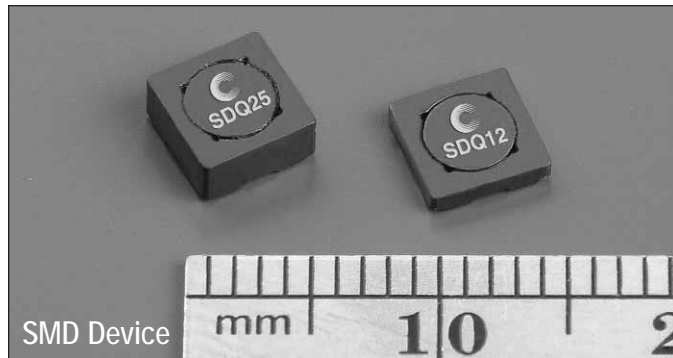


Low-Profile Dual Winding Shielded Inductor/Transformer

SDQ Series



Description

- 125°C maximum total temperature operation
- Dual winding inductors that can be used as either a single inductor, or in coupled inductor/transformer applications (1:1 turns ratio)
- Windings can be connected in series or parallel, offering a broad range of inductance and current ratings
- Current range from 6.43 to 0.063 Amps
- Inductance range from 0.47μH to 4.03mH

- Ferrite shielded, low EMI
- Ferrite core material
- 500Vdc isolation between windings
- RoHS compliant



Applications

- As a transformer: SEPIC, flyback
- As an inductor: Buck, boost, coupled inductor
- Digital cameras, CD players, cellular phones, and PDA's
- PCMCIA cards
- GPS systems

Environmental Data

- Storage temperature: -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, SDQ12-3800, SDQ25-2900 parts per reel, 13" diameter reel

Part Number	Rated Inductance (μH)	Part Marking	Parallel Ratings					Series Ratings				
			OCL ⁽¹⁾ ±20% (μH)	I _{rms} ⁽²⁾ Amps	I _{sat} ⁽³⁾ Amps	DCR ⁽⁴⁾ (Ω) typ.	Volts ⁽⁵⁾ μ-Sec typ.	OCL ⁽¹⁾ ±20% (μH)	I _{rms} ⁽²⁾ Amps	I _{sat} ⁽³⁾ Amps	DCR Ω (4) typ.	Volts ⁽⁵⁾ μ-Sec typ.
SDQ12-R47-R	0.47	A	0.49±30%	2.78	4.34	0.0325	2.45	1.96±30%	1.39	2.17	0.1298	4.90
SDQ12-1R0-R	1	B	0.81	2.49	3.38	0.0403	3.15	3.24	1.25	1.69	0.1611	6.30
SDQ12-1R5-R	1.5	C	1.69	1.69	2.34	0.0870	4.55	6.76	0.847	1.17	0.3481	9.10
SDQ12-2R2-R	2.2	D	2.25	1.60	2.03	0.0977	5.25	9.00	0.800	1.01	0.3908	10.5
SDQ12-3R3-R	3.3	E	3.61	1.28	1.60	0.1527	6.65	14.44	0.640	0.800	0.6106	13.3
SDQ12-4R7-R	4.7	F	4.41	1.12	1.45	0.1990	7.35	17.64	0.560	0.724	0.7959	14.7
SDQ12-6R2-R	6.2	G	6.25	1.02	1.22	0.2387	8.75	25.00	0.512	0.608	0.9548	17.5
SDQ12-8R2-R	8.2	H	8.41	0.868	1.05	0.3318	10.15	33.64	0.434	0.524	1.33	20.3
SDQ12-100-R	10	J	9.61	0.831	0.981	0.3620	10.85	38.44	0.416	0.490	1.45	21.7
SDQ12-150-R	15	K	15.21	0.658	0.779	0.5766	13.65	60.84	0.329	0.390	2.31	27.3
SDQ12-220-R	22	L	22.09	0.548	0.647	0.8332	16.45	88.36	0.274	0.323	3.33	32.9
SDQ12-330-R	33	M	32.49	0.439	0.533	1.29	19.95	130.0	0.220	0.267	5.18	39.9
SDQ12-470-R	47	N	47.61	0.401	0.441	1.55	24.15	190.4	0.201	0.220	6.21	48.3
SDQ12-680-R	68	O	68.89	0.326	0.366	2.36	29.05	275.6	0.163	0.183	9.43	58.1
SDQ12-820-R	82	P	82.81	0.309	0.334	2.62	31.85	331.2	0.154	0.167	10.49	63.7

(1) Test Parameters: 100kHz, 0.25 Vrms 0.0Adc

(2) I_{rms}: DC current for approximately ΔT of 40°C without core loss. It is recommended that the temperature of the part not to exceed 125°C. Derating is necessary for AC currents

(3) I_{sat}: Peak current for approximately 30% rolloff @20°C

(4) DCR limits @20°C

(5) Applied Volt-Time product (V-μs) across the inductor at 100kHz necessary to generate a core loss equal to 10% of the total losses for a 40°C temperature rise. Derating of the I_{rms} is required to prevent excessive temperature rise.

Part Number Definition:

SDQ12-XXX-R

SDQ12 = Product code and Size

XXX = Inductance in uH, R = Decimal point

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

-R suffix indicated RoHS compliant

Part Number	Rated Inductance (μH)	Part Marking	Parallel Ratings					Series Ratings				
			OCL ⁽¹⁾ ±20% (μH)	I _{rms} ⁽²⁾ Amps	I _{sat} ⁽³⁾ Amps	DCR ⁽⁴⁾ (Ω) typ.	Volts ⁽⁵⁾ μ-Sec typ.	OCL ⁽¹⁾ ±20% (μH)	I _{rms} ⁽²⁾ Amps	I _{sat} ⁽³⁾ Amps	DCR Ω (4) typ.	Volts ⁽⁵⁾ μ-Sec typ.
SDQ25-R47-R	0.47	A	0.392±30%	3.71	6.43	0.0181	2.31	1.57±30%	1.86	3.21	0.0725	4.62
SDQ25-R82-R	0.82	B	0.648±30%	3.37	5.00	0.0221	2.97	2.59±30%	1.68	2.50	0.0883	5.94
SDQ25-1R0-R	1	C	0.97	3.15	4.09	0.0252	3.63	3.87	1.58	2.05	0.1007	7.26
SDQ25-1R5-R	1.5	D	1.35	2.97	3.46	0.0283	4.29	5.41	1.49	1.73	0.1130	8.58
SDQ25-2R2-R	2.2	E	2.31	2.67	2.65	0.0351	5.61	9.25	1.34	1.32	0.1402	11.2
SDQ25-3R3-R	3.3	F	2.89	2.50	2.37	0.0399	6.27	11.55	1.25	1.18	0.1595	12.5
SDQ25-4R7-R	4.7	G	5	1.96	1.80	0.0653	8.25	20.00	0.98	0.900	0.2612	16.5
SDQ25-6R8-R	6.8	H	6.73	1.84	1.55	0.0741	9.57	26.91	0.918	0.776	0.2964	19.1
SDQ25-8R2-R	8.2	J	8.71	1.57	1.36	0.1015	10.9	34.85	0.785	0.682	0.4059	21.8
SDQ25-100-R	10	K	9.8	1.53	1.29	0.1068	11.6	39.20	0.765	0.643	0.4273	23.1
SDQ25-150-R	15	L	14.79	1.24	1.05	0.1632	14.2	59.17	0.619	0.523	0.6526	28.4
SDQ25-220-R	22	M	22.47	1.01	0.849	0.2431	17.5	89.89	0.507	0.425	0.9724	35.0
SDQ25-330-R	33	N	33.8	0.812	0.692	0.3795	21.5	135.2	0.406	0.346	1.52	42.9
SDQ25-470-R	47	O	47.43	0.749	0.584	0.4461	25.4	189.7	0.374	0.292	1.78	50.8
SDQ25-680-R	68	P	69.19	0.603	0.484	0.6865	30.7	276.8	0.302	0.242	2.75	61.4
SDQ25-820-R	82	Q	81.61	0.580	0.446	0.7435	33.3	326.4	0.290	0.223	2.97	66.7
SDQ25-101-R	100	R	98.57	0.499	0.405	1.00	36.6	394.3	0.249	0.203	4.02	73.3
SDQ25-151-R	150	S	150.2	0.408	0.328	1.50	45.2	600.6	0.204	0.164	6.00	90.4
SDQ25-221-R	220	T	223.1	0.326	0.269	2.36	55.1	892.4	0.163	0.135	9.42	110
SDQ25-331-R	330	U	329.7	0.292	0.222	2.93	67.0	1318.7	0.146	0.111	11.71	134
SDQ25-471-R	470	V	472.4	0.243	0.185	4.25	80.2	1889.6	0.121	0.093	16.99	160
SDQ25-681-R	680	W	677.4	0.197	0.155	6.45	96.0	2709.8	0.098	0.077	25.78	192
SDQ25-821-R	820	X	824.3	0.186	0.140	7.25	106	3297.3	0.093	0.070	28.99	212
SDQ25-102-R	1000	Y	1008.2	0.160	0.127	9.82	117	4032.8	0.080	0.063	39.26	234

(1) Test Parameters: 100kHz, 0.25 Vrms 0.0A dc

(2) I_{rms}: DC current for approximately ΔT of 40°C without core loss. It is recommended that the temperature of the part not to exceed 125°C. Derating is necessary for AC currents

(3) I_{sat}: Peak current for approximately 30% rolloff @20°C

(4) DCR limits @20°C

(5) Applied Volt-Time product (V-μs) across the inductor at 100kHz necessary to generate a core loss equal to 10% of the total losses for a 40°C temperature rise. Derating of the I_{rms} is required to prevent excessive temperature rise.

Part Number Definition:

SDQ12-XXX-R

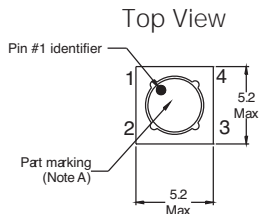
SDQ12 = Product code and Size

XXX = Inductance in uH, R = Decimal point

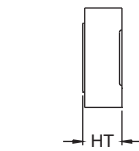
If no R is present, third character = # of zeros.

-R suffix indicated RoHS compliant

Dimensions - mm

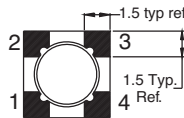


Side View

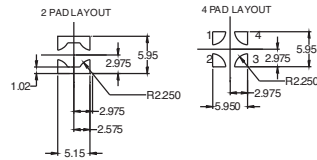


SDQ12 = 1.2mm max.
SDQ25 = 2.5mm max.

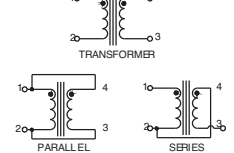
Bottom View



Recommended Pad Layout



Schematic



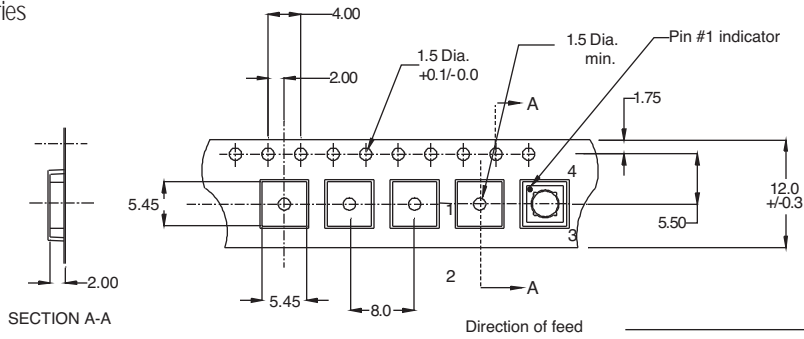
Part marking: Line 1 (1st digit inductance value per part marking designator in chart above)
Line 2: xx (indicates the product size code)

(2nd digit is a bi-weekly production date code)

(3rd digit is the last digit of the year produced)

Packaging Information - mm

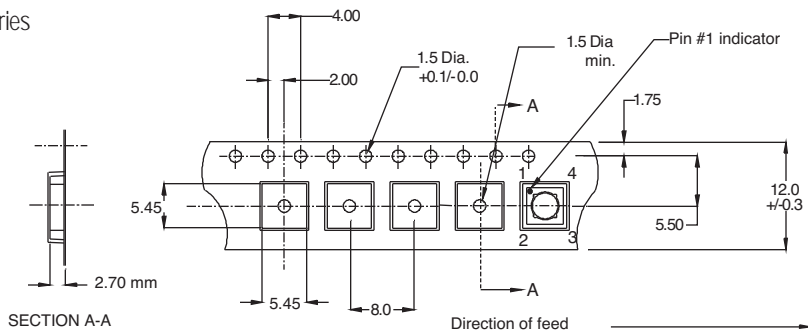
SDQ12 Series



Actual Size
SDQ12

Supplied in tape-and-reel packaging, 3800 parts per reel, 13" diameter reel.

SDQ25 Series

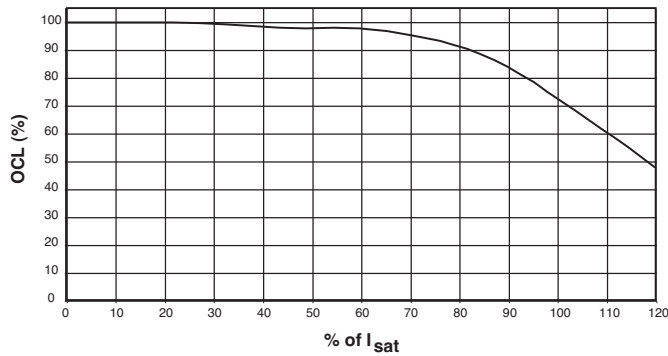


Actual Size
SDQ25

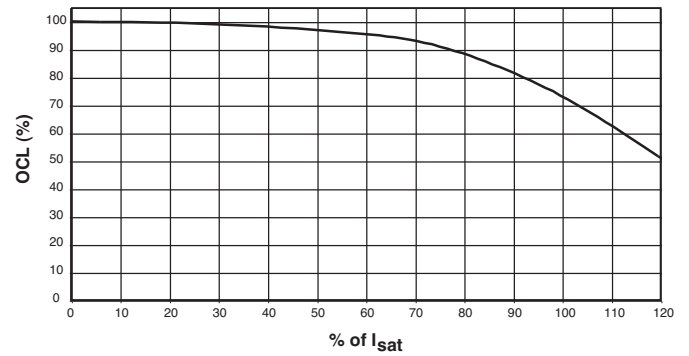
Supplied in tape-and-reel packaging, 2900 parts per reel, 13" diameter reel.

Inductance Characteristics

OCL vs I_{sat}
SDQ12

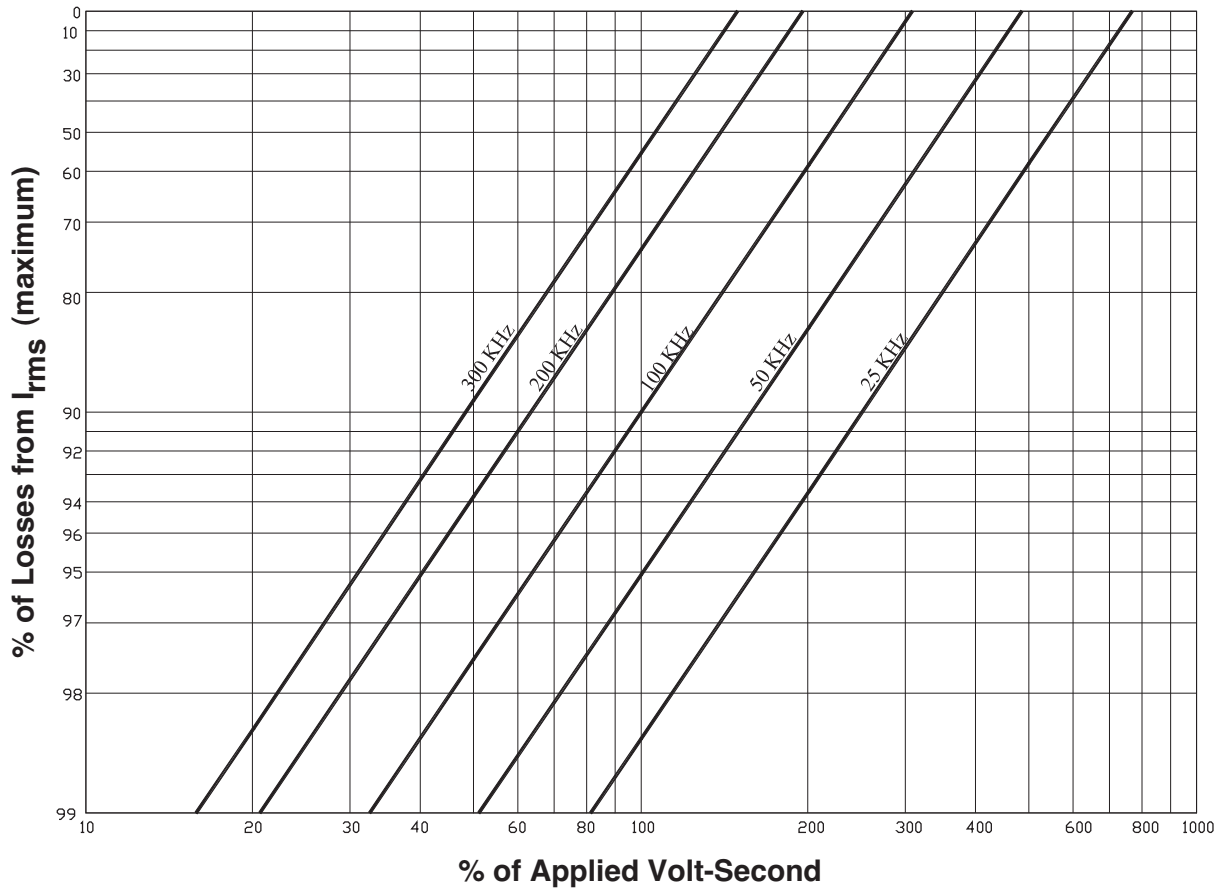


OCL vs I_{sat}
SDQ25



Core Loss

I_{rms} Derating with Core Loss



North America

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

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

The only controlled copy of this Data Sheet is the electronic read-only version located on the Cooper Bussmann Network Drive. All other copies of this document are by definition uncontrolled. This bulletin is intended to clearly present comprehensive product data and provide 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.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Fixed Inductors](#) category:

Click to view products by [Eaton](#) manufacturer:

Other Similar products are found below :

[MLZ1608M6R8WTD25](#) [MLZ1608N6R8LT000](#) [MLZ1608N3R3LTD25](#) [MLZ1608N3R3LT000](#) [MLZ1608N150LT000](#)

[MLZ1608M150WTD25](#) [MLZ1608M3R3WTD25](#) [MLZ1608M3R3WT000](#) [MLZ1608M150WT000](#) [MLZ1608A1R5WT000](#)

[MLZ1608N1R5LT000](#) [B82432C1333K000](#) [PCMB053T-1R0MS](#) [PCMB053T-1R5MS](#) [PCMB104T-1R5MS](#) [CR32NP-100KC](#) [CR32NP-](#)

[151KC](#) [CR32NP-180KC](#) [CR32NP-181KC](#) [CR32NP-1R5MC](#) [CR32NP-390KC](#) [CR32NP-3R9MC](#) [CR32NP-680KC](#) [CR32NP-820KC](#)

[CR32NP-8R2MC](#) [CR43NP-390KC](#) [CR43NP-560KC](#) [CR43NP-680KC](#) [CR54NP-181KC](#) [CR54NP-470LC](#) [CR54NP-820KC](#) [CR54NP-8R5MC](#)

[MGDQ4-00004-P](#) [MGDU1-00016-P](#) [MHL1ECTTP18NJ](#) [MHL1JCTTD12NJ](#) [PE-51506NL](#) [PE-53601NL](#) [PE-53630NL](#) [PE-53824SNLT](#) [PE-](#)

[62892NL](#) [PE-92100NL](#) [PG0434.801NLT](#) [PG0936.113NLT](#) [PM06-2N7](#) [PM06-39NJ](#) [HC2LP-R47-R](#) [HC2-R47-R](#) [HC3-2R2-R](#) [HC8-1R2-R](#)