



DR1030 Series Low Profile Power Inductors

Description

- 125°C maximum total temperature operation
- Low profile surface mount inductors
- 10.3mm x 10.5mm x 3.0mm shielded drum core
- Ferrite core material
- Inductance range from 1.1µH to 150µH
- Current range from 9.5 Amps to 0.68 Amps
- Frequency range up to 1MHz

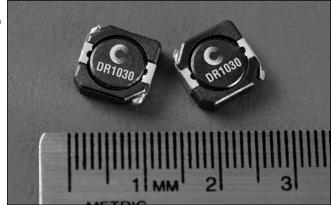
Applications

- Computer, DVD players, and portable power devices
- Notebook power, LCD panels
- DC-DC converters
- Input/output filter, Buck/Boost regulators

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. 1000 parts per reel

| Part Number | Rated Inductance (µH) | OCL (1) μH ± 30% | Irms (2) Amperes | Isat (3) Amperes | DCR mΩ@20°C (Typical) | DCR mΩ@20°C (Maximum) | K-factor (4) |
|--------------|-----------------------------|---------------------|---------------------|---------------------|-----------------------------|-----------------------------|-----------------|
| DR1030-1R1-R | 1.1 | 1.1 | 7.0 | 9.50 | 6.5 | 7.9 | 22 |
| DR1030-1R8-R | 1.8 | 1.9 | 5.9 | 7.41 | 9.1 | 11.0 | 17 |
| DR1030-2R8-R | 2.8 | 2.8 | 5.1 | 6.08 | 12.1 | 14.5 | 14 |
| DR1030-3R9-R | 3.9 | 4.0 | 4.3 | 5.13 | 16.4 | 20.0 | 12 |
| DR1030-5R2-R | 5.2 | 5.2 | 3.7 | 4.75 | 22.9 | 27.5 | 10 |
| DR1030-6R8-R | 6.8 | 6.8 | 3.5 | 3.90 | 24.9 | 30.0 | 9.0 |
| DR1030-8R2-R | 8.2 | 8.4 | 3.3 | 3.54 | 28.4 | 34.1 | 8.0 |
| DR1030-100-R | 10 | 10.4 | 2.8 | 3.18 | 40.2 | 48.0 | 7.0 |
| DR1030-150-R | 15 | 14.8 | 2.3 | 2.66 | 57.3 | 68.8 | 6.0 |
| DR1030-220-R | 22 | 22.8 | 1.8 | 2.19 | 95.5 | 114.6 | 4.5 |
| DR1030-330-R | 33 | 32.4 | 1.6 | 1.81 | 113.6 | 136.3 | 4 |
| DR1030-470-R | 47 | 47.9 | 1.3 | 1.52 | 166.6 | 200.0 | 3.4 |
| DR1030-680-R | 68 | 66.6 | 1.1 | 1.24 | 253.1 | 303.7 | 2.9 |
| DR1030-820-R | 82 | 82.4 | 1.0 | 1.14 | 332.4 | 382.3 | 2.6 |
| DR1030-101-R | 100 | 100 | 0.86 | 1.05 | 375.0 | 450.0 | 2.4 |
| DR1030-121-R | 120 | 119.3 | 0.8 | 0.95 | 523.4 | 602.0 | 1.9 |
| DR1030-151-R | 150 | 155.3 | 0.68 | 0.86 | 590.0 | 700 | 1.4 |

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

⁽²⁾ Irms: 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⁾ Isat Amperes peak for approximately 35% rolloff max. (@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). Part Number definition: DR1030-xxx-R

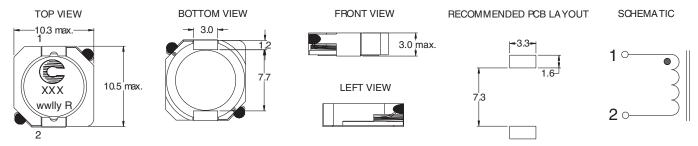
DR1030 = Product code and size, xxx = Inductance value in μ H, R = decimal point. If no R is present third character = # of zeros. -R suffix = RoHS compliant



DD4000 0 :

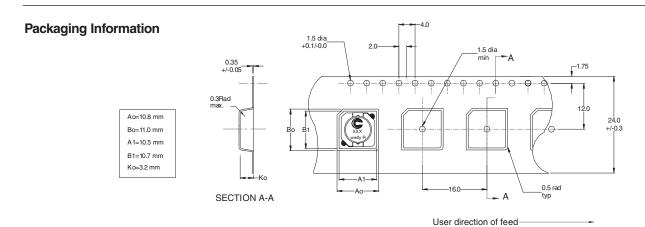
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Mechanical Diagrams

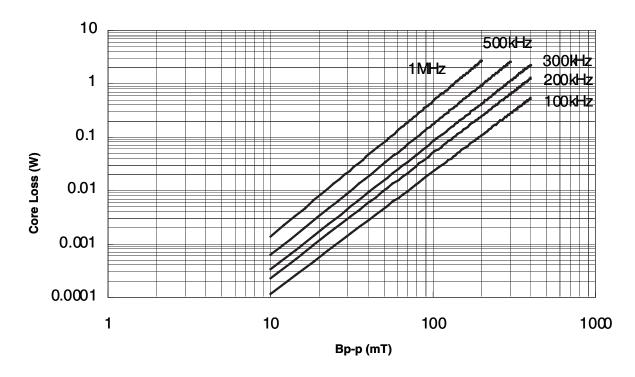


Dimensions are in millimeters.

 $XXX = \mbox{Inductance}$ in $\mu H. \ R = \mbox{decimal point.}$ If no R is present third character = #of zeros. wwlly = Date Code. R = Revision Level.



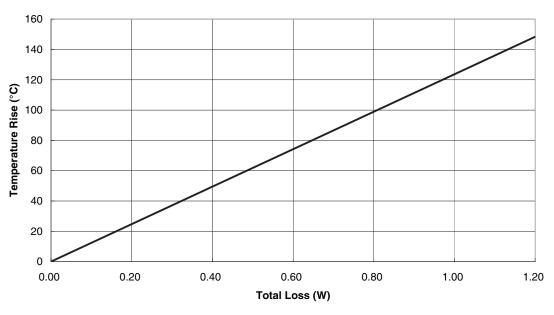
Core Loss





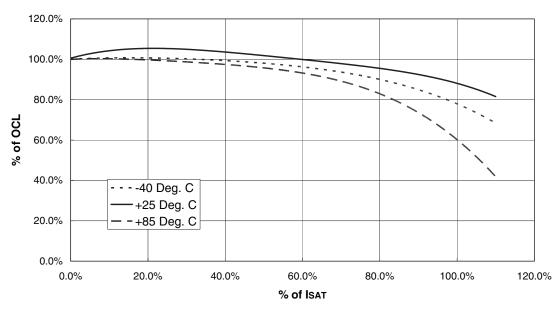


Temperature Rise vs. Total Loss



Inductance Characteristics

OCL vs. Isat





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