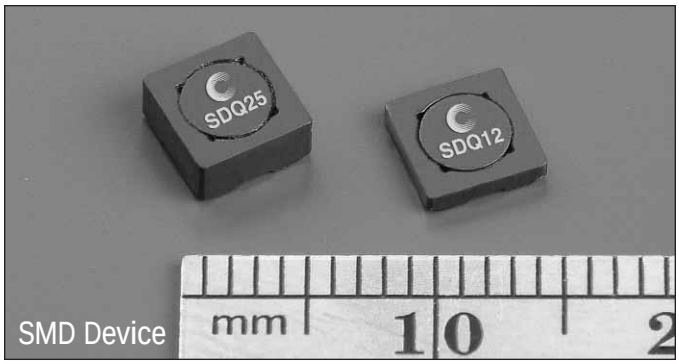
COILTRONICS®

Low-Profile Dual Winding Shielded Inductor/Transformer

SDQ Series



SMD Device

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

RoHS 2002/95/EC

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

			Parallel Ratings					Series Ratings				
Part Number	Rated Inductance (µH)	Part Marking	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

			Parallel Ratings					Series Ratings				
Part Number	Rated Inductance (µH)	Part Marking	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 0.0Adc

(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

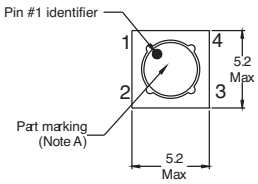
(4) DCR limits @20°C

(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.

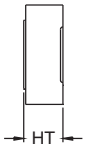
Part Number Definition:
SDQ12-XXX-R
SDQ12 = Product code and Size
XXX = Inductance in uH, R = Decimal point
If no R is present, third character = # of zeros.
-R suffix indicated RoHS compliant

Dimensions - mm

Top View

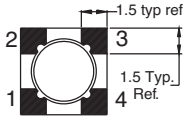


Side View

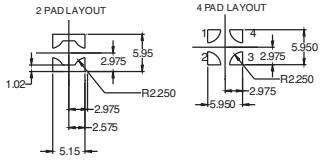


SDQ12 = 1.2mm max.
SDQ25 = 2.5mm max.

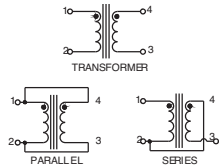
Bottom View



Recommended Pad Layout



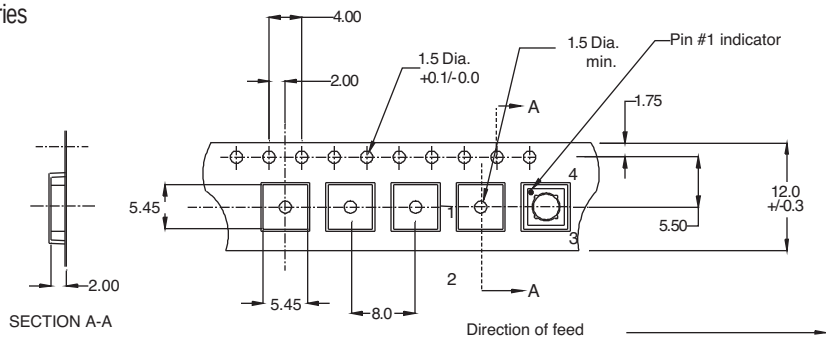
Schematic



Part marking: Line 1 (1st digit inductance value per part marking designator in chart above) (2nd digit is a bi-weekly production date code) (3rd digit is the last digit of the year produced)
Line 2: xx (indicates the product size code)

Packaging Information - mm

SDQ12 Series

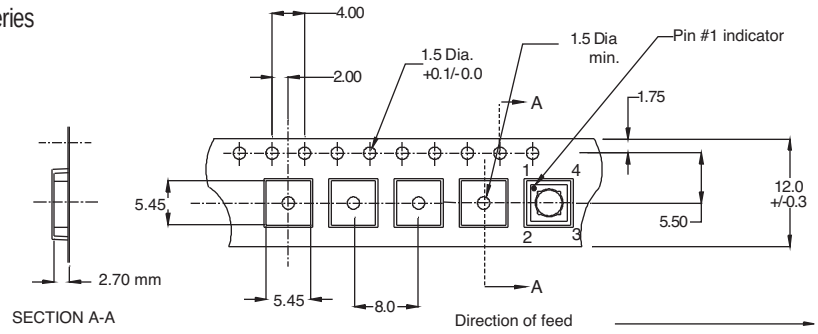




Actual Size
SDQ12

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

SDQ25 Series

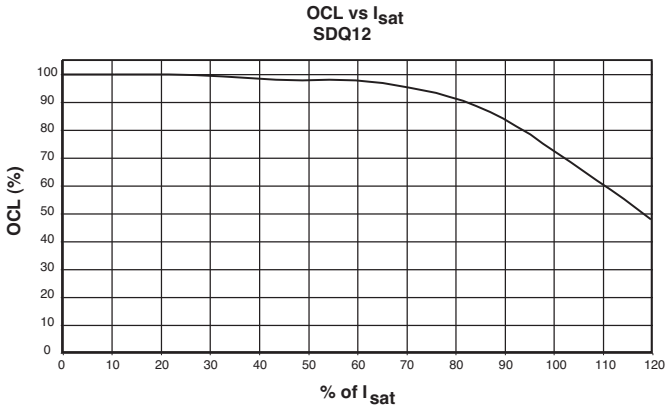


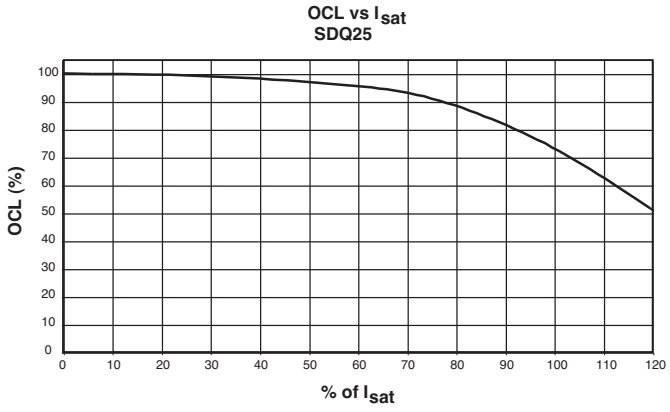


Actual Size
SDQ25

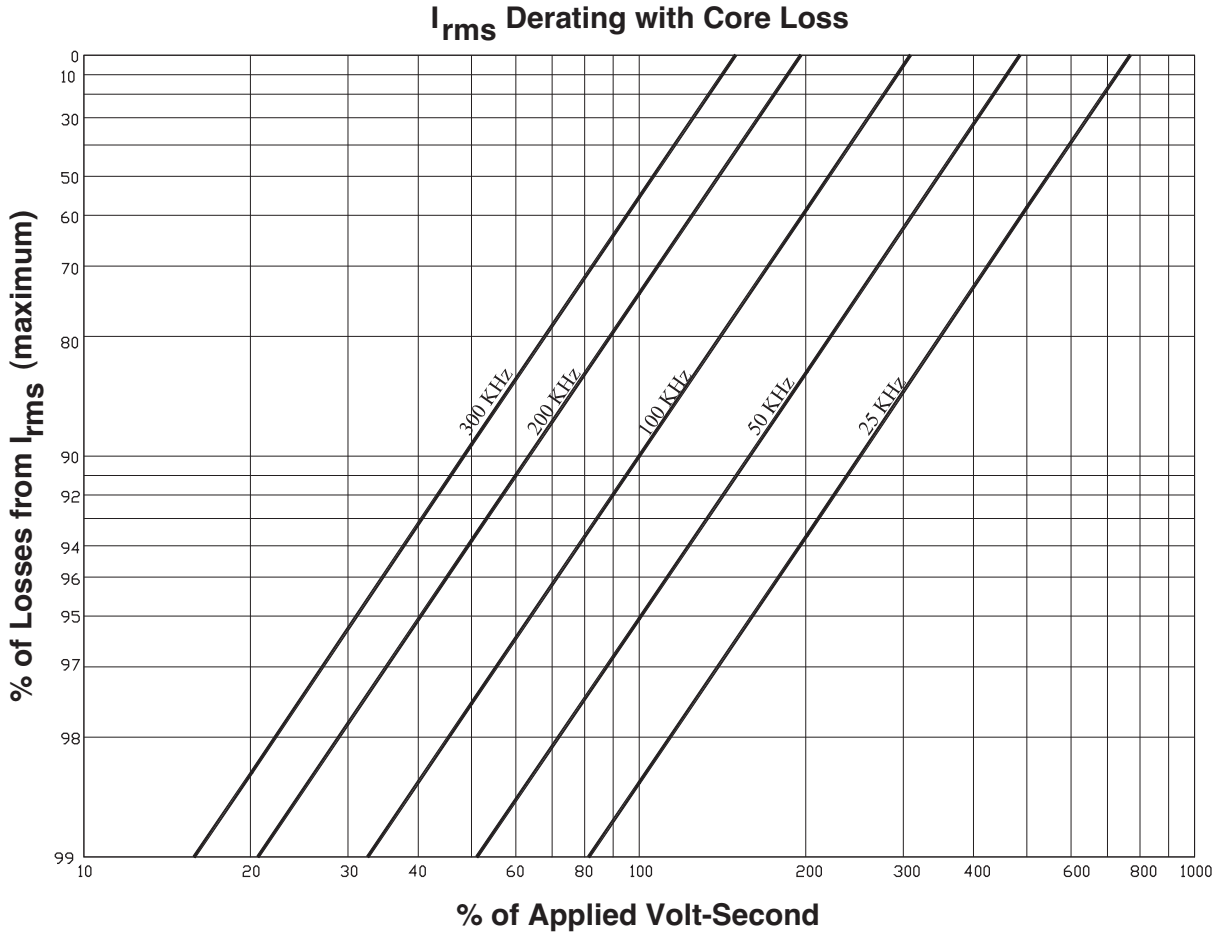
Supplied in tape-and-reel packaging, 2900 parts per reel, 13” diameter reel.

Inductance Characteristics





Core Loss



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