.4	148
SDE0403A-120M	12	$\pm 20$	32	0.146	0.197	1.0	1.3	135
SDE0403A-150M	15	$\pm 20$	29	0.192	0.259	0.85	1.2	120
SDE0403A-180M	18	$\pm 20$	28	0.237	0.309	0.75	1.1	112
SDE0403A-220M	22	$\pm 20$	25	0.27	0.351	0.7	0.95	98
SDE0403A-270M	27	$\pm 20$	22	0.322	0.419	0.65	0.85	90
SDE0403A-330K	33	$\pm 10$	20	0.373	0.485	0.6	0.8	83
SDE0403A-390K	39	$\pm 10$	18	0.449	0.561	0.55	0.7	75
SDE0403A-470K	47	$\pm 10$	16	0.505	0.631	0.5	0.65	68
SDE0403A-560K	56	$\pm 10$	15	0.736	0.92	0.45	0.6	62
SDE0403A-680K	68	$\pm 10$	13	0.822	1.028	0.4	0.55	56

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

### Core Loss vs. Flux Density



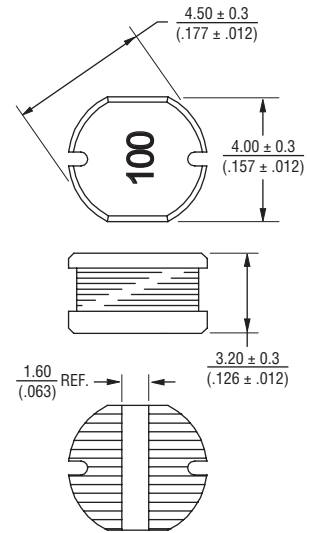
### General Specifications

Test Frequency / Voltage ..... 1 MHz / 1 V  
 Operating Temperature ..... -40 °C to +125 °C  
 (Temperature rise included)  
 Storage Temperature ..... -40 °C to +125 °C  
 Temperature Rise ..... 40 °C typ. at rated Irms  
 Inductance Drop ..... 10 % typ. at Isat

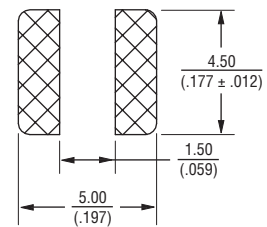
### Materials

Core ..... Ferrite  
 Wire ..... Enameled copper  
 Terminal Finish ..... Sn  
 Packaging ..... 2000 pcs. per reel

### Product Dimensions



### Recommended Layout



\* 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.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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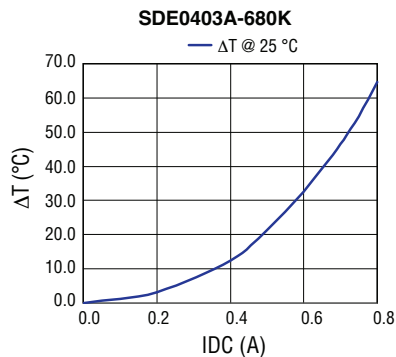
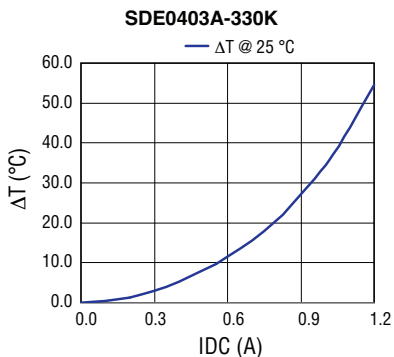
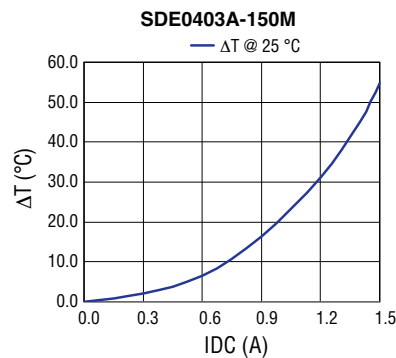
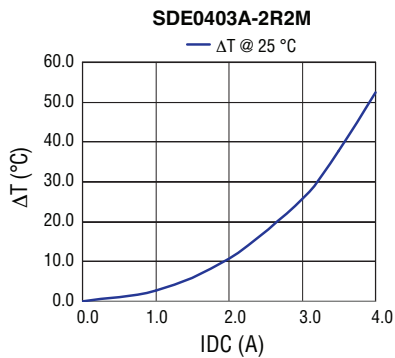
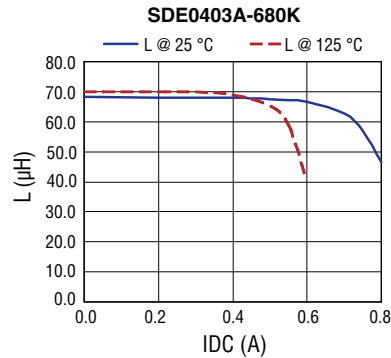
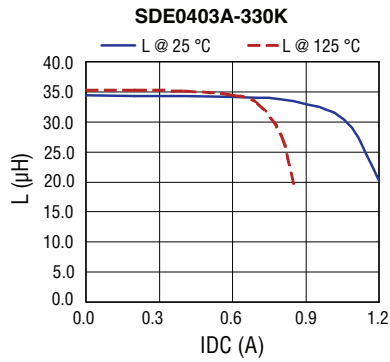
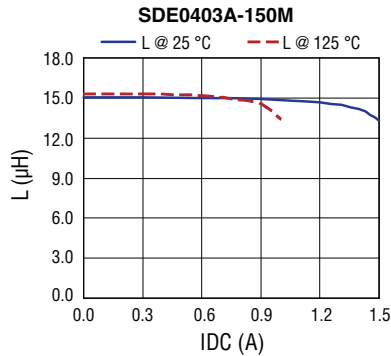
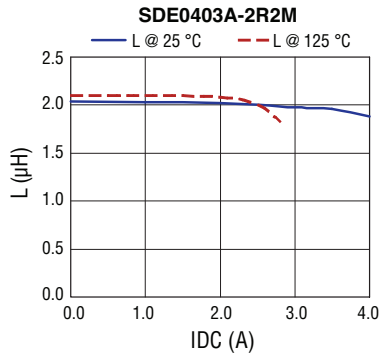


**WARNING**  
 Cancer and Reproductive Harm  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

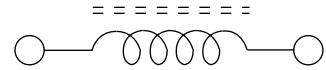
# SDE0403A Series - SMD Power Inductors

**BOURNS®**

## Inductance vs. IDC



## Electrical Schematic



## How to Order

**SDE0403A - 100M**

Model \_\_\_\_\_

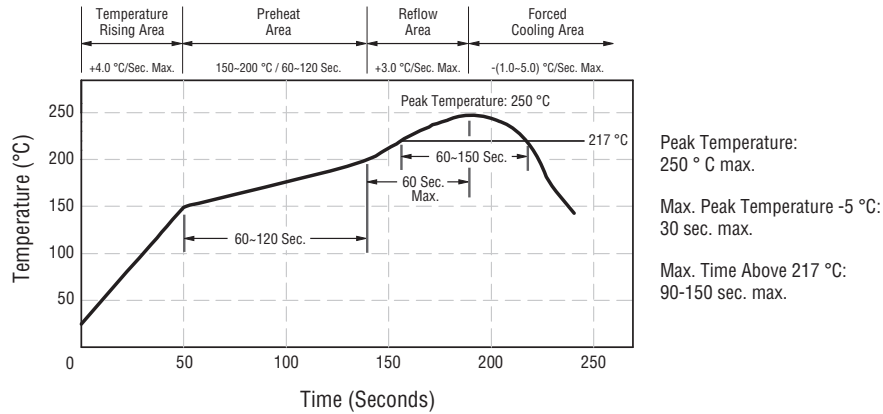
Value Code (see table) \_\_\_\_\_

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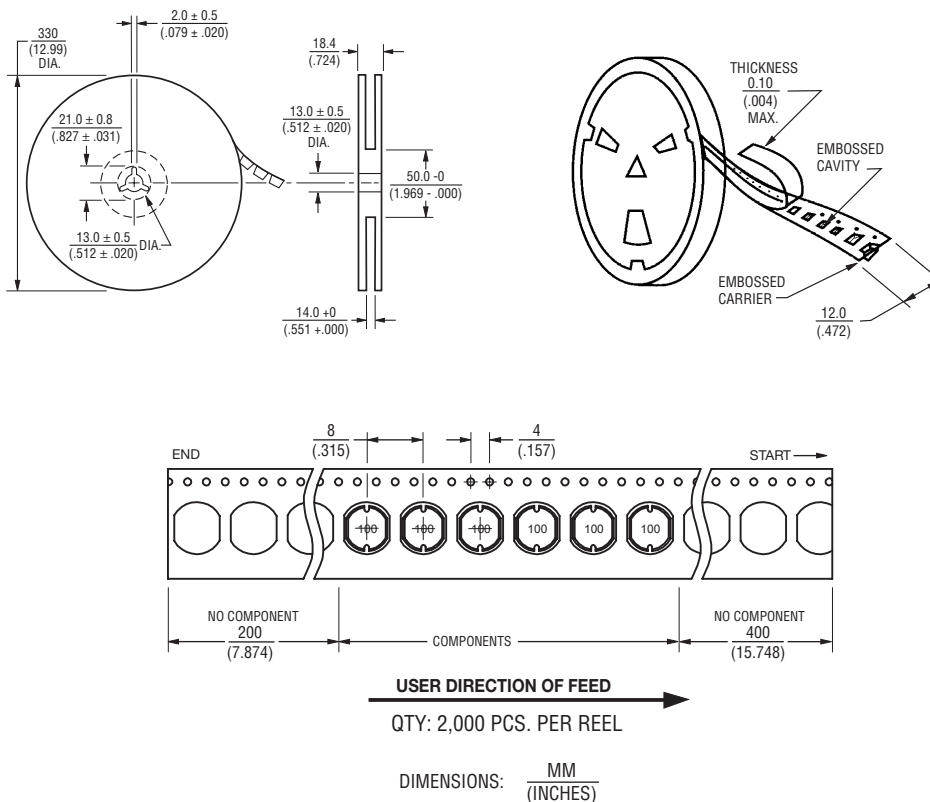
# SDE0403A Series - SMD Power Inductors

**BOURNS®**

## Soldering Profile



## Packaging Specifications



REV. 05/20

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