

Description

- 125°C maximum total temperature operation
- Low profile surface mount inductor
- 12.5mm x 12.5mm x 4.5mm shielded drum core
- Ferrite core material
- Inductance range from 0.47μH to 1000μH
- Current range from 24.4 Amps to 0.44 Amps
- Frequency range up to 1MHz

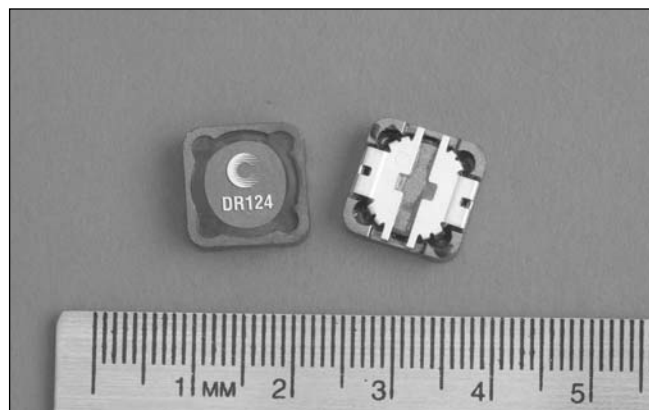
RoHS

Applications

- Notebook power, LCD panels
- Computer, DVD players, and portable power devices
- 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, 750 per reel

Part Number	Rated Inductance (μH)	OCL (1) μH±20%	Irms(2) Amperes	Isat (3) Amperes	DCR mΩ @20°C (Typical)	DCR mΩ @20°C (Maximum)	K-factor (4)
DR124-R47-R	0.47	0.42	16.0	24.40	2.2	2.7	17.51
DR124-1R0-R	1.0	0.83	13.9	18.00	3.00	3.6	12.50
DR124-1R5-R	1.5	1.37	11.1	14.00	4.75	5.7	9.73
DR124-2R2-R	2.2	2.04	9.1	11.45	5.92	7.1	7.96
DR124-3R9-R	3.9	3.80	7.0	8.40	12.50	15.0	5.84
DR124-4R7-R	4.7	4.88	6.5	7.65	13.50	16.2	5.15
DR124-6R8-R	6.8	6.10	5.6	6.47	18.06	21.7	4.61
DR124-8R2-R	8.2	7.45	5.2	6.22	21.67	26.0	4.17
DR124-100-R	10	8.94	4.5	5.80	23.33	28.0	3.81
DR124-120-R	12	11.5	4.1	4.96	31.67	38.0	3.50
DR124-150-R	15	14.2	3.6	4.62	37.30	44.8	3.02
DR124-180-R	18	16.2	3.4	4.32	46.97	56.4	2.82
DR124-220-R	22	20.7	3.2	3.83	53.99	64.8	2.50
DR124-270-R	27	25.7	2.8	3.44	66.67	80.0	2.24
DR124-330-R	33	31.2	2.6	3.12	80.83	97.0	2.04
DR124-390-R	39	37.3	2.3	2.85	110.00	132.0	1.86
DR124-470-R	47	44.0	2.2	2.63	124.66	149.6	1.72
DR124-560-R	56	54.9	2.0	2.35	144.32	173.2	1.54
DR124-680-R	68	67.1	1.8	2.13	183.33	220.0	1.39
DR124-820-R	82	80.5	1.7	1.94	212.72	255.3	1.27
DR124-101-R	100	95.1	1.5	1.79	256.67	308.0	1.17
DR124-121-R	120	111	1.3	1.65	311.18	373.4	1.08
DR124-151-R	150	146	1.3	1.44	371.02	445.2	0.94
DR124-181-R	180	179	1.1	1.30	501.66	602.0	0.87
DR124-221-R	220	216	1.0	1.15	558.00	669.6	0.77
DR124-271-R	270	256	0.88	1.09	725.00	870.0	0.71
DR124-331-R	330	327	0.83	0.92	825.00	990.0	0.63
DR124-471-R	470	460	0.68	0.74	1242.50	1491.0	0.53
DR124-681-R	680	669	0.56	0.65	1845.83	2215.0	0.45
DR124-821-R	820	825	0.53	0.62	2109.17	2351.0	0.40
DR124-102-R	1000	998	0.44	0.53	2898.00	3477.00	0.37

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

(2) I rms: DC current for an approximate 3T 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.

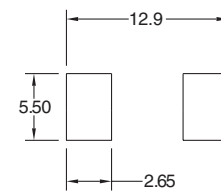
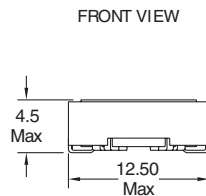
(3) Isat Amperes peak for approximately 25% rolloff (@25°C)

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

B p-p = K*L^{3/4}, B p-p(mT), K: (K factor from table), L: (Inductance in μH),
^{3/4} (Peak to peak ripple current in Amps).

(5) Part Number Definition: DR124-xxx-R

DR124 = 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



1.5 dia
+0.1/-0.0

4.0

1.5 dia min

1.75

1.1

24.0

16.0

126

126

Ko

Bo

B1

A1

Ao

DFR124-000
wavy film

SECTION A-A

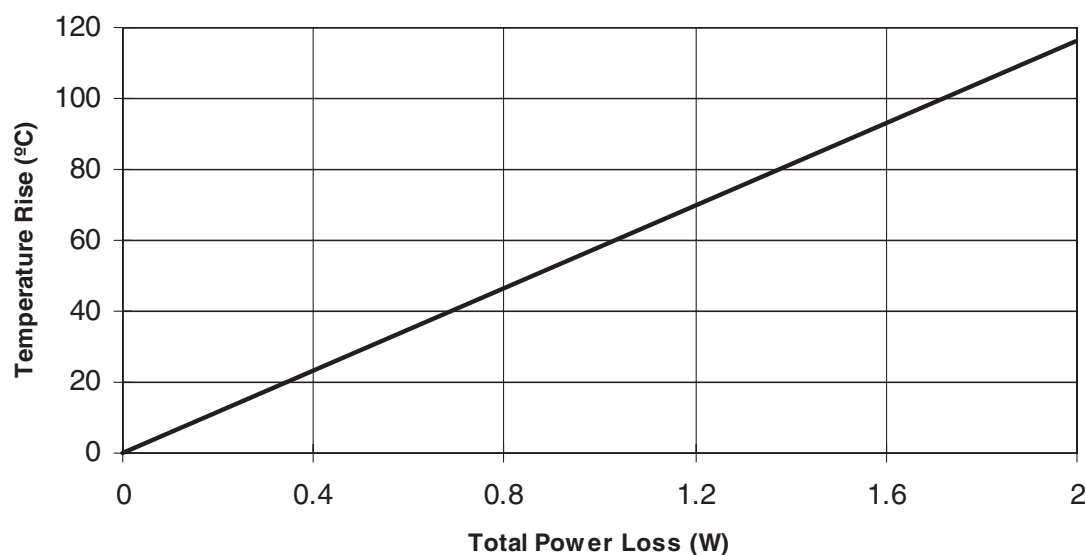
Ao=13.2 mm
Bo=13.2 mm
A1=10 mm
B1=10 mm
Ko=5.2 mm

User direction of feed →

Parts packaged on 13" x 750 parts per reel.

A log-log plot showing Core Loss (W) on the y-axis (ranging from 0.0001 to 100) versus Bp-p (mT) on the x-axis (ranging from 1 to 1000). Five curves are plotted for different frequencies: 100kHz, 200kHz, 300kHz, 500kHz, and 1MHz. The curves show that core loss increases with both magnetic flux density and frequency. The 1MHz curve is the highest, followed by 500kHz, 300kHz, 200kHz, and 100kHz.

Temperature Rise vs. Loss



Inductance Characteristics

OCL Vs. Isat

