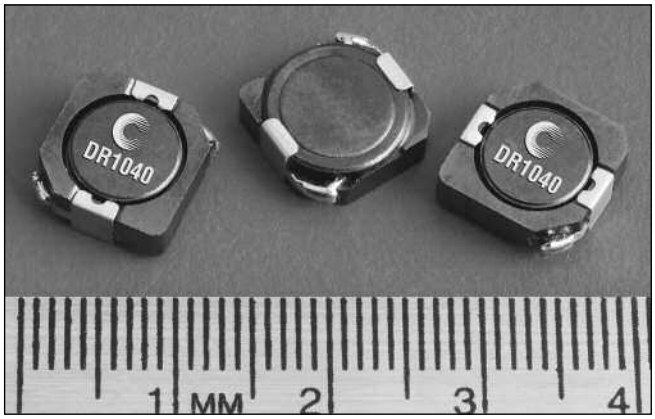
COOPER COILTRONICS®

COOPER Bussmann

DR1040 Series
Low Profile Power Inductors

RoHS 2002/95/EC



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

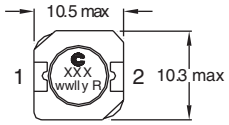
- Supplied in tape and reel packaging, 850 per reel

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 uH;
R = decimal point; If no R is present, third character = # of zeros.
-R suffix = RoHS compliant

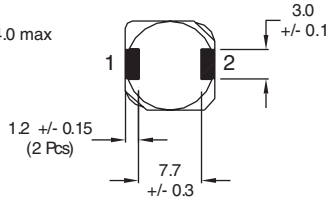
Mechanical Diagrams

TOP VIEW

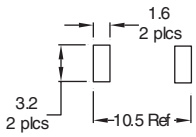


SIDE VIEW

BOTTOM VIEW



RECOMMENDED PCB LAYOUT

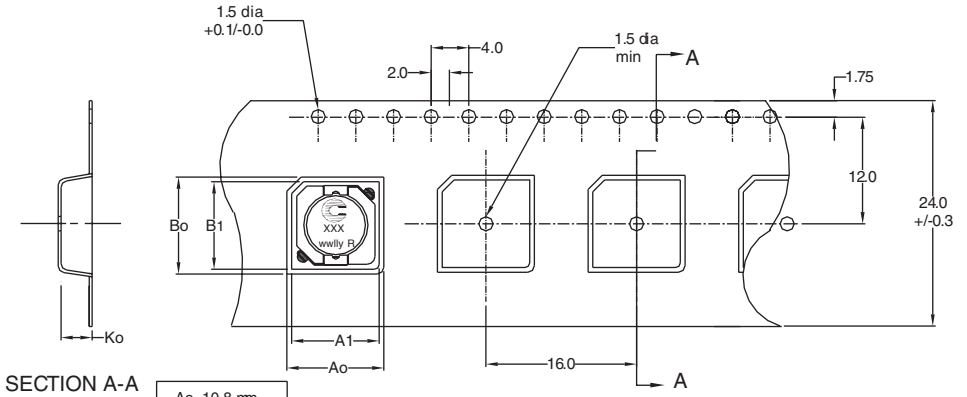


SCHEMATIC

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.

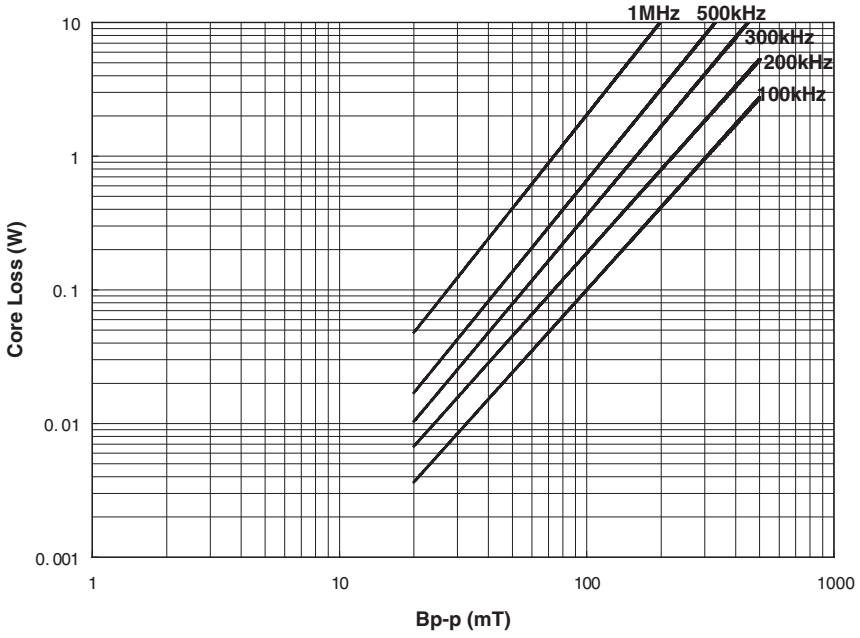
Packaging Information



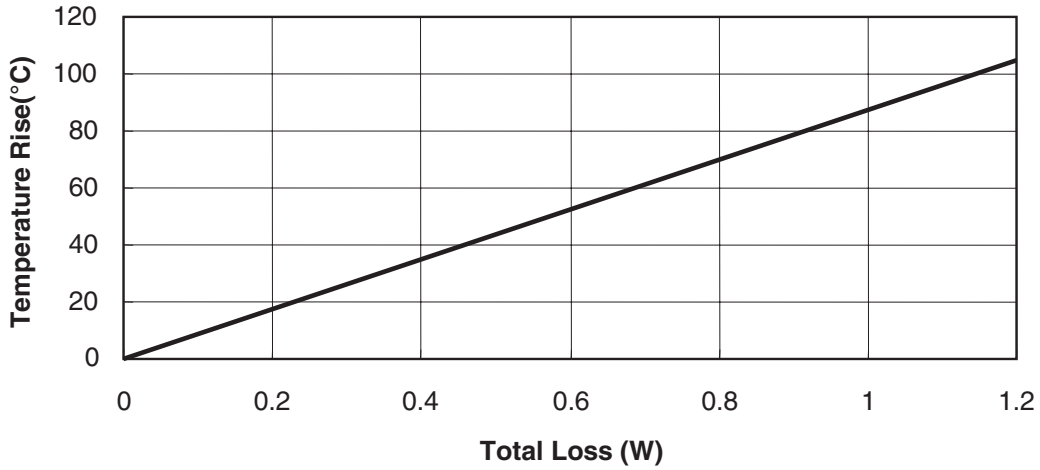
Ao=10.8 mm
Bo=11.0mm
A1=10.6 mm
B1=10.5mm
Ko=4.2 mm

Parts packaged on 13" Diameter reel,
850 parts per reel.

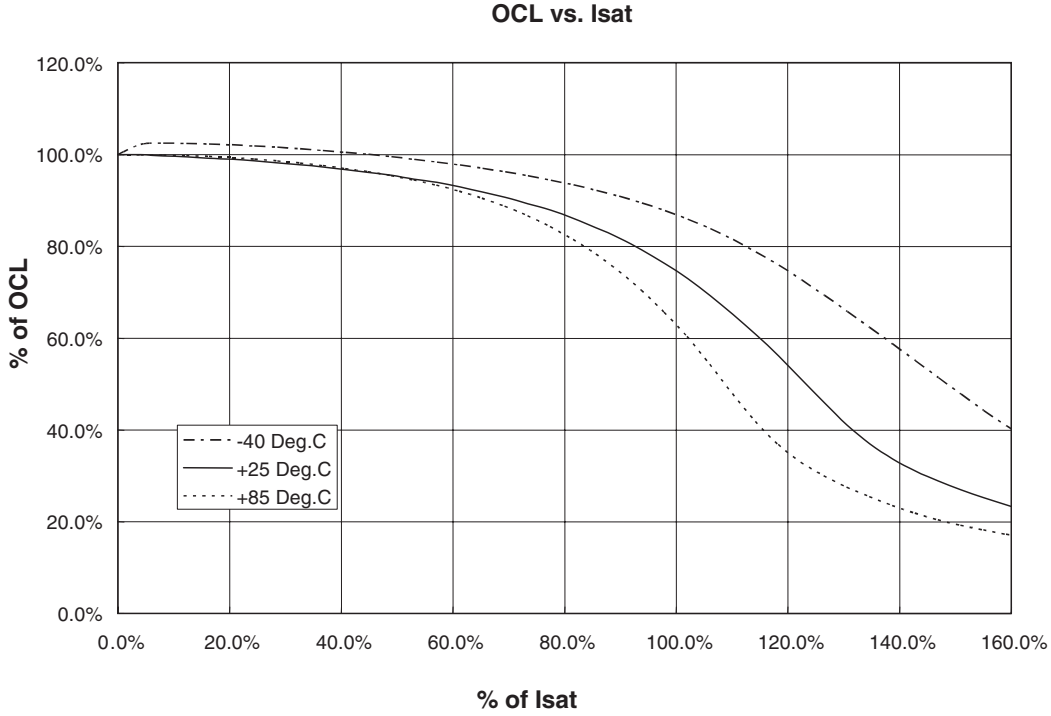
Core Loss



Temperature Rise vs. Loss



Inductance Characteristics



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