



**THE DATASHEET OF
SDE0604A-8R2M**





Features

- High saturation current
- Inductance range: 1.2 to 220 μ H
- Heating current up to 5.3 A
- Dimensions: 5.8 x 5.2 x 4.5 mm
- AEC-Q200 compliant
- RoHS compliant* and halogen free**

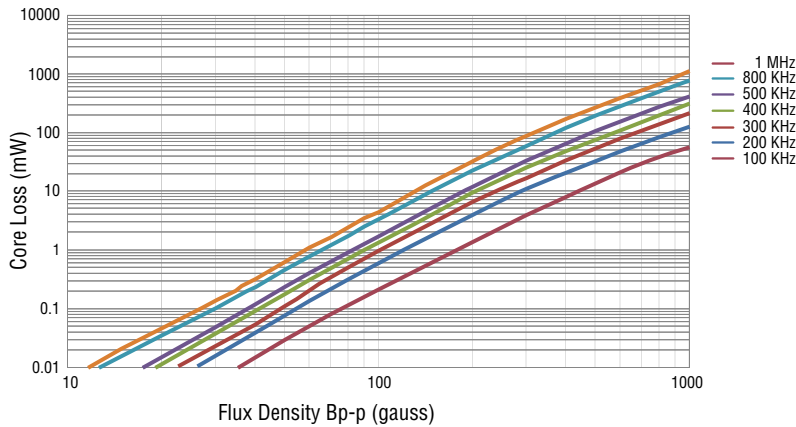
SDE0604A Series - SMD Power Inductors

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. (%) | Test Freq./ Voltage | | | | | | |
| SDE0604A-1R2M | 1.2 | ± 20 | 1 MHz / 1 V | 155 | 0.016 | 0.02 | 5.3 | 6.0 | 355 |
| SDE0604A-1R5M | 1.5 | ± 20 | 1 MHz / 1 V | 123 | 0.0185 | 0.024 | 5.0 | 5.3 | 307 |
| SDE0604A-2R2M | 2.2 | ± 20 | 1 MHz / 1 V | 80 | 0.0229 | 0.031 | 4.35 | 4.2 | 243 |
| SDE0604A-2R7M | 2.7 | ± 20 | 1 MHz / 1 V | 60 | 0.0278 | 0.055 | 4.0 | 3.8 | 220 |
| SDE0604A-3R3M | 3.3 | ± 20 | 1 MHz / 1 V | 50 | 0.0299 | 0.06 | 3.8 | 3.5 | 200 |
| SDE0604A-3R9M | 3.9 | ± 20 | 1 MHz / 1 V | 44 | 0.034 | 0.065 | 3.6 | 3.2 | 184 |
| SDE0604A-4R7M | 4.7 | ± 20 | 1 MHz / 1 V | 47 | 0.0382 | 0.07 | 3.4 | 3.0 | 171 |
| SDE0604A-5R6M | 5.6 | ± 20 | 1 MHz / 1 V | 41 | 0.0419 | 0.075 | 3.2 | 2.75 | 159 |
| SDE0604A-6R8M | 6.8 | ± 20 | 1 MHz / 1 V | 36 | 0.0467 | 0.08 | 3.0 | 2.4 | 140 |
| SDE0604A-8R2M | 8.2 | ± 20 | 1 MHz / 1 V | 31 | 0.0537 | 0.09 | 2.8 | 2.2 | 125 |
| SDE0604A-100M | 10 | ± 20 | 1 MHz / 1 V | 32 | 0.0621 | 0.10 | 2.6 | 2.0 | 118 |
| SDE0604A-120M | 12 | ± 20 | 1 MHz / 1 V | 29 | 0.0675 | 0.12 | 2.5 | 1.85 | 107 |
| SDE0604A-150M | 15 | ± 20 | 1 MHz / 1 V | 26 | 0.0947 | 0.14 | 2.3 | 1.65 | 94 |
| SDE0604A-180M | 18 | ± 20 | 1 MHz / 1 V | 24 | 0.114 | 0.15 | 2.0 | 1.5 | 87 |
| SDE0604A-220M | 22 | ± 20 | 1 MHz / 1 V | 19 | 0.128 | 0.18 | 1.8 | 1.35 | 78 |
| SDE0604A-270M | 27 | ± 20 | 1 MHz / 1 V | 18 | 0.14 | 0.20 | 1.7 | 1.2 | 71 |
| SDE0604A-330M | 33 | ± 20 | 1 MHz / 1 V | 17 | 0.184 | 0.23 | 1.55 | 1.1 | 63 |
| SDE0604A-390M | 39 | ± 20 | 1 MHz / 1 V | 17 | 0.215 | 0.32 | 1.4 | 1.0 | 58 |
| SDE0604A-470M | 47 | ± 20 | 1 MHz / 1 V | 14 | 0.258 | 0.37 | 1.25 | 0.9 | 53 |
| SDE0604A-560K | 56 | ± 10 | 1 MHz / 1 V | 12 | 0.298 | 0.42 | 1.1 | 0.82 | 50 |
| SDE0604A-680K | 68 | ± 10 | 1 MHz / 1 V | 11 | 0.343 | 0.46 | 1.0 | 0.74 | 45 |
| SDE0604A-820K | 82 | ± 10 | 1 MHz / 1 V | 8 | 0.436 | 0.60 | 0.9 | 0.68 | 42 |
| SDE0604A-101K | 100 | ± 10 | 1 kHz / 1 V | 7.5 | 0.559 | 0.70 | 0.8 | 0.62 | 38 |
| SDE0604A-121K | 120 | ± 10 | 1 kHz / 1 V | 7.5 | 0.599 | 0.90 | 0.75 | 0.6 | 35 |
| SDE0604A-151K | 150 | ± 10 | 1 kHz / 1 V | 7 | 0.9 | 1.1 | 0.52 | 0.52 | 31 |
| SDE0604A-181K | 180 | ± 10 | 1 MHz / 1 V | 6 | 1.03 | 1.38 | 0.5 | 0.5 | 29 |
| SDE0604A-221K | 220 | ± 10 | 1 MHz / 1 V | 5 | 1.325 | 1.57 | 0.47 | 0.47 | 25.8 |

***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



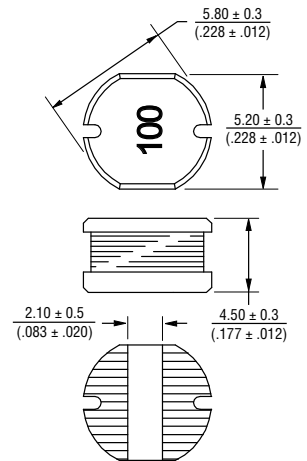
General Specifications

Operating Temperature -40 °C to +125 °C
 (Temperature rise included)
 Storage Temperature -40 °C to +125 °C
 Temperature Rise 40 °C typ. at rated I rms
 Inductance Drop 10 % typ. at I sat
 Moisture Sensitivity Level 1
 ESD Classification (HBM) N/A

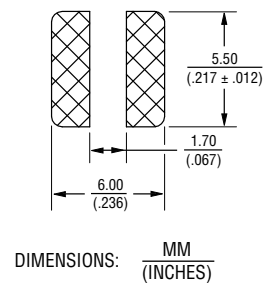
Materials

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

Product Dimensions



Recommended Layout



* RoHS Directive 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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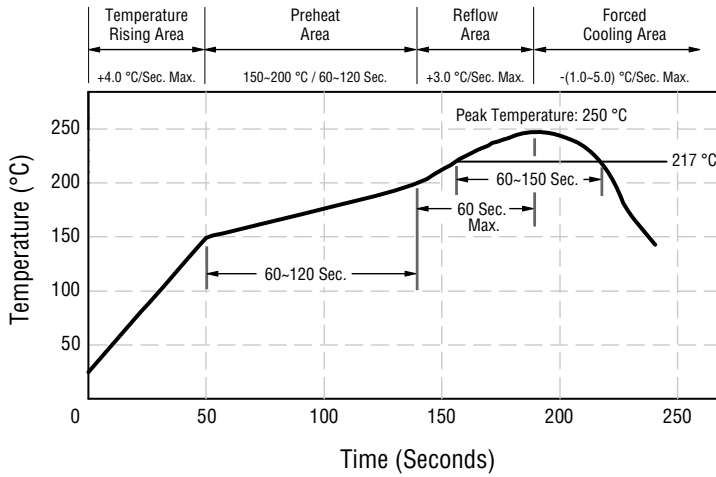


WARNING
 Cancer and Reproductive Harm
www.P65Warnings.ca.gov

SDE0604A Series - SMD Power Inductors



Soldering Profile

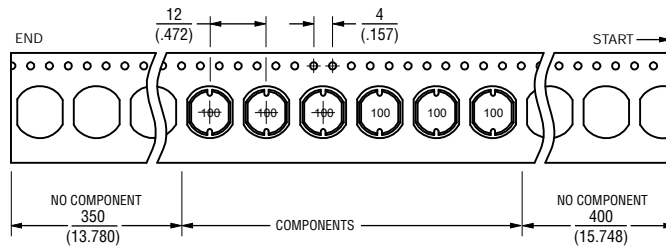
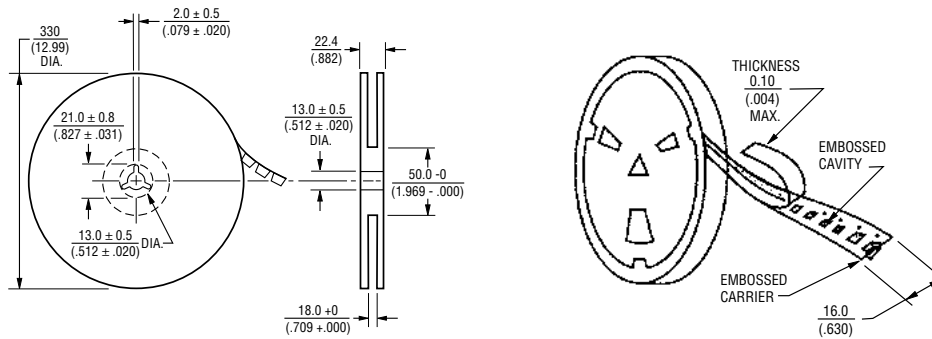


Peak Temperature:
250 °C max.

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

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

Packaging Specifications



USER DIRECTION OF FEED →
QTY: 1,000 PCS. PER REEL

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

REV. 11/19

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