



## Features

- High saturation current
- Inductance range: 1.2 to 150  $\mu$ H
- Heating current up to 5.3 A
- Dimensions: 5.8 x 5.2 x 4.5 mm
- AEC-Q200 qualified
- RoHS compliant\* and halogen free\*\*

## Applications

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

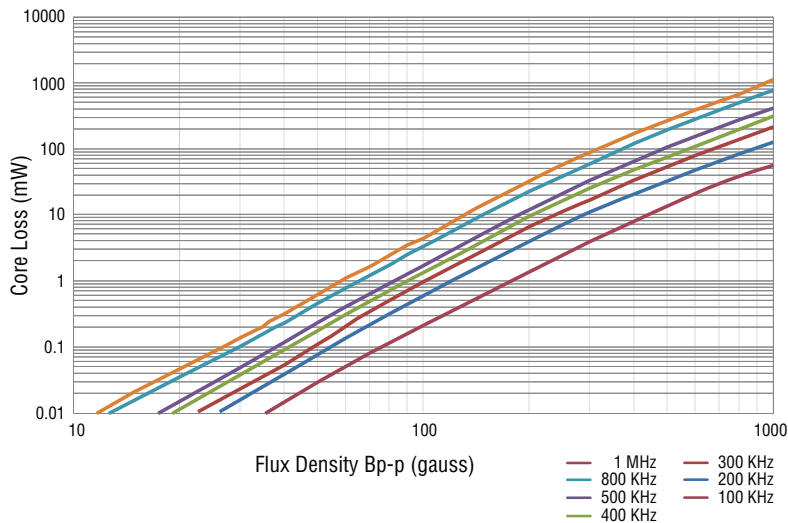
## SDE0604A Series - SMD Power Inductors

### 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						
SDE0604A-1R2M	1.2	$\pm 20$	1 MHz / 1 V	155	0.016	0.02	5.3	6.0	355
SDE0604A-1R5M	1.5	$\pm 20$	1 MHz / 1 V	123	0.0185	0.024	5.0	5.3	307
SDE0604A-2R2M	2.2	$\pm 20$	1 MHz / 1 V	80	0.0229	0.031	4.35	4.2	243
SDE0604A-2R7M	2.7	$\pm 20$	1 MHz / 1 V	60	0.0278	0.055	4.0	3.8	220
SDE0604A-3R3M	3.3	$\pm 20$	1 MHz / 1 V	50	0.0299	0.06	3.8	3.5	200
SDE0604A-3R9M	3.9	$\pm 20$	1 MHz / 1 V	44	0.034	0.065	3.6	3.2	184
SDE0604A-4R7M	4.7	$\pm 20$	1 MHz / 1 V	47	0.0382	0.07	3.4	3.0	171
SDE0604A-5R6M	5.6	$\pm 20$	1 MHz / 1 V	41	0.0419	0.075	3.2	2.75	159
SDE0604A-6R8M	6.8	$\pm 20$	1 MHz / 1 V	36	0.0467	0.08	3.0	2.4	140
SDE0604A-8R2M	8.2	$\pm 20$	1 MHz / 1 V	31	0.0537	0.09	2.8	2.2	125
SDE0604A-100M	10	$\pm 20$	1 MHz / 1 V	32	0.0621	0.10	2.6	2.0	118
SDE0604A-120M	12	$\pm 20$	1 MHz / 1 V	29	0.0675	0.12	2.5	1.85	107
SDE0604A-150M	15	$\pm 20$	1 MHz / 1 V	26	0.0947	0.14	2.3	1.65	94
SDE0604A-180M	18	$\pm 20$	1 MHz / 1 V	24	0.114	0.15	2.0	1.5	87
SDE0604A-220M	22	$\pm 20$	1 MHz / 1 V	19	0.128	0.18	1.8	1.35	78
SDE0604A-270M	27	$\pm 20$	1 MHz / 1 V	18	0.14	0.20	1.7	1.2	71
SDE0604A-330M	33	$\pm 20$	1 MHz / 1 V	17	0.184	0.23	1.55	1.1	63
SDE0604A-390M	39	$\pm 20$	1 MHz / 1 V	17	0.215	0.32	1.4	1.0	58
SDE0604A-470M	47	$\pm 20$	1 MHz / 1 V	14	0.258	0.37	1.25	0.9	53
SDE0604A-560K	56	$\pm 10$	1 MHz / 1 V	12	0.298	0.42	1.1	0.82	50
SDE0604A-680K	68	$\pm 10$	1 MHz / 1 V	11	0.343	0.46	1.0	0.74	45
SDE0604A-820K	82	$\pm 10$	1 MHz / 1 V	8	0.436	0.60	0.9	0.68	42
SDE0604A-101K	100	$\pm 10$	1 kHz / 1 V	7.5	0.559	0.70	0.8	0.62	38
SDE0604A-121K	120	$\pm 10$	1 kHz / 1 V	7.5	0.599	0.90	0.75	0.6	35
SDE0604A-151K	150	$\pm 10$	1 kHz / 1 V	7	0.9	1.1	0.52	0.52	31

\*\*\*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.

### Core Loss vs. Flux Density



### 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<sub>rms</sub>

Inductance Drop ..... 10 % typ. at I<sub>sat</sub>

Moisture Sensitivity Level ..... 1

ESD Classification (HBM) ..... N/A

### Materials

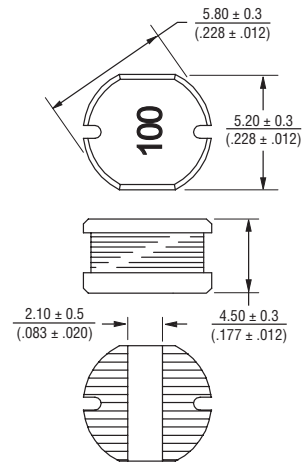
Core ..... Ferrite

Wire ..... Enameled copper

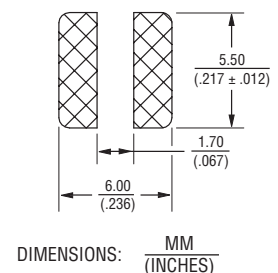
Terminal Finish ..... Sn

Packaging ..... 1000 pcs. per reel

### Product Dimensions



### Recommended Layout



\* RoHS Directive 2002/95/EC Jan. 27, 2003 including annex & RoHS Recast 2011/65/EU June 8, 2011.

\*\* 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.

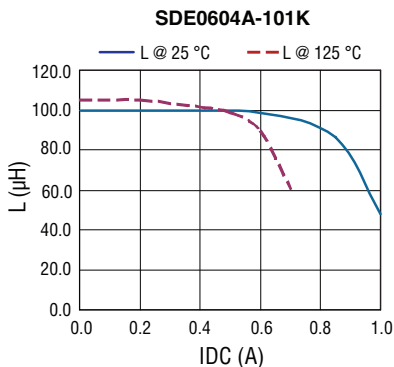
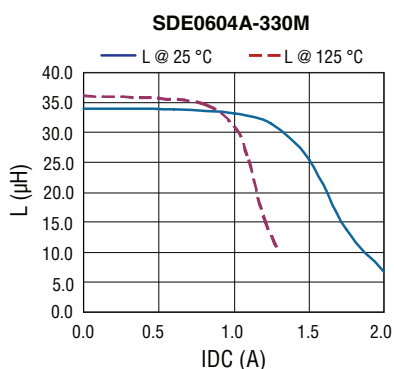
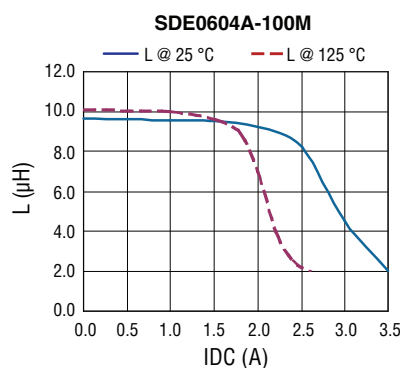
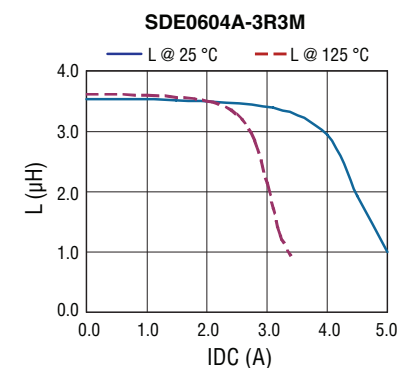
Users should verify actual device performance in their specific applications.

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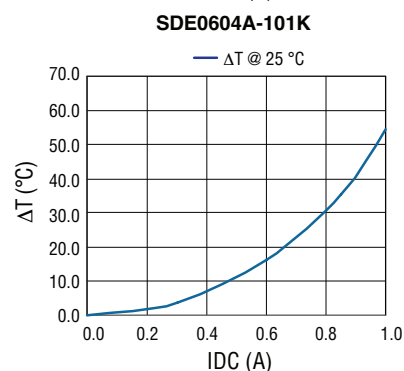
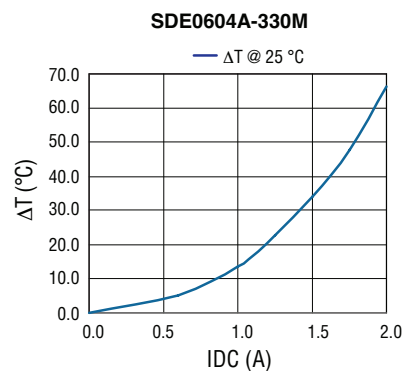
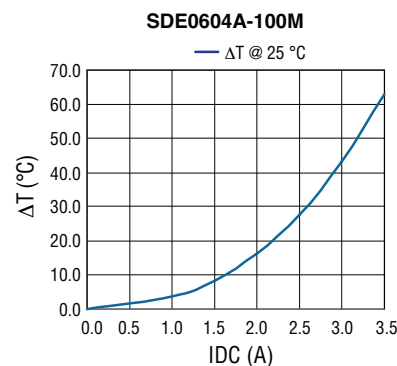
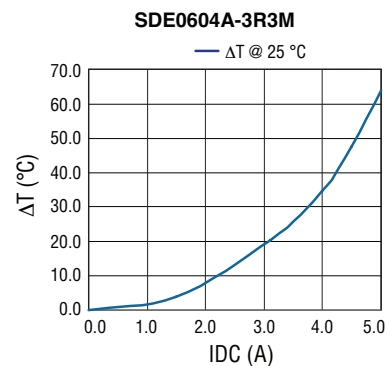
# SDE0604A Series - SMD Power Inductors

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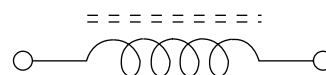
## Inductance vs. IDC



## Temperature Rise vs. IDC



## Electrical Schematic



## How to Order

**SDE0604A - 100M**

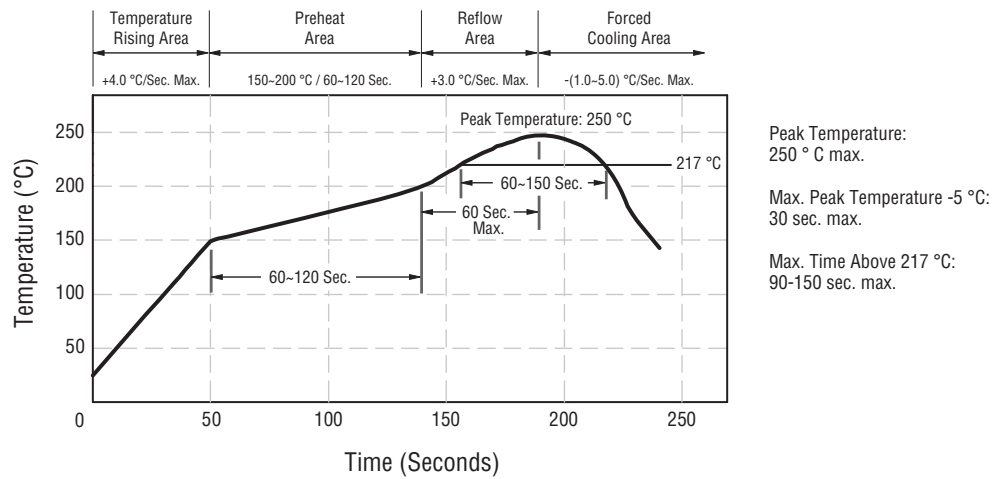
Model \_\_\_\_\_  
Value Code (see table) \_\_\_\_\_

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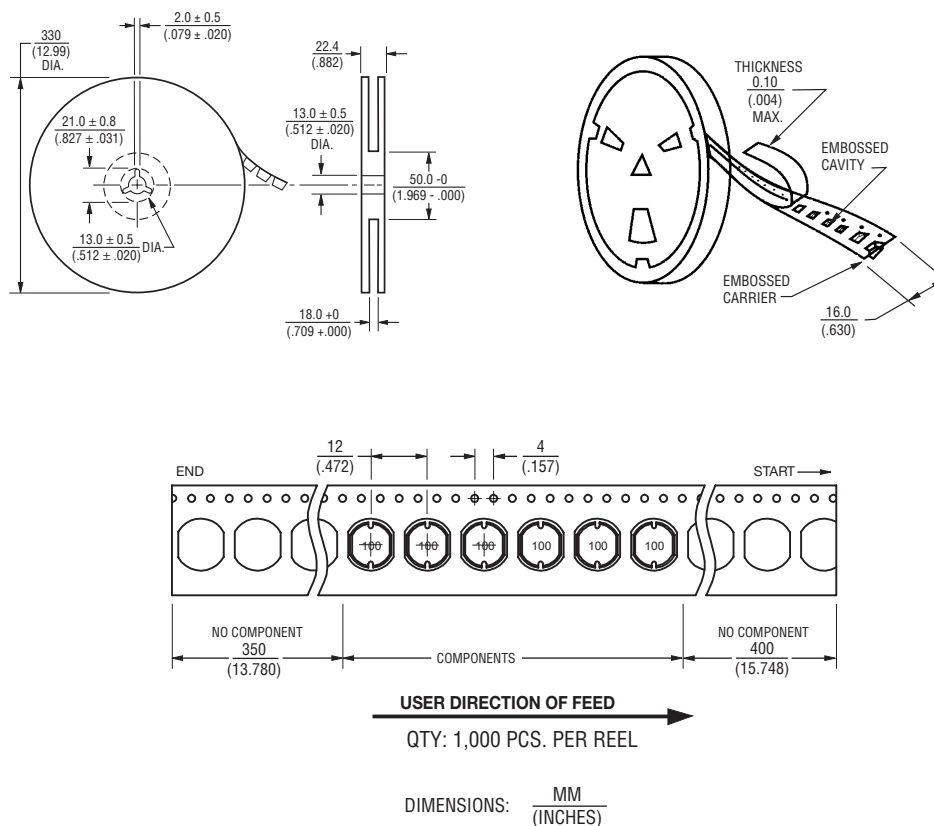
# SDE0604A Series - SMD Power Inductors

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## Soldering Profile



## Packaging Specifications



REV. 10/17

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