



Features

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

Applications

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

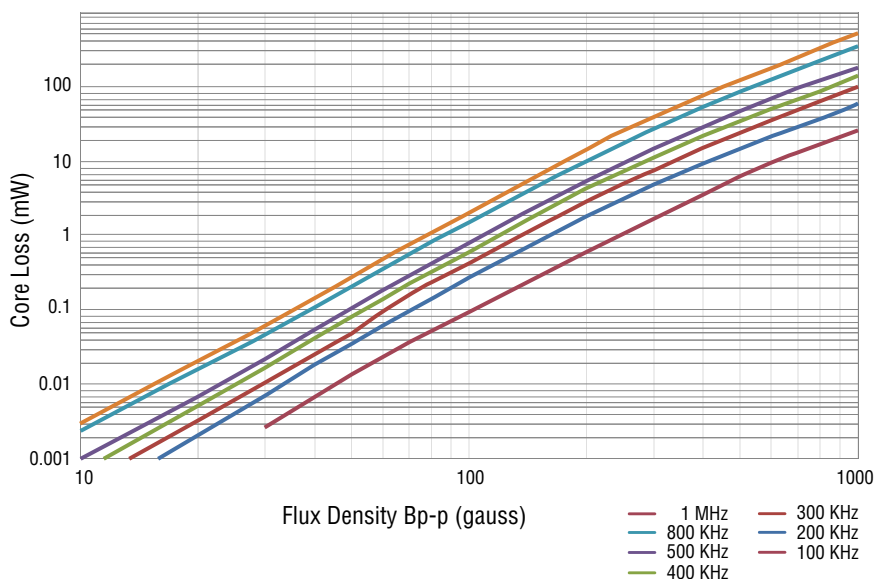
SDE0403A Series - SMD Power Inductors

Electrical Specifications @ 25 °C

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

***K-Factor: To calculate core flux density, Bp-p (gauss) = K x L(μ H) x Δ 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

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

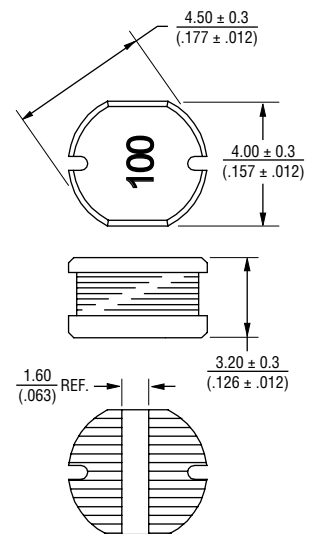
Core.....Ferrite

Wire.....Enameled copper

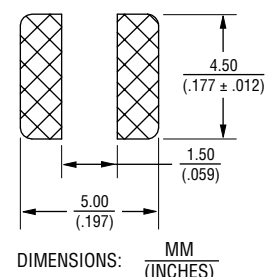
Terminal FinishSn

Packaging.....2000 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.

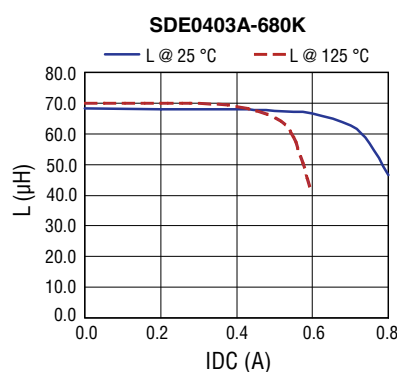
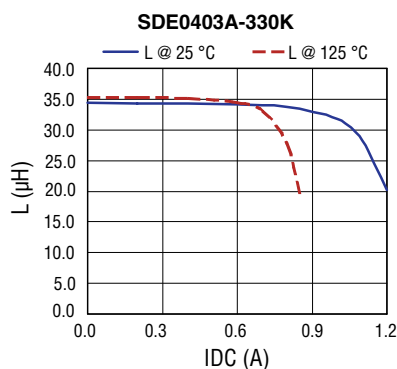
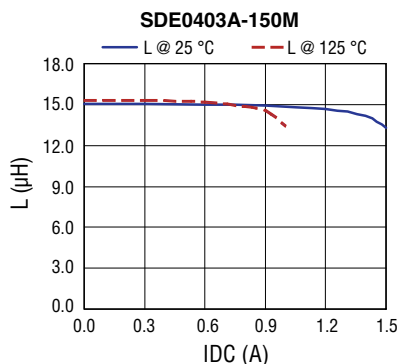
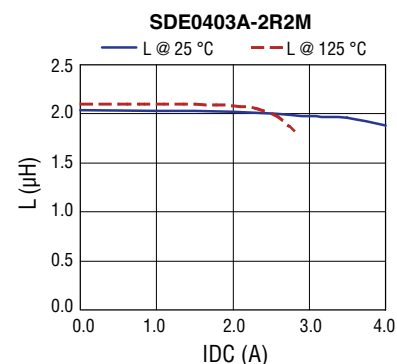
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

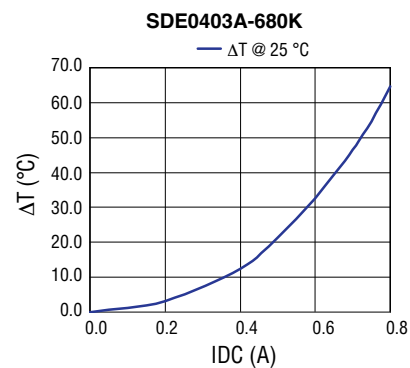
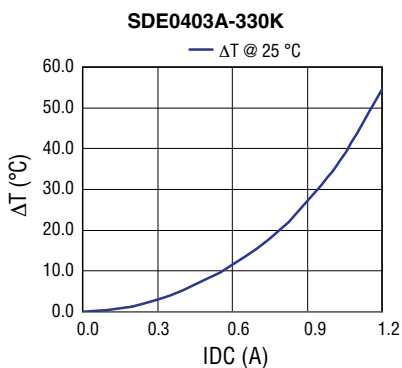
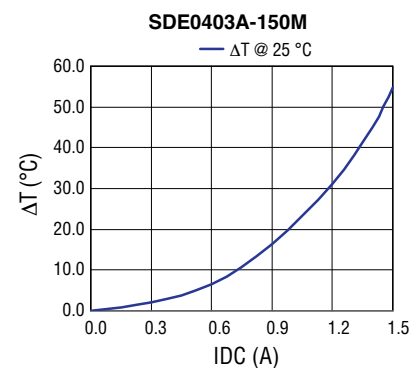
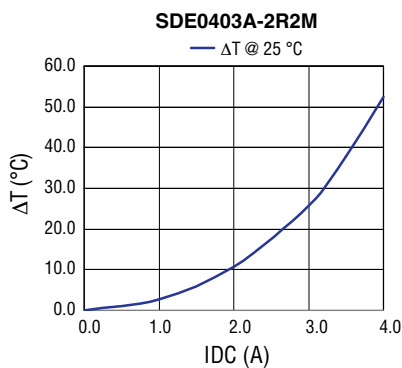
SDE0403A Series - SMD Power Inductors

BOURNS®

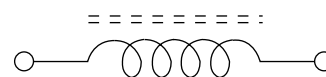
Inductance vs. IDC



Temperature Rise vs. IDC



Electrical Schematic



How to Order

SDE0403A - 100M

Model _____
Value Code (see table) _____

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.

BOURNS®

The graph illustrates a heat treatment cycle with the following parameters:

- Temperature Rising Area:** +4.0 °C/Sec. Max.
- Preheat Area:** 150-200 °C / 60-120 Sec.
- Reflow Area:** 3.0 °C/Sec. Max.
- Forced Cooling Area:** -1.0-5.0 °C/Sec. Max.

Key temperature points and time intervals shown on the graph:

- Peak Temperature: 250 °C
- Final Temperature: 217 °C
- Time intervals: 60-120 Sec. (Preheat), 60-150 Sec. (Reflow)

Max. Time Above 217 °C:
90-150 sec. max.

Technical drawing of a 100 ohm 1/4 watt resistor, showing top, side, and end views with dimensions in mm and inches.

Top View Dimensions:

- Overall width: 330 ± 0.5 mm ($12.99 \pm .020$ inches)
- Distance from left edge to center of embossed cavity: 21.0 ± 0.8 mm ($.827 \pm .031$ inches)
- Distance from center of embossed cavity to right edge: 13.0 ± 0.5 mm ($.512 \pm .020$ inches)

Side View Dimensions:

- Overall height: 18.4 mm ($.724$ inches)
- Distance from top edge to center of embossed cavity: 13.0 ± 0.5 mm ($.512 \pm .020$ inches)
- Distance from center of embossed cavity to bottom edge: $50.0 - 0$ mm ($1.969 - .000$ inches)
- Distance from left edge to center of embossed cavity: $14.0 + 0$ mm ($.551 + .000$ inches)

End View Dimensions:

- Overall length: 12.0 mm ($.472$ inches)
- Thickness: 0.10 mm ($.004$ inches) MAX.
- Labels: THICKNESS, EMBOSSED CAVITY, EMBOSSED CARRIER

End View Details:

- Resistance value: 100
- Power rating: 100
- Direction of feed: USER DIRECTION OF FEED (indicated by an arrow pointing right)
- Quantity: QTY: 2,000 PCS. PER REEL
- Dimensions: DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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.