



Features

- High saturation current
- Inductance range: 1.0 to 68 μH
- 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

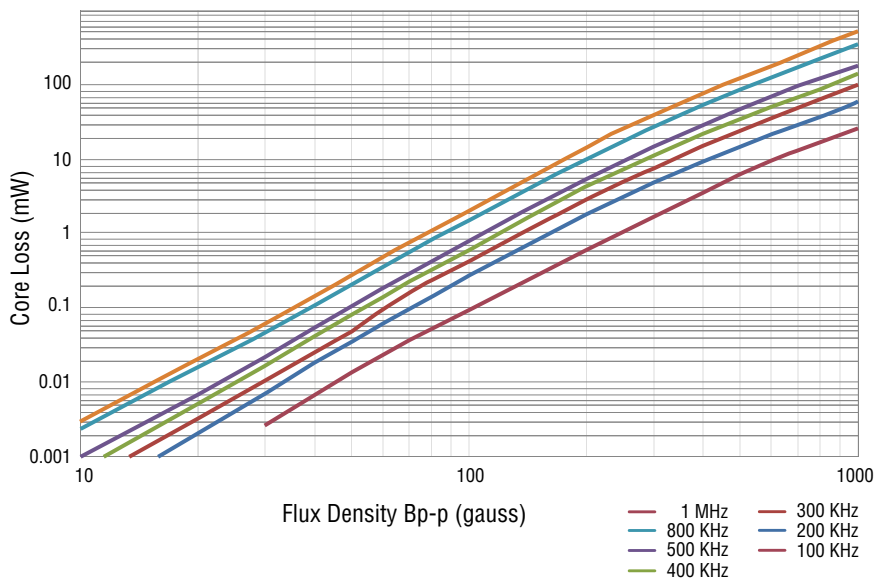
SDE0403A Series - SMD Power Inductors

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 (μH) | 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, B_{p-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



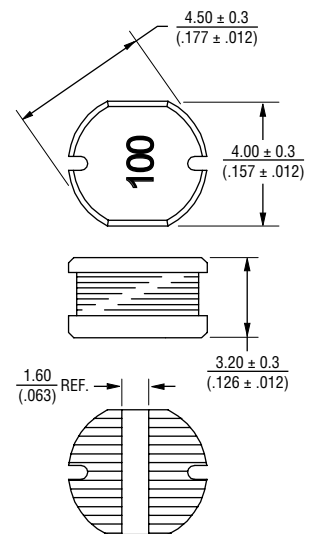
General Specifications

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}

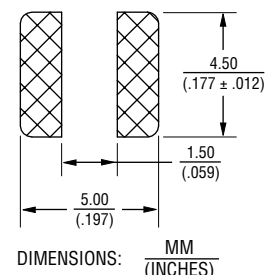
Materials

Core Ferrite
 Wire Enameled copper
 Terminal Finish Sn
 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.

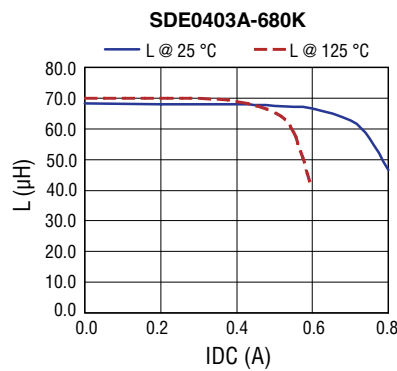
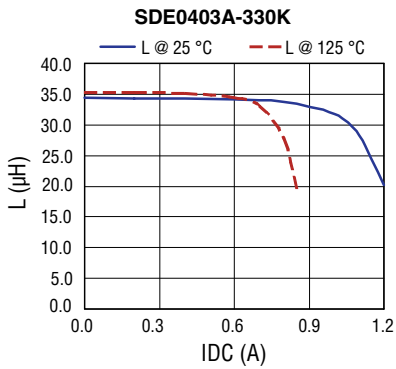
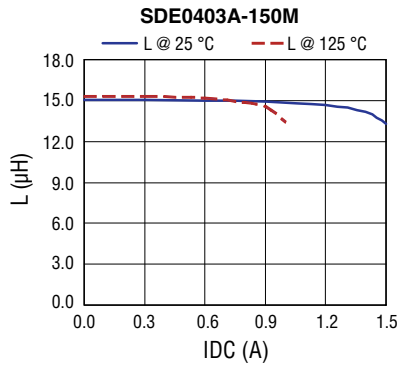
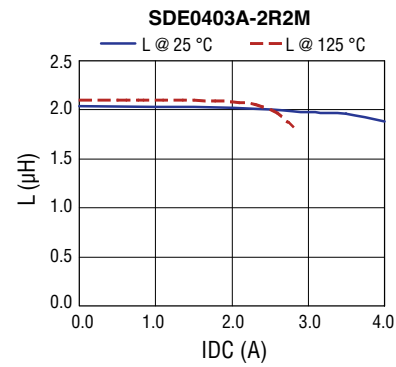
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

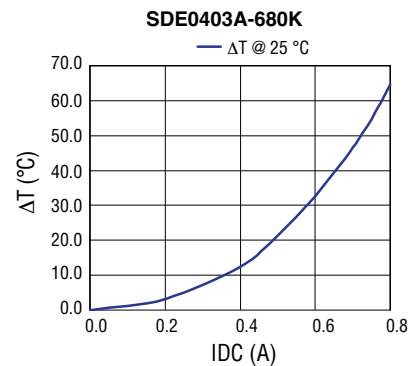
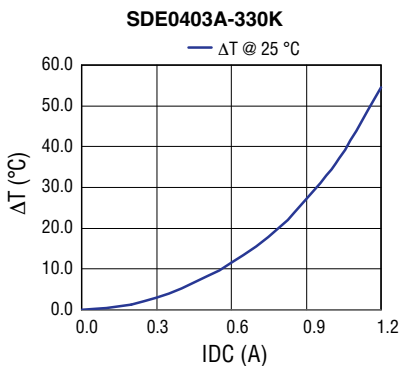
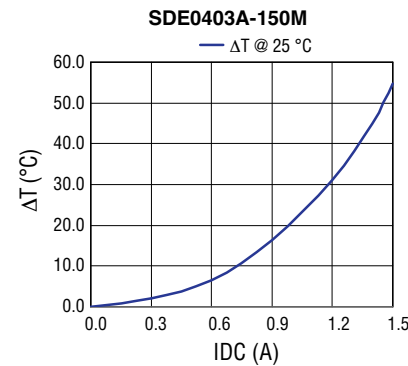
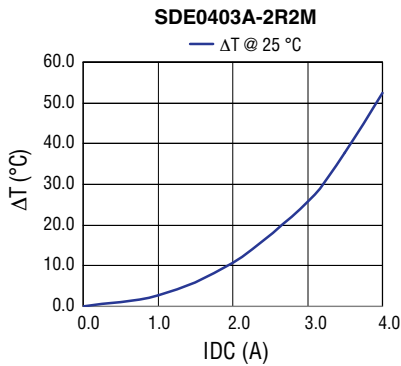
SDE0403A Series - SMD Power Inductors

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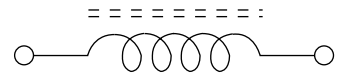
Inductance vs. IDC



Temperature Rise vs. IDC



Electrical Schematic



How to Order

SDE0403A - 100M

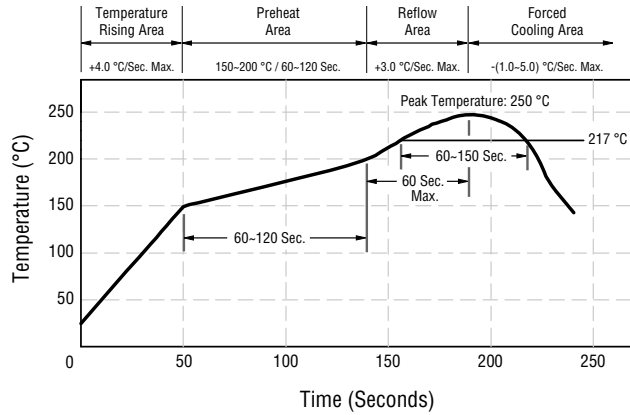
Model _____
Value Code (see table) _____

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Soldering Profile

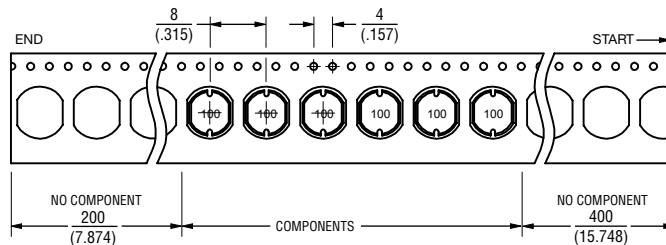
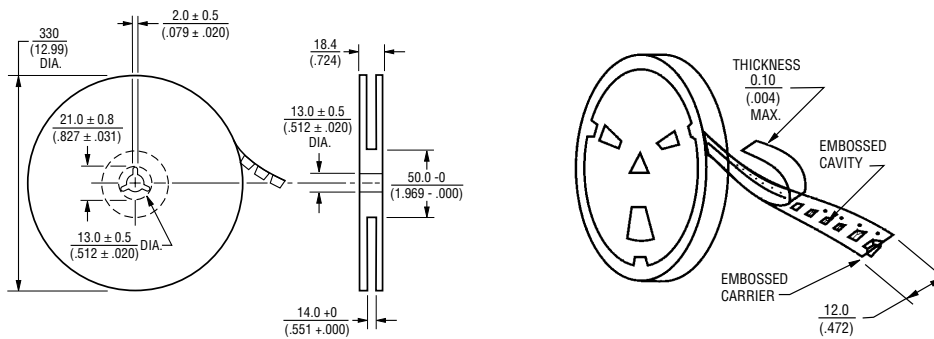


Peak Temperature:
250 °C max.

Max. Peak Temperature -5 °C:
30 sec. max.

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

Packaging Specifications



USER DIRECTION OF FEED →

QTY: 2,000 PCS. PER REEL

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

REV. 02/17

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