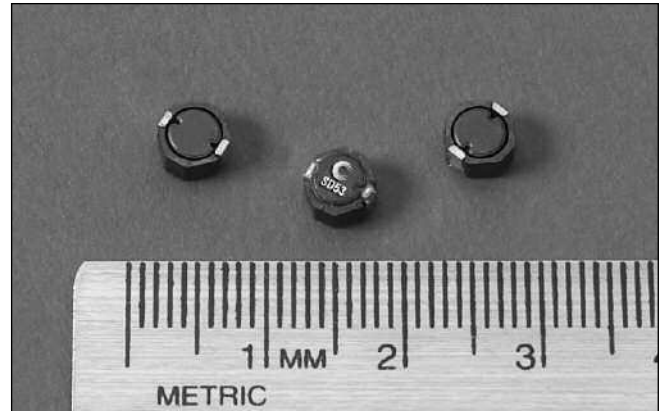


Description

- 125°C maximum total temperature operation
- Octagonal shape utilizes board space
- 5.2mm x 5.2mm x 3.0mm surface mount package
- Shielded drum core reduces EMI
- Ferrite core material
- Inductance range from 1.1uH to 100uH
- Current range from 4.08 Amps to 0.44 Amps



Applications

- High Power LED driver
- White LED and OLED displays
- DSL modems, digital cameras
- Buck, Boost Inductor
- Cellular phones, Smart phones
- MP3 players, Digital radio player
- PDA, Palmtop, and wireless handhelds
- Battery power, TFT - LCD Bias supply

Environmental Data

- Storage temperature range: -40°C to +125°C
- Operating temperature range: -40°C to +125°C (range is application specific)
- Solder reflow temperature: +260°C max. for 10 seconds maximum

Packaging

- Supplied in tape and reel packaging, 2600 per reel

| Part Number | Rated Inductance (µH) | OCL (1) µH ± 20% | Part Marking | I _{rms} (2) Amperes | I _{sat} (3) Amperes | DCR Ω @20°C (Typical) | DCR Ω @20°C (Maximum) | K-factor (4) |
|-------------|-----------------------|------------------|--------------|------------------------------|------------------------------|-----------------------|-----------------------|--------------|
| SD53-1R1-R | 1.10 | 1.10 | A | 3.25 | 4.80 | 0.017 | 0.020 | 48 |
| SD53-2R0-R | 2.00 | 2.00 | B | 2.64 | 3.30 | 0.023 | 0.027 | 35 |
| SD53-3R3-R | 3.30 | 3.30 | C | 2.26 | 2.60 | 0.029 | 0.034 | 28 |
| SD53-4R7-R | 4.70 | 4.70 | D | 2.01 | 2.10 | 0.039 | 0.045 | 21 |
| SD53-6R8-R | 6.80 | 6.80 | E | 1.65 | 1.85 | 0.059 | 0.068 | 20 |
| SD53-100-R | 10.0 | 10.0 | F | 1.41 | 1.40 | 0.077 | 0.090 | 15 |
| SD53-150-R | 15.0 | 15.0 | G | 1.10 | 1.10 | 0.122 | 0.142 | 12 |
| SD53-220-R | 22.0 | 22.0 | H | 0.81 | 0.94 | 0.179 | 0.208 | 10 |
| SD53-330-R | 33.0 | 33.0 | I | 0.75 | 0.76 | 0.221 | 0.257 | 8 |
| SD53-470-R | 47.0 | 47.0 | J | 0.64 | 0.64 | 0.303 | 0.352 | 7 |
| SD53-680-R | 68.0 | 68.0 | K | 0.52 | 0.58 | 0.452 | 0.525 | 6 |
| SD53-101-R | 100 | 100 | L | 0.44 | 0.45 | 0.689 | 0.801 | 5 |

(1) Open Circuit Inductance Test Parameters: 100kHz, 0.1V, 0.0Adc.

(2) I_{rms}: DC current for an approximate ΔT of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 125°C under worst case operating conditions verified in the end application.

(3) I_{sat} Amperes peak for approximately 30% rolloff (@25°C)

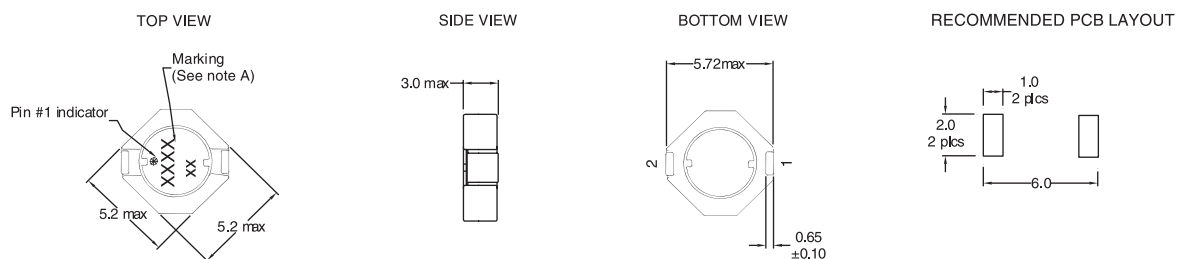
(4) K-factor: Used to determine B p-p for core loss (see graph).

B p-p = K * L * ΔI, B p-p(mT), K: (K factor from table), L: (Inductance in uH), ΔI (Peak to peak ripple current in Amps).

(5) Part Number Definition: SD53-xxx-R

SD53 = Product code and size; -xxx = Inductance value in uH; R = decimal point; If no R is present, third character = # of zeros. -R suffix = RoHS compliant

Mechanical Diagrams

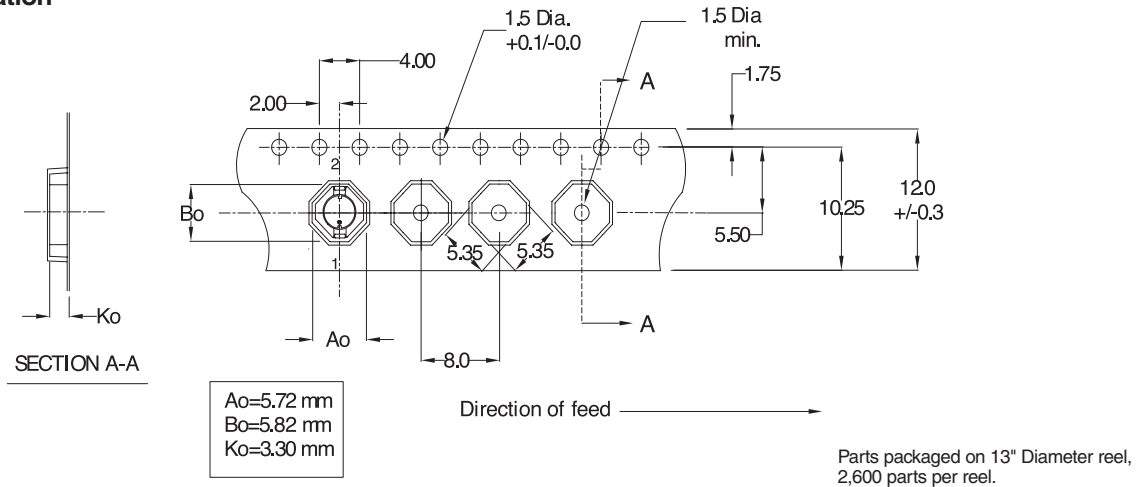


Dimensions are in millimeters.

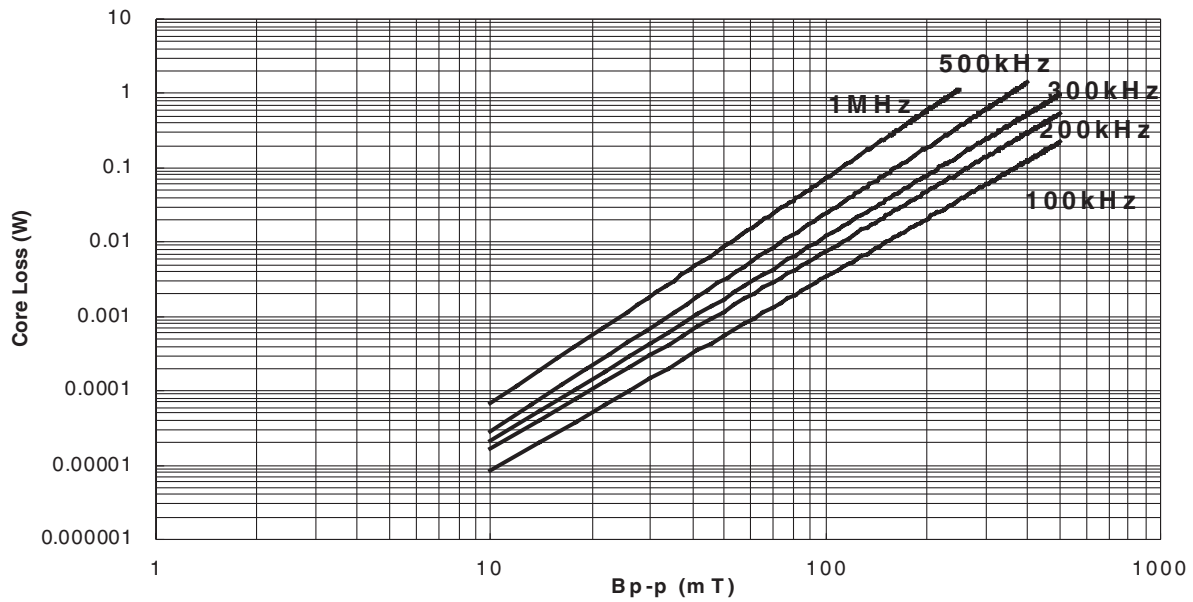
Note A. Part Marking:

4 Digit Marking: Line 1: (1st digit: Indicates inductance value per Part Marking Designator in chart above); (2nd digit: Bi-weekly production date code); (3rd digit: Last digit of the year produced), (4th digit: Manufacturing code). Line 2: 53 (Indicates the product size code)

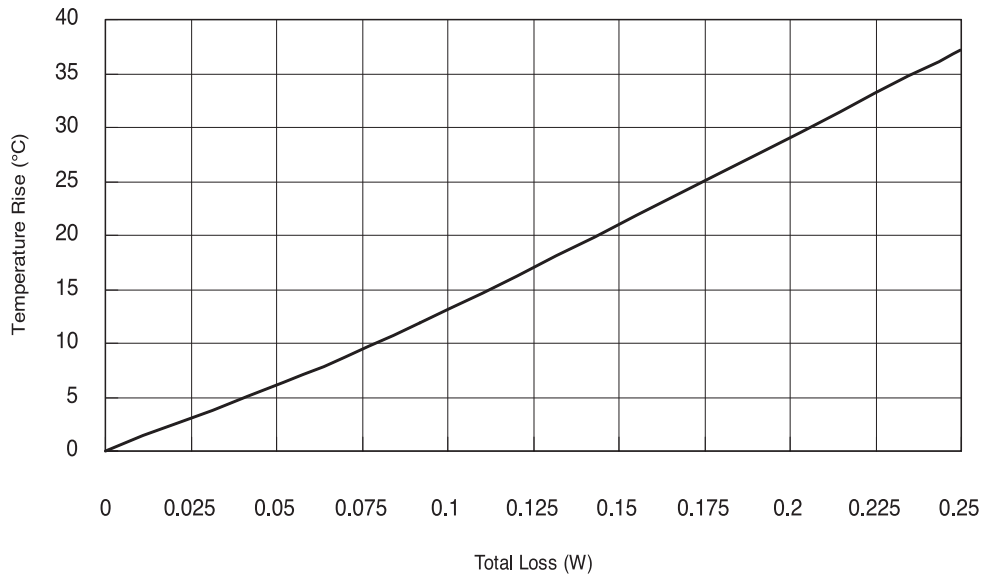
Packaging Information



Core Loss



Temperature Rise vs. Loss



Inductance Characteristics

OCL vs. Isat

