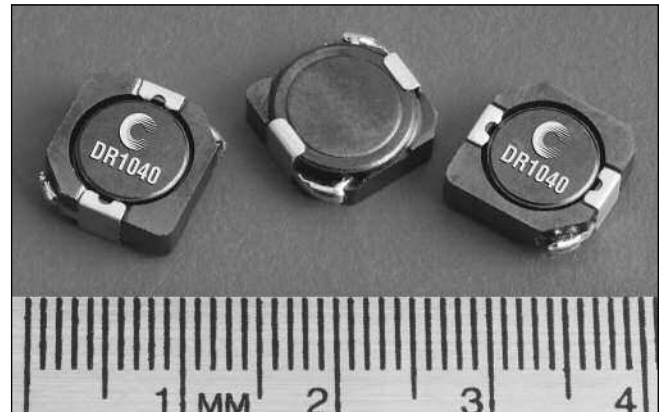


Description

- 125°C maximum total temperature operation
- Low profile surface mount inductor
- 10.3mm x 10.5mm x 4.0mm shielded drum core
- Ferrite core material
- Inductance range from 1.5µH to 330µH
- Current range from 10.0 Amps to 0.52 Amps
- Frequency range up to 1MHz



Applications

- Notebook power, Portable devices
- Wireless modems, ADSL line cards
- Point of load power supplies
- Battery chargers, Video Cards
- MP3 player, PDA's, DVD players
- LED driver for notebook computer
- Navigation system, LCD backlighting
- Buck, Boost, or Forward inductor

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, 850 per reel

| Part Number | Rated Inductance (µH) | OCL (1) µH±30% | Irms(2) Amperes | Isat (3) Amperes | DCR (Ω) mΩ @20°C (Typical) | DCR (Ω) mΩ @20°C (Maximum) | K-factor (4) |
|--------------|-----------------------|----------------|-----------------|------------------|----------------------------|----------------------------|--------------|
| DR1040-1R5-R | 1.5 | 1.4 | 6.50 | 10.00 | 6.0 | 8.1 | 15.48 |
| DR1040-2R5-R | 2.5 | 2.4 | 6.10 | 7.80 | 7.0 | 9.0 | 12.04 |
| DR1040-3R8-R | 3.8 | 3.6 | 5.50 | 6.40 | 9.6 | 13.0 | 9.85 |
| DR1040-5R2-R | 5.2 | 5.2 | 5.40 | 5.50 | 14.0 | 17.0 | 8.33 |
| DR1040-7R0-R | 7.0 | 6.8 | 4.50 | 4.80 | 17.0 | 20.0 | 7.22 |
| DR1040-8R2-R | 8.2 | 8.1 | 3.98 | 4.60 | 24.0 | 29.0 | 6.37 |
| DR1040-100-R | 10 | 9.6 | 3.80 | 4.40 | 26.0 | 35.0 | 5.70 |
| DR1040-150-R | 15 | 14.9 | 3.10 | 3.60 | 37.0 | 50.0 | 4.71 |
| DR1040-220-R | 22 | 21.1 | 2.50 | 2.90 | 54.0 | 73.0 | 4.01 |
| DR1040-330-R | 33 | 32.6 | 2.20 | 2.45 | 69.0 | 93.0 | 3.28 |
| DR1040-470-R | 47 | 45.8 | 1.90 | 2.10 | 95.0 | 128 | 2.78 |
| DR1040-680-R | 68 | 65.3 | 1.42 | 1.65 | 152 | 183 | 2.30 |
| DR1040-820-R | 82 | 86.8 | 1.29 | 1.47 | 214 | 260 | 2.04 |
| DR1040-101-R | 100 | 101.4 | 1.25 | 1.35 | 225 | 304 | 1.90 |
| DR1040-151-R | 150 | 148.3 | 0.85 | 1.15 | 356 | 430 | 1.57 |
| DR1040-221-R | 220 | 216.2 | 0.70 | 0.92 | 530 | 640 | 1.27 |
| DR1040-331-R | 330 | 323.4 | 0.52 | 0.70 | 810 | 1090 | 1.03 |

(1) Open Circuit Inductance Test Parameters: 100kHz, 0.25V, 0.0Adc.

(2) Irms: DC current for an approximate ΔT of 30°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) Isat Amperes peak for approximately 35% 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 µH), ΔI (Peak to peak ripple current in Amps).

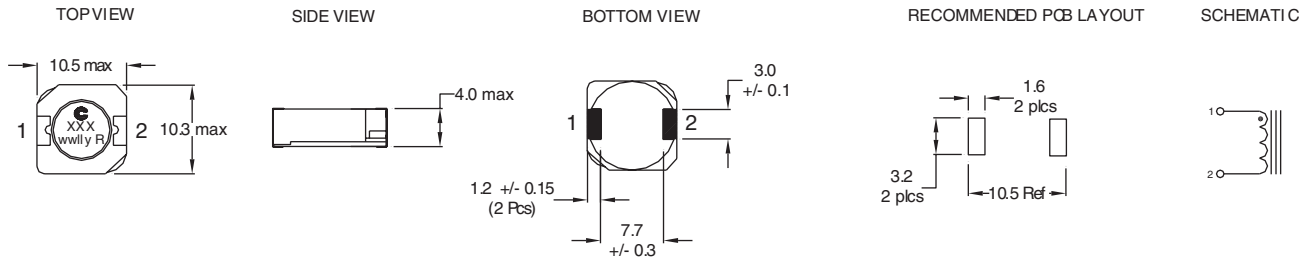
(5) Part Number Definition: DR1040-xxx-R

DR1040 = Product code and size; -xxx = Inductance value in µH;

R = decimal point; If no R is present, third character = # of zeros.

-R suffix = RoHS compliant

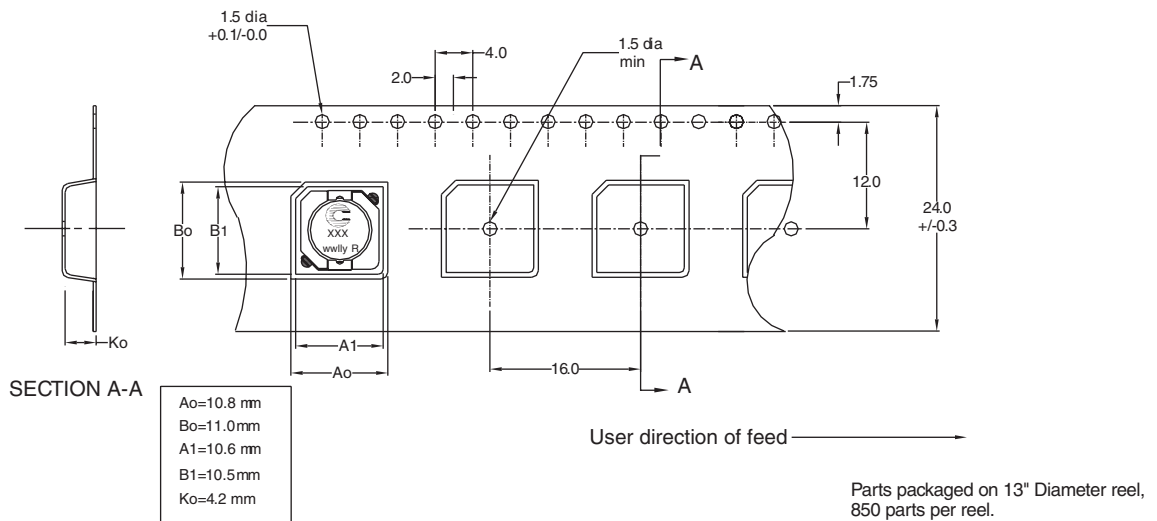
Mechanical Diagrams



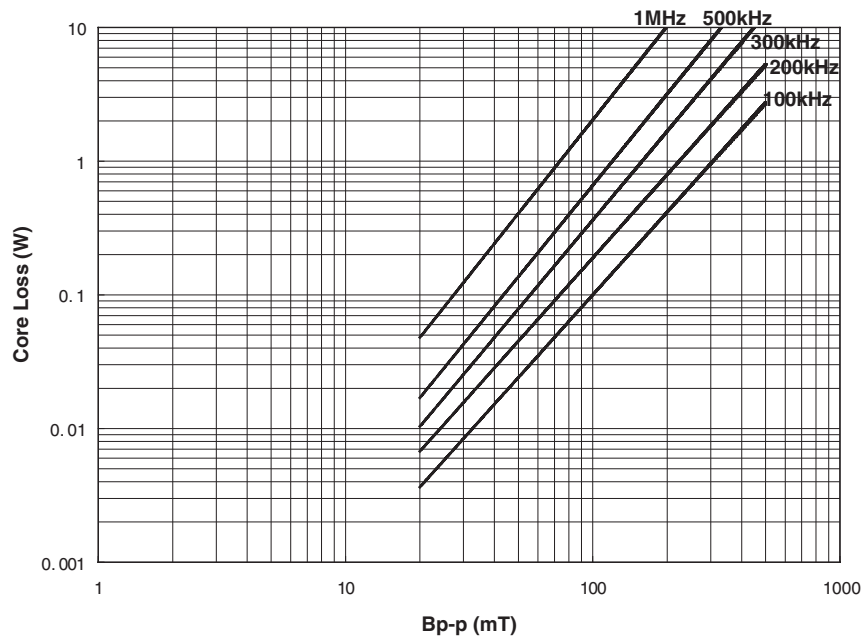
Dimensions are in millimeters.

xxx = Inductance value in uH. R = decimal point. If no R is present third character = # of zeros. wwlyy = Date code, R = Revision level.

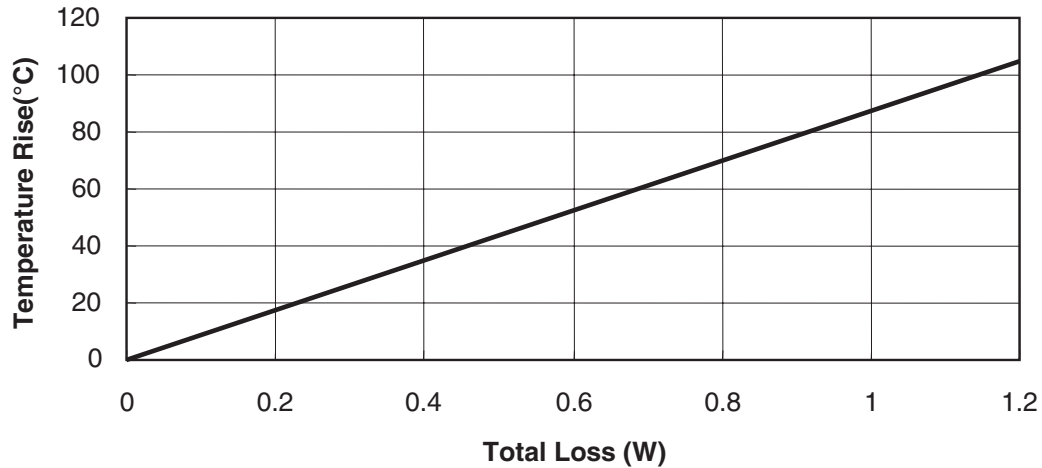
Packaging Information



Core Loss



Temperature Rise vs. Loss



Inductance Characteristics

OCL vs. Isat

