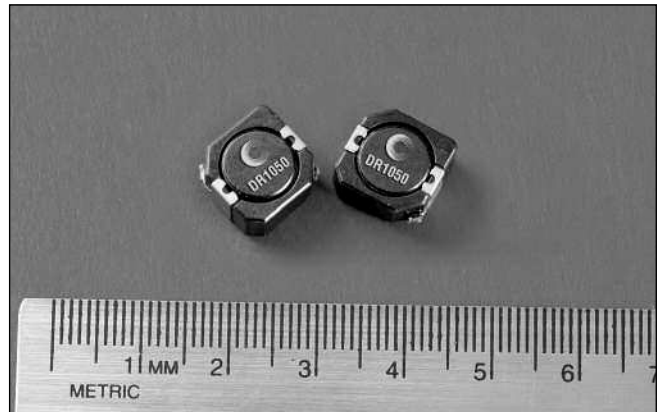


Description

- 125°C maximum total temperature operation
- Low profile surface mount inductor
- 10.3mm x 10.5mm x 5.0mm shielded drum core
- Ferrite core material
- Inductance range from 0.7µH to 1000µH
- Current range from 13.5 Amps to 0.43 Amps
- Frequency range up to 1MHz



Applications

- Computer, DVD players, and portable power devices
- Notebook power, LCD panels
- DC-DC converters
- Buck, boost, forward, and resonant converters
- Noise filtering and filter chokes

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, 500 per reel

| Part Number | Rated Inductance (µH) | OCL (1) µH±30% | I _{rms} (2) Amperes | I _{sat} (3) Amperes | DCR (Ω) mΩ @20°C (Typical) | DCR (Ω) mΩ @20°C (Maximum) | K-factor (4) |
|--------------|-----------------------|----------------|------------------------------|------------------------------|----------------------------|----------------------------|--------------|
| DR1050-R80-R | 0.8 | 0.70 | 9.70 | 13.50 | 3.2 | 4.0 | 20.47 |
| DR1050-1R5-R | 1.5 | 1.37 | 8.60 | 10.50 | 4.0 | 5.0 | 14.62 |
| DR1050-2R2-R | 2.2 | 2.27 | 7.52 | 9.25 | 5.6 | 6.8 | 11.37 |
| DR1050-3R3-R | 3.3 | 3.21 | 6.50 | 8.20 | 8.0 | 10.0 | 9.30 |
| DR1050-4R7-R | 4.7 | 4.43 | 6.13 | 6.70 | 9.5 | 11.9 | 7.87 |
| DR1050-6R8-R | 6.8 | 6.30 | 5.45 | 5.80 | 13.0 | 16.5 | 6.82 |
| DR1050-8R2-R | 8.2 | 8.09 | 5.24 | 5.00 | 15.1 | 19.0 | 6.02 |
| DR1050-100-R | 10 | 10.1 | 4.80 | 4.58 | 18.0 | 22.5 | 5.39 |
| DR1050-120-R | 12 | 11.6 | 3.94 | 4.10 | 24.3 | 30.4 | 4.87 |
| DR1050-150-R | 15 | 14.8 | 3.80 | 3.70 | 26.0 | 32.5 | 4.45 |
| DR1050-180-R | 18 | 17.5 | 3.39 | 3.30 | 32.8 | 41.0 | 4.09 |
| DR1050-220-R | 22 | 23.5 | 3.12 | 3.00 | 38.7 | 48.4 | 3.53 |
| DR1050-270-R | 27 | 26.9 | 2.82 | 2.80 | 42.6 | 53.3 | 3.30 |
| DR1050-330-R | 33 | 34.3 | 2.56 | 2.50 | 57.5 | 71.9 | 2.92 |
| DR1050-390-R | 39 | 38.3 | 2.35 | 2.35 | 60.7 | 75.9 | 2.77 |
| DR1050-470-R | 47 | 47.1 | 2.06 | 2.10 | 89.0 | 111 | 2.50 |
| DR1050-560-R | 56 | 56.7 | 1.96 | 1.94 | 98.0 | 123 | 2.27 |
| DR1050-680-R | 68 | 67.2 | 1.84 | 1.70 | 111 | 139 | 2.09 |
| DR1050-820-R | 82 | 84.4 | 1.60 | 1.58 | 147 | 184 | 1.86 |
| DR1050-101-R | 100 | 97.5 | 1.52 | 1.45 | 164 | 205 | 1.73 |
| DR1050-121-R | 120 | 118.3 | 1.30 | 1.30 | 223 | 279 | 1.57 |
| DR1050-151-R | 150 | 149.2 | 1.26 | 1.15 | 238 | 298 | 1.40 |
| DR1050-181-R | 180 | 183.7 | 1.18 | 1.08 | 273 | 341 | 1.26 |
| DR1050-221-R | 220 | 221.8 | 1.00 | 0.98 | 377 | 472 | 1.15 |
| DR1050-271-R | 270 | 263.5 | 0.96 | 0.90 | 410 | 513 | 1.06 |
| DR1050-331-R | 330 | 320.6 | 0.83 | 0.80 | 554 | 693 | 0.96 |
| DR1050-391-R | 390 | 396.5 | 0.76 | 0.72 | 648 | 810 | 0.86 |
| DR1050-471-R | 470 | 480.5 | 0.64 | 0.62 | 855 | 1069 | 0.78 |
| DR1050-561-R | 560 | 572.6 | 0.62 | 0.60 | 970 | 1213 | 0.72 |
| DR1050-681-R | 680 | 707.9 | 0.56 | 0.55 | 1095 | 1369 | 0.64 |
| DR1050-821-R | 820 | 818.7 | 0.54 | 0.50 | 1185 | 1481 | 0.60 |
| DR1050-102-R | 1000 | 1000.2 | 0.43 | 0.48 | 1528 | 1950 | 0.54 |

(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 35% rolloff (@25°C)

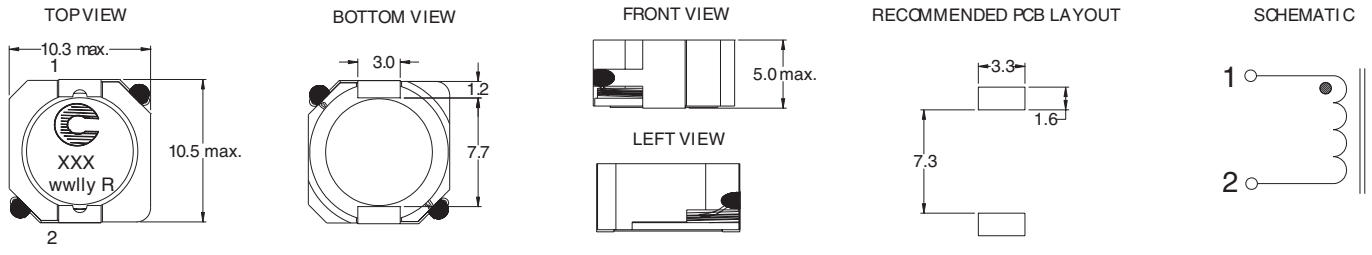
(4) K-factor: Used to determine B p-p for core loss (see graph).

B p-p = K²L²ΔI, 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: DR1050-xxx-R

DR1050 = 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

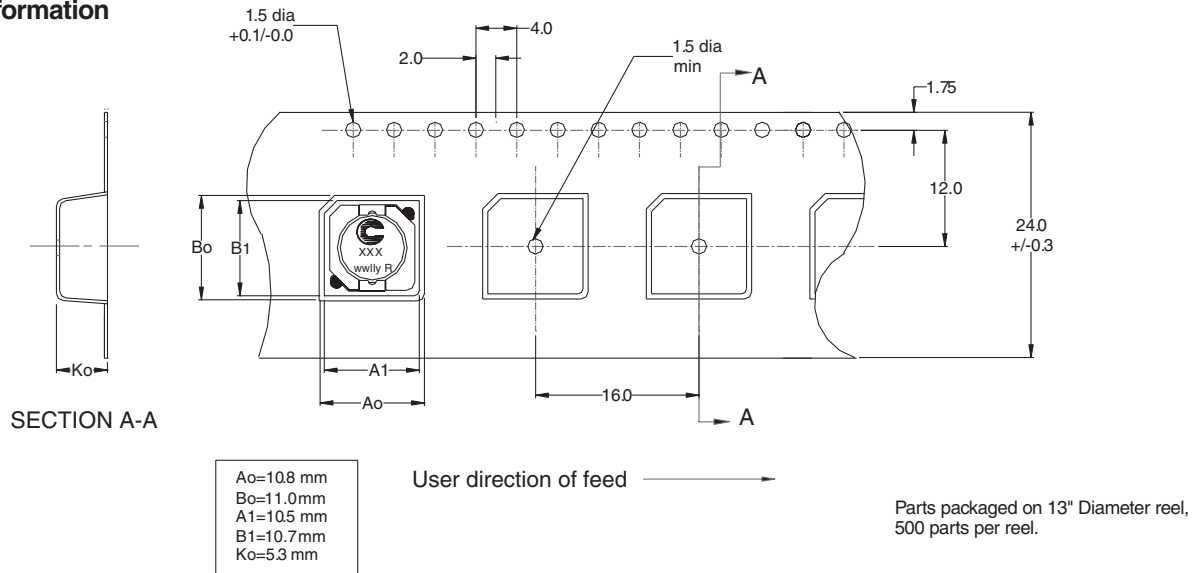
Mechanical Diagrams



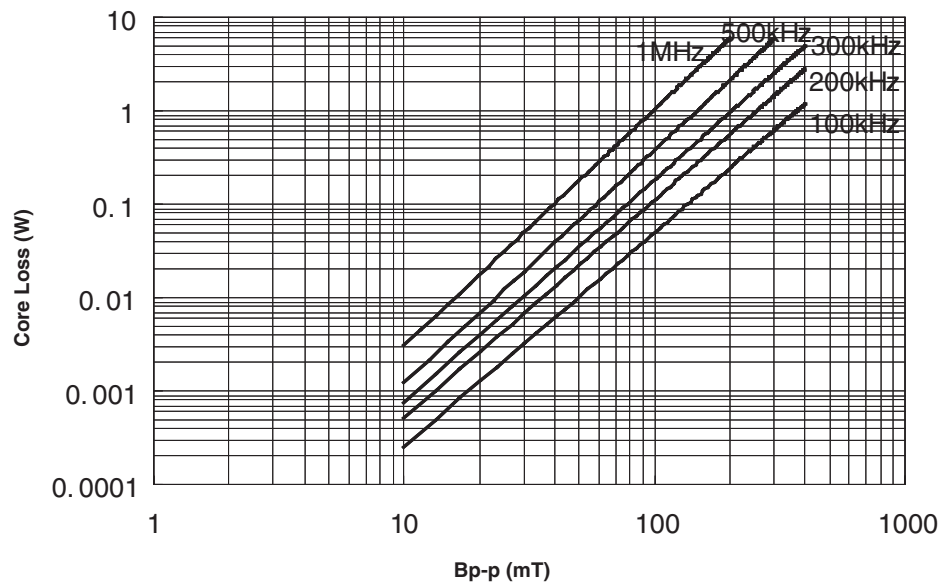
Dimensions are in millimeters.

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

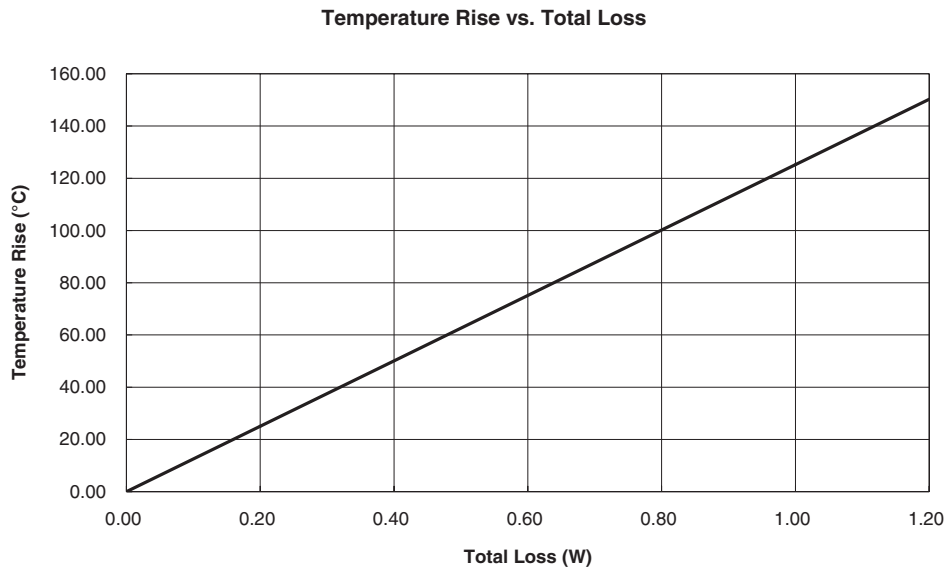
Packaging Information



Core Loss



Temperature Rise vs. Loss



Inductance Characteristics

