

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,

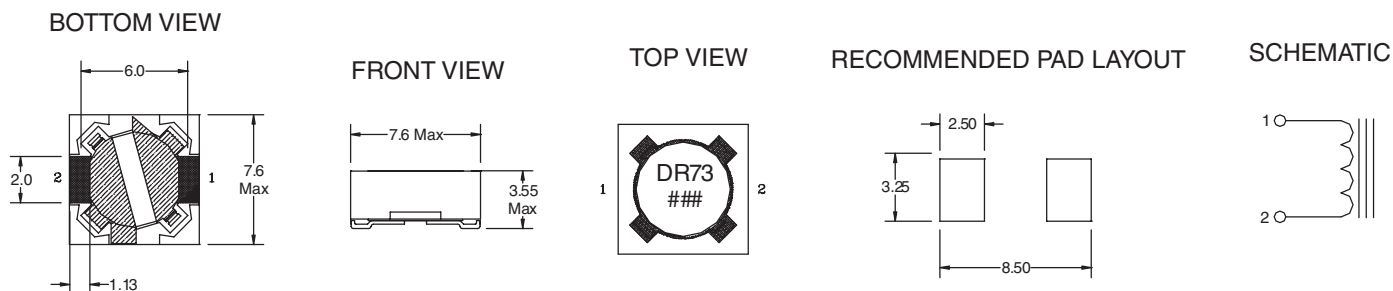
-yyy = inductance value in μH,

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

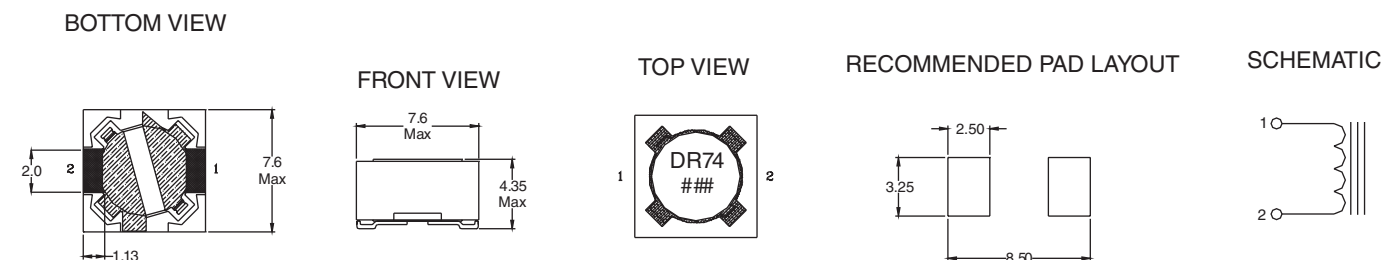
-R suffix = RoHS compliant

Dimensions - mm

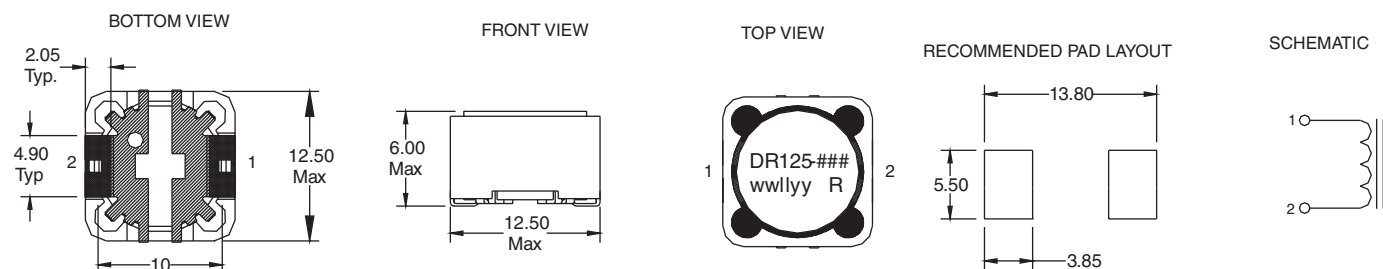
DR73 Series



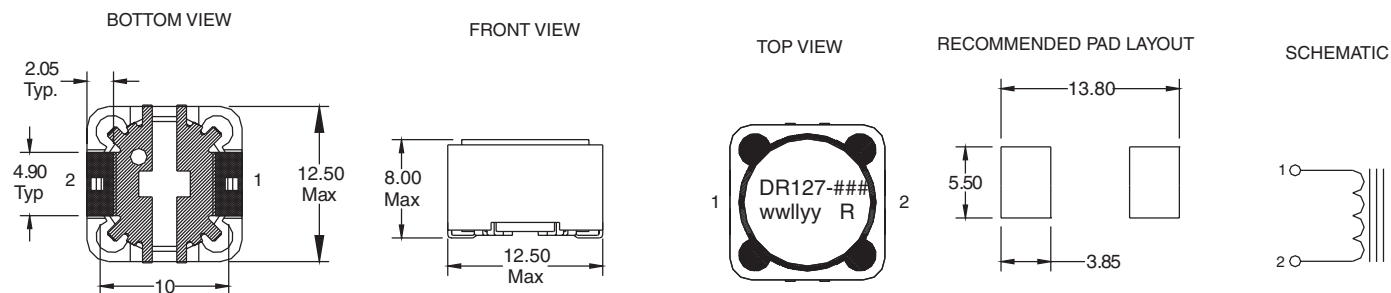
DR74 Series



DR125 Series



DR127 Series



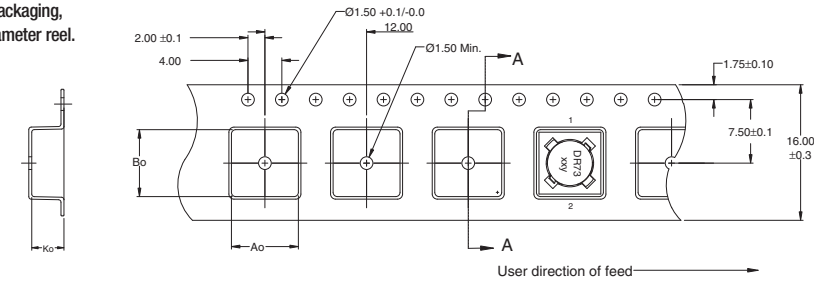
Dimensions in millimeters.

= 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.



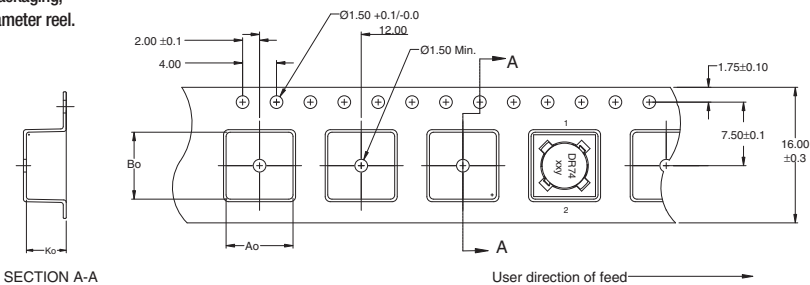
Ao=7.90mm
Bo=7.90mm
Ko=3.80mm

SECTION A-A

ACTUAL SIZE
DR73

DR74 Series

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



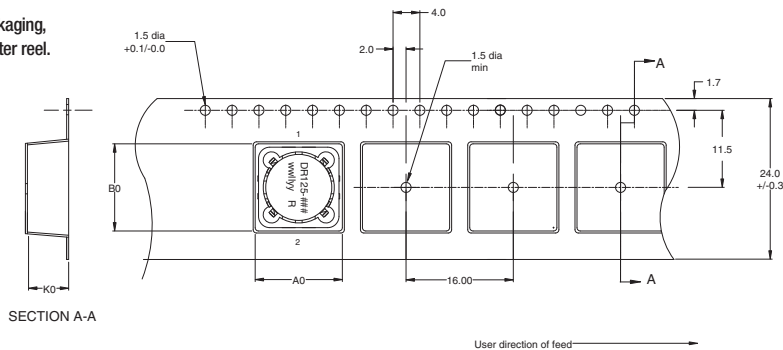
Ao=7.90mm
Bo=7.90mm
Ko=4.70mm

SECTION A-A

ACTUAL SIZE
DR74

DR125 Series

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



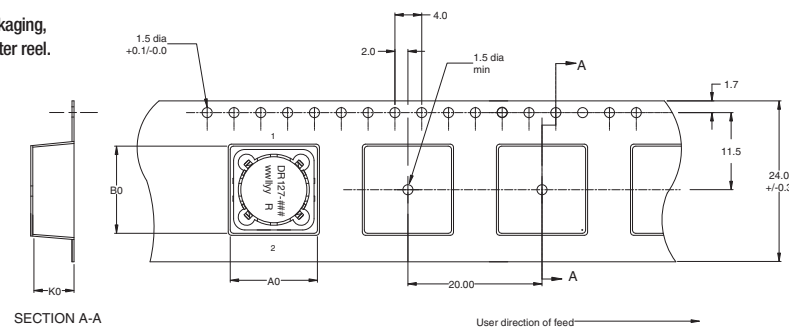
Ao=13.0mm
Bo=13.0mm
Ko=6.30mm

SECTION A-A

ACTUAL SIZE
DR125

DR127 Series

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



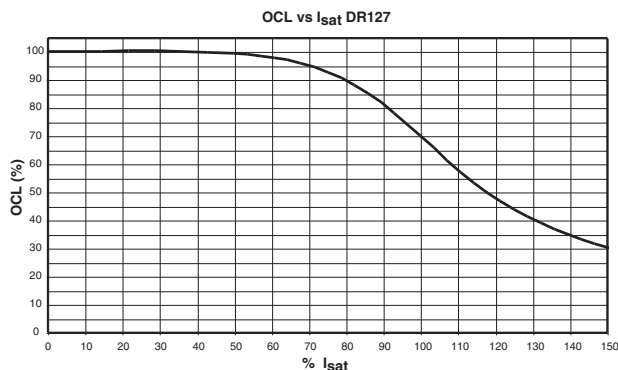
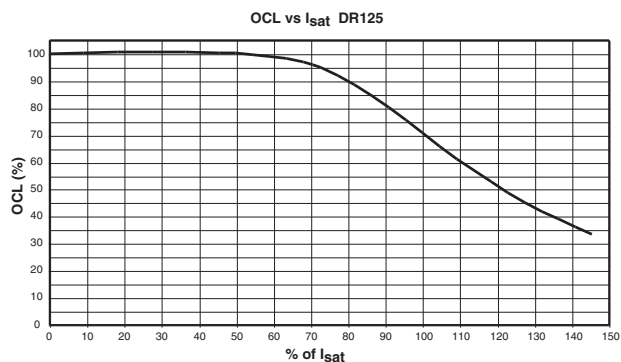
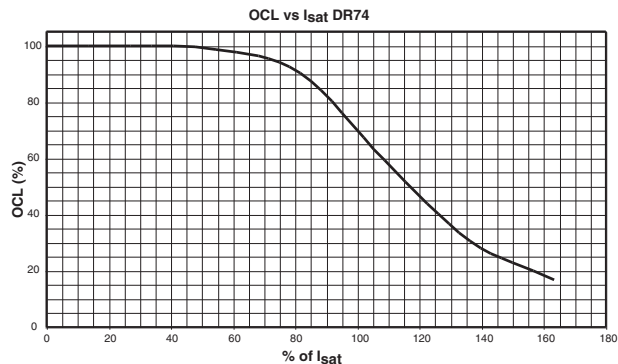
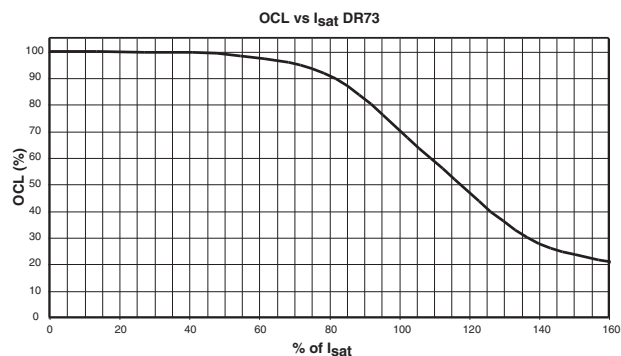
Ao=13.0mm
Bo=13.0mm
Ko=8.30mm

SECTION A-A

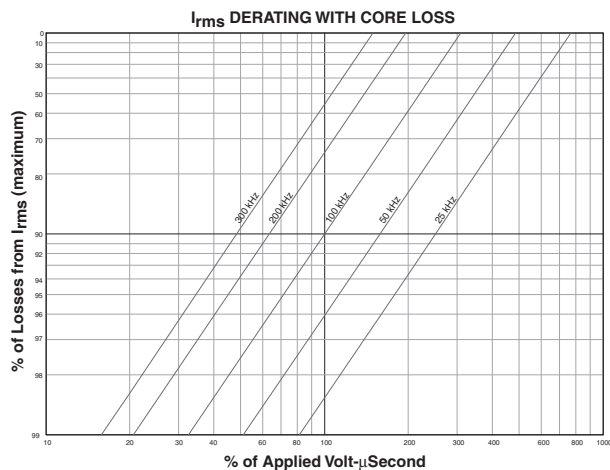
ACTUAL SIZE
DR127

Dimensions are in millimeters.

Inductance Characteristics



Core Loss



North America

Cooper Bussmann
1225 Broken Sound Parkway NW
Suite F
Boca Raton, FL 33487-3533
Tel: 1-561-998-4100
Fax: 1-561-241-6640
Toll Free: 1-888-414-2645

Cooper Bussmann
P.O. Box 14460
St. Louis, MO 63178-4460
Tel: 1-636-394-2877
Fax: 1-636-527-1607

Europe

Cooper Bussmann
Cooper (UK) Limited
Burton-on-the-Wolds
Leicestershire • LE12 5TH UK
Tel: +44 (0) 1509 882 737
Fax: +44 (0) 1509 882 786

Cooper Bussmann
Avda. Santa Eulalia, 290
08223
Terrassa, (Barcelona), Spain
Tel: +34 937 362 812
+34 937 362 813
Fax: +34 937 362 719

Asia Pacific

Cooper Bussmann
1 Jalan Kilang Timor
#06-01 Pacific Tech Centre
Singapore 159303
Tel: +65 278 6151
Fax: +65 270 4160

This bulletin is intended to present product design solutions and technical information that will help the end user with design applications. Cooper Bussmann reserves the right, without notice, to change design or construction of any products and to discontinue or limit distribution of any products. Cooper Bussmann also reserves the right to change or update, without notice, any technical information contained in this bulletin. Once a product has been selected, it should be tested by the user in all possible applications.

Life Support Policy: Cooper Bussmann does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.