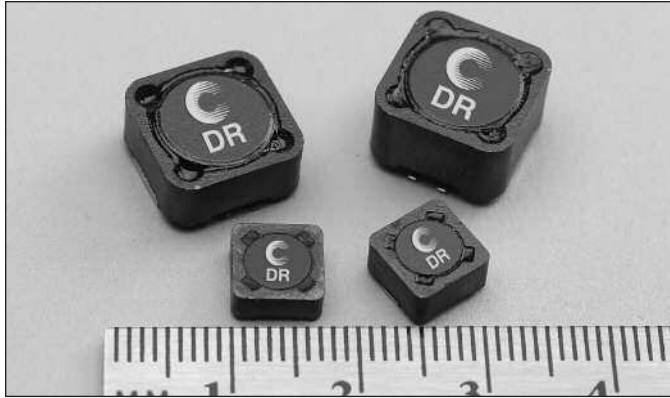


DR Series

High Power Density, High Efficiency, Shielded Inductors



Description

- 125°C maximum total operating temperature
- Four sizes of shielded drum core inductors
- Inductance range from 0.33μH to 1000μH
- Current range up to 56 amps peak

- Magnetic shielding
- Secure mounting
- Ferrite core material



Applications

- Computer, DVD players, and portable power devices
- 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 max.

Packaging

- Supplied in tape and reel packaging, 1350 (DR73), 1100 (DR74), 600 (DR125), and 350 (DR127) per reel

| Part Number | Rated Inductance (μH) | OCL ⁽¹⁾ +/-20% (μH) | I _{rms} Amps ⁽²⁾ | I _{sat} Amps Peak ⁽³⁾ | DCR ⁽⁴⁾ (Ω) Typ. | Volt-μSec ⁽⁵⁾ Typ. |
|-------------|-----------------------|--------------------------------|--------------------------------------|---|-----------------------------|-------------------------------|
| DR73-R33-R | 0.33 | 0.306 | 6.21 | 14.4 | 0.0073 | 1.98 |
| DR73-1R0-R | 1.00 | 0.992 | 5.28 | 7.97 | 0.0102 | 3.56 |
| DR73-1R5-R | 1.50 | 1.482 | 4.67 | 6.52 | 0.0130 | 4.36 |
| DR73-2R2-R | 2.20 | 2.070 | 4.15 | 5.52 | 0.0165 | 5.15 |
| DR73-3R3-R | 3.30 | 3.540 | 3.31 | 4.22 | 0.0259 | 6.73 |
| DR73-4R7-R | 4.70 | 4.422 | 3.09 | 3.78 | 0.0297 | 7.52 |
| DR73-6R8-R | 6.80 | 6.480 | 2.55 | 3.12 | 0.0435 | 9.11 |
| DR73-8R2-R | 8.20 | 8.930 | 2.19 | 2.66 | 0.0592 | 10.7 |
| DR73-100-R | 10.0 | 10.30 | 2.08 | 2.47 | 0.0656 | 11.5 |
| DR73-150-R | 15.0 | 15.01 | 1.83 | 2.05 | 0.0844 | 13.9 |
| DR73-220-R | 22.0 | 22.65 | 1.62 | 1.67 | 0.107 | 17.0 |
| DR73-330-R | 33.0 | 34.41 | 1.31 | 1.35 | 0.166 | 21.0 |
| DR73-470-R | 47.0 | 48.62 | 1.08 | 1.14 | 0.241 | 24.9 |
| DR73-680-R | 68.0 | 68.91 | 0.89 | 0.96 | 0.358 | 29.7 |
| DR73-820-R | 82.0 | 80.37 | 0.86 | 0.89 | 0.384 | 32.1 |
| DR73-101-R | 100 | 101.4 | 0.73 | 0.79 | 0.527 | 36.0 |
| DR73-151-R | 150 | 150.9 | 0.58 | 0.65 | 0.851 | 44.0 |
| DR73-221-R | 220 | 223.3 | 0.52 | 0.53 | 1.05 | 53.5 |
| DR73-331-R | 330 | 325.5 | 0.42 | 0.44 | 1.59 | 64.5 |
| DR73-471-R | 470 | 465.8 | 0.35 | 0.37 | 2.36 | 77.2 |
| DR73-681-R | 680 | 676.5 | 0.29 | 0.31 | 3.47 | 93.1 |
| DR73-821-R | 820 | 821.7 | 0.27 | 0.28 | 3.93 | 103 |
| DR73-102-R | 1000 | 995.0 | 0.26 | 0.25 | 4.34 | 113 |

(1) Open Circuit Inductance Test Parameters: 100kHz, 0.25V_{RMS}, 0.0Adc.

(2) RMS current for an approximate ΔT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.

(3) Peak current for approximate 30% roll off at 20°C.

(4) DCR limits @ 20°C.

(5) Applied Volt-Time product (V-μS) across the inductor. This value represent the applied V-μS at 100kHz necessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise.

(6) Part number definition: DRxxx-yyy-R

DRxxx = product code and size,

-yyy = inductance value in μH,

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

-R suffix = RoHS compliant

| Part Number | Rated Inductance (μH) | OCL ⁽¹⁾ +/-20% (μH) | I _{rms} ⁽²⁾ Amps | I _{sat} ⁽³⁾ Amps Peak | DCR ⁽⁴⁾ (Ω) Typ. | Volt-μSec ⁽⁵⁾ Typ. |
|-------------|-----------------------|--------------------------------|--------------------------------------|---|-----------------------------|-------------------------------|
| DR74-R33-R | 0.33 | 0.294 | 6.26 | 18.4 | 0.0074 | 1.71 |
| DR74-1R0-R | 1.00 | 0.952 | 5.39 | 10.2 | 0.0099 | 3.08 |
| DR74-1R5-R | 1.50 | 1.422 | 4.94 | 8.35 | 0.0118 | 3.76 |
| DR74-2R2-R | 2.20 | 1.986 | 4.76 | 7.06 | 0.0126 | 4.45 |
| DR74-3R3-R | 3.30 | 3.396 | 3.94 | 5.40 | 0.0183 | 5.81 |
| DR74-4R7-R | 4.70 | 5.182 | 3.34 | 4.37 | 0.0254 | 7.18 |
| DR74-6R8-R | 6.80 | 7.344 | 2.60 | 3.67 | 0.0418 | 8.55 |
| DR74-8R2-R | 8.20 | 8.566 | 2.53 | 3.40 | 0.0441 | 9.23 |
| DR74-100-R | 10.0 | 9.882 | 2.41 | 3.17 | 0.0489 | 9.92 |
| DR74-150-R | 15.0 | 16.09 | 2.11 | 2.48 | 0.0637 | 12.7 |
| DR74-220-R | 22.0 | 21.73 | 1.75 | 2.13 | 0.0925 | 14.7 |
| DR74-330-R | 33.0 | 33.01 | 1.41 | 1.73 | 0.143 | 18.1 |
| DR74-470-R | 47.0 | 49.64 | 1.15 | 1.41 | 0.216 | 22.2 |
| DR74-680-R | 68.0 | 69.67 | 1.03 | 1.19 | 0.265 | 26.3 |
| DR74-820-R | 82.0 | 80.95 | 0.91 | 1.11 | 0.345 | 28.4 |
| DR74-101-R | 100 | 101.6 | 0.86 | 0.99 | 0.383 | 31.8 |
| DR74-151-R | 150 | 150.0 | 0.69 | 0.81 | 0.591 | 38.6 |
| DR74-221-R | 220 | 227.0 | 0.56 | 0.66 | 0.907 | 47.5 |
| DR74-331-R | 330 | 335.6 | 0.45 | 0.54 | 1.41 | 57.8 |
| DR74-471-R | 470 | 465.3 | 0.40 | 0.46 | 1.74 | 68.1 |
| DR74-681-R | 680 | 671.2 | 0.33 | 0.38 | 2.58 | 81.7 |
| DR74-821-R | 820 | 812.7 | 0.31 | 0.35 | 2.93 | 89.9 |
| DR74-102-R | 1000 | 1009 | 0.27 | 0.31 | 3.89 | 100 |
| DR125-R47-R | 0.47 | 0.456 | 17.6 | 33.0 | 0.0018 | 3.17 |
| DR125-1R0-R | 1.00 | 0.894 | 15.0 | 23.6 | 0.0024 | 4.43 |
| DR125-1R5-R | 1.50 | 1.478 | 13.8 | 18.3 | 0.0029 | 5.70 |
| DR125-2R2-R | 2.20 | 2.208 | 10.9 | 15.0 | 0.0045 | 6.97 |
| DR125-3R3-R | 3.30 | 3.084 | 9.26 | 12.7 | 0.0063 | 8.23 |
| DR125-4R7-R | 4.70 | 5.274 | 7.18 | 9.71 | 0.0105 | 10.8 |
| DR125-6R8-R | 6.80 | 6.588 | 6.64 | 8.68 | 0.0123 | 12.0 |
| DR125-8R2-R | 8.20 | 8.048 | 5.54 | 7.86 | 0.0176 | 13.3 |
| DR125-100-R | 10.0 | 9.654 | 5.35 | 7.17 | 0.0189 | 14.6 |
| DR125-150-R | 15.0 | 15.35 | 4.27 | 5.69 | 0.0298 | 18.4 |
| DR125-180-R | 18.0 | 17.70 | 3.81 | 5.32 | 0.0377 | 19.6 |
| DR125-220-R | 22.0 | 22.36 | 3.70 | 4.71 | 0.0396 | 22.2 |
| DR125-330-R | 33.0 | 33.74 | 3.28 | 3.84 | 0.0505 | 27.2 |
| DR125-470-R | 47.0 | 47.47 | 2.71 | 3.24 | 0.0740 | 32.3 |
| DR125-560-R | 56.0 | 55.24 | 2.31 | 3.00 | 0.102 | 34.8 |
| DR125-680-R | 68.0 | 67.91 | 2.22 | 2.70 | 0.101 | 38.6 |
| DR125-820-R | 82.0 | 86.89 | 2.05 | 2.39 | 0.128 | 43.7 |
| DR125-101-R | 100 | 102.7 | 1.78 | 2.20 | 0.170 | 47.5 |
| DR125-151-R | 150 | 151.1 | 1.48 | 1.81 | 0.248 | 57.6 |
| DR125-221-R | 220 | 216.8 | 1.19 | 1.51 | 0.384 | 69.0 |
| DR125-331-R | 330 | 332.6 | 1.06 | 1.22 | 0.482 | 85.5 |
| DR125-471-R | 470 | 473.1 | 0.87 | 1.02 | 0.718 | 102 |
| DR125-681-R | 680 | 679.8 | 0.70 | 0.85 | 1.10 | 122 |
| DR125-821-R | 820 | 828.0 | 0.60 | 0.77 | 1.49 | 135 |
| DR125-102-R | 1000 | 1008 | 0.57 | 0.70 | 1.69 | 149 |
| DR125-472-R | 4700 | 4720 | 0.268 | 0.32 | 7.53 | 322.4 |
| DR125-124-R | 120000 | 120630 | 0.060 | 0.069 | 150 | 1521 |

(1) Open Circuit Inductance Test Parameters: 100kHz, 0.25V_{rms}, 0.0Adc.
(2) RMS current for an approximate ΔT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.
(3) Peak current for approximate 30% roll off at 20°C.
(4) DCR limits @ 20°C.
(5) Applied Volt-Time product (V-μS) across the inductor. This value represent the applied V-μS at 100kHz necessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise.

6) Part number definition: DRxxx-yyy-R
DRxxx = product code and size,
-yyy = inductance value in μH,
R = decimal point. If no R is present, third character = # of zeros
-R suffix = RoHS compliant

| Part Number | Rated Inductance (μH) | OCL ⁽¹⁾ +/-20% (μH) | I _{rms} ⁽²⁾ Amps | I _{sat} ⁽³⁾ Amps Peak | DCR ⁽⁴⁾ (Ω) Typ. | Volt-μSec ⁽⁵⁾ Typ. |
|-------------|-----------------------|--------------------------------|--------------------------------------|---|-----------------------------|-------------------------------|
| DR127-R47-R | 0.47 | 0.419 | 17.9 | 56.0 | 0.00195 | 3.50 |
| DR127-1R0-R | 1.00 | 0.821 | 15.5 | 40.0 | 0.00313 | 4.90 |
| DR127-1R5-R | 1.50 | 1.357 | 13.5 | 31.1 | 0.00341 | 6.30 |
| DR127-2R2-R | 2.20 | 2.027 | 12.5 | 25.5 | 0.00402 | 7.70 |
| DR127-3R3-R | 3.30 | 2.831 | 10.5 | 21.5 | 0.00567 | 9.10 |
| DR127-4R7-R | 4.70 | 4.841 | 8.25 | 16.5 | 0.00917 | 11.9 |
| DR127-6R8-R | 6.80 | 7.387 | 7.34 | 13.3 | 0.0116 | 14.7 |
| DR127-8R2-R | 8.20 | 8.861 | 6.32 | 12.2 | 0.0157 | 16.1 |
| DR127-100-R | 10.0 | 10.47 | 6.04 | 11.2 | 0.0172 | 17.5 |
| DR127-150-R | 15.0 | 14.09 | 5.03 | 9.66 | 0.0247 | 20.3 |
| DR127-220-R | 22.0 | 22.93 | 4.00 | 7.57 | 0.0391 | 25.9 |
| DR127-330-R | 33.0 | 33.92 | 3.23 | 6.22 | 0.0600 | 31.5 |
| DR127-470-R | 47.0 | 47.05 | 2.95 | 5.28 | 0.0719 | 37.1 |
| DR127-680-R | 68.0 | 66.48 | 2.44 | 4.44 | 0.105 | 44.1 |
| DR127-820-R | 82.0 | 79.75 | 2.09 | 4.06 | 0.143 | 48.3 |
| DR127-101-R | 100 | 99.31 | 1.96 | 3.64 | 0.163 | 53.9 |
| DR127-151-R | 150 | 144.9 | 1.59 | 3.01 | 0.247 | 65.1 |
| DR127-221-R | 220 | 221.5 | 1.29 | 2.43 | 0.376 | 80.5 |
| DR127-331-R | 330 | 323.6 | 1.04 | 2.01 | 0.574 | 97.3 |
| DR127-471-R | 470 | 467.1 | 0.85 | 1.68 | 0.861 | 117 |
| DR127-681-R | 680 | 676.7 | 0.76 | 1.39 | 1.08 | 141 |
| DR127-821-R | 820 | 818.1 | 0.65 | 1.27 | 1.47 | 155 |
| DR127-102-R | 1000 | 1005 | 0.61 | 1.14 | 1.66 | 172 |

(1) Open Circuit Inductance Test Parameters: 100kHz, 0.25V_{rms}, 0.0Adc.

(2) RMS current for an approximate ΔT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.

(3) Peak current for approximate 30% roll off at 20°C.

(4) DCR limits @ 20°C.

(5) Applied Volt-Time product (V-μS) across the inductor. This value represent the applied V-μS at 100kHz necessary to generate a core loss equal to 10% of the total losses for 40°C temperature rise.

6) Part number definition: DRxxx-yyy-R

DRxxx = product code and size,

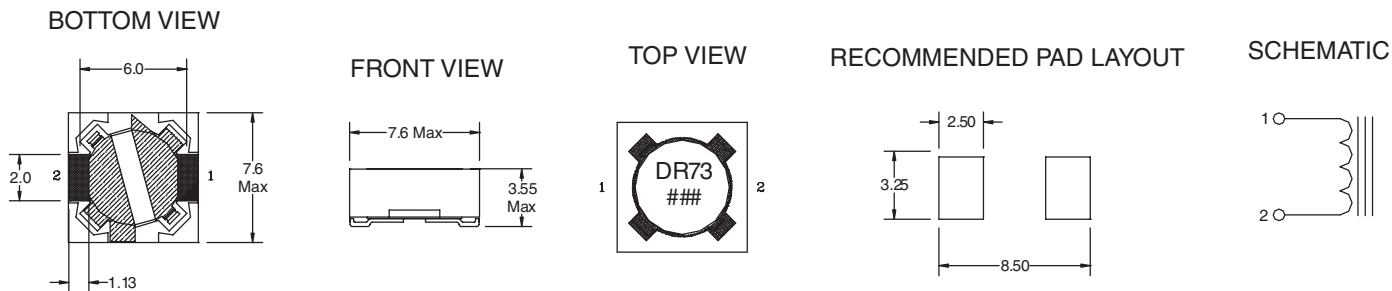
-yyy = inductance value in μH,

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

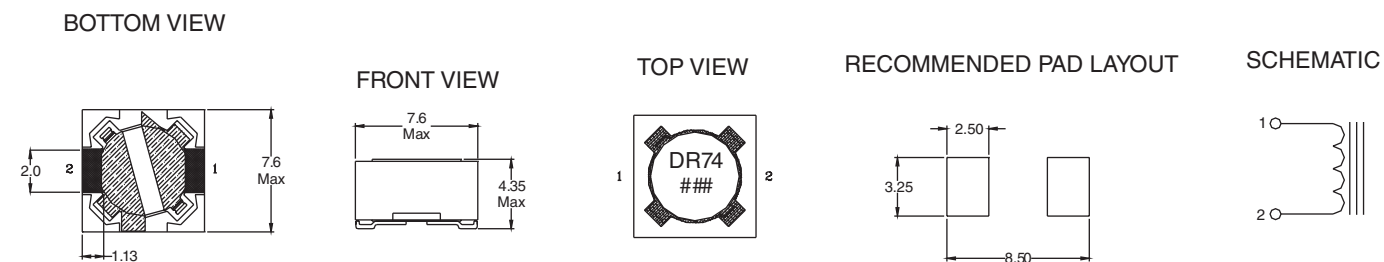
-R suffix = RoHS compliant

Dimensions - mm

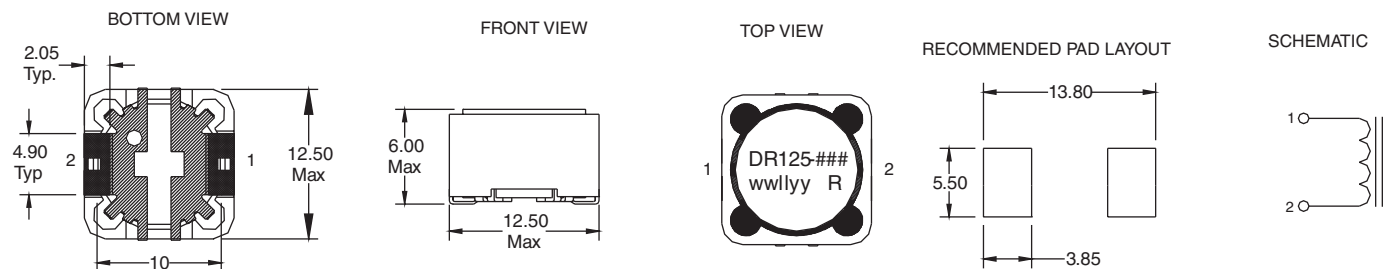
DR73 Series



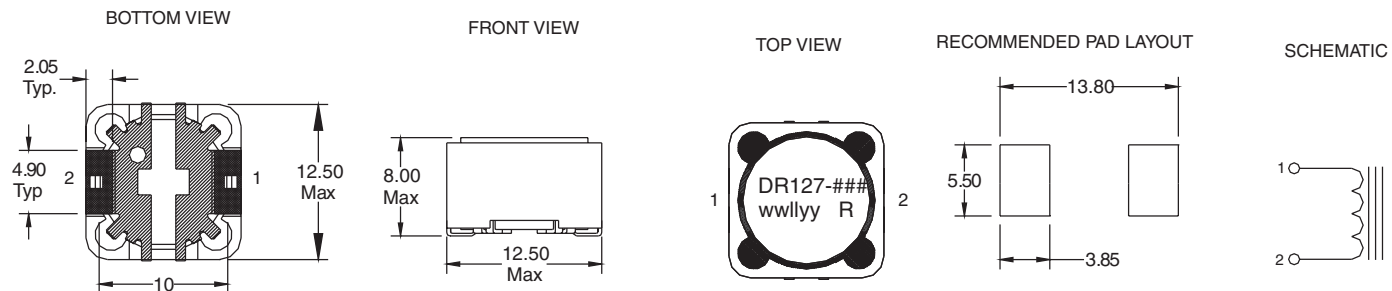
DR74 Series



DR125 Series



DR127 Series



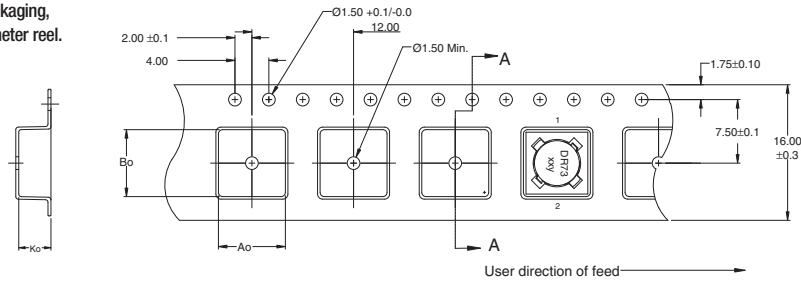
Dimensions in millimeters.

= Inductance value per family chart
wwlyy = (date code) R = revision level

Packaging Information

DR73 Series

Supplied in tape and reel packaging,
1350 parts per reel, 13" diameter reel.



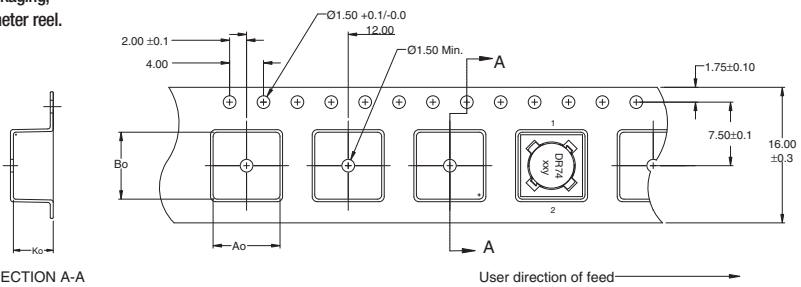
Ao=7.90mm
Bo=7.90mm
Ko=3.80mm

SECTION A-A


ACTUAL SIZE
DR73

DR74 Series

Supplied in tape and reel packaging,
1100 parts per reel, 13" diameter reel.



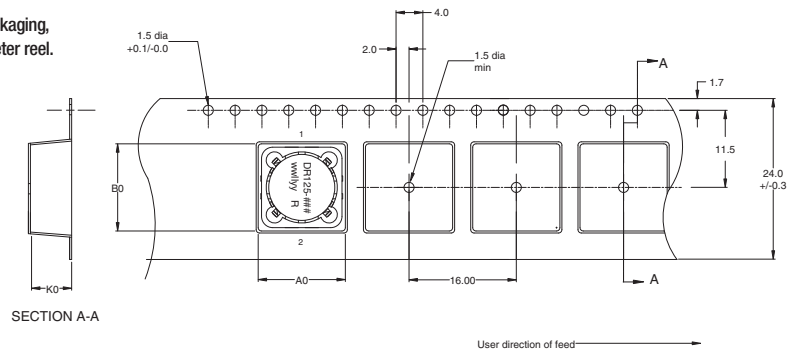
Ao=7.90mm
Bo=7.90mm
Ko=4.70mm

SECTION A-A


ACTUAL SIZE
DR74

DR125 Series

Supplied in tape and reel packaging,
600 parts per reel, 13" diameter reel.



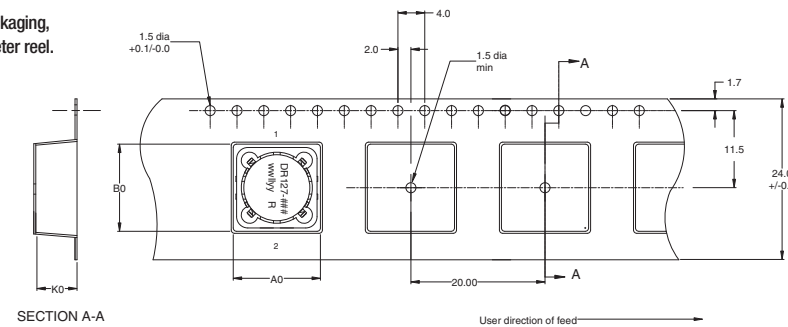
Ao=13.0mm
Bo=13.0mm
Ko=6.30mm

SECTION A-A


ACTUAL SIZE
DR125

DR127 Series

Supplied in tape and reel packaging,
350 parts per reel, 13" diameter reel.



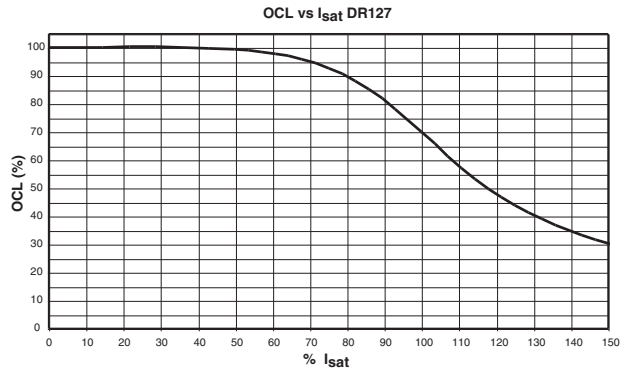
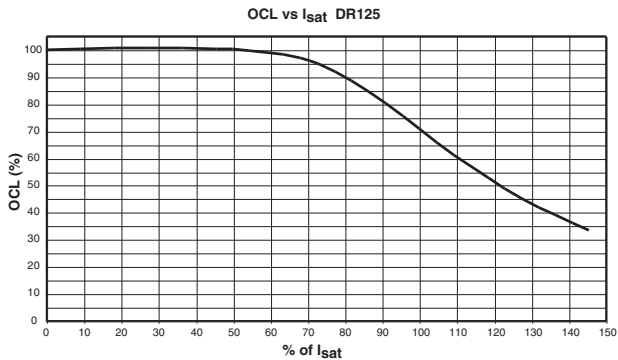
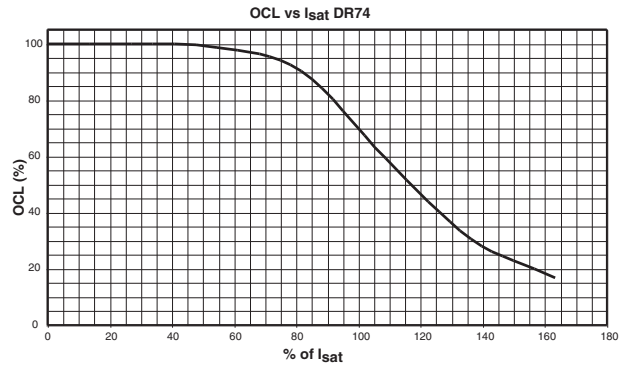
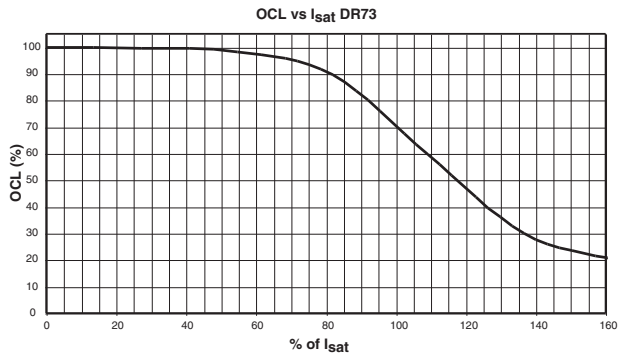
Ao=13.0mm
Bo=13.0mm
Ko=8.30mm

SECTION A-A

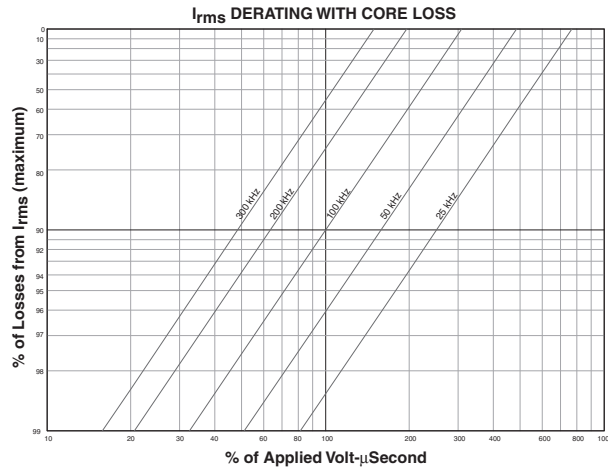

ACTUAL SIZE
DR127

Dimensions are in millimeters.

Inductance Characteristics



Core Loss



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