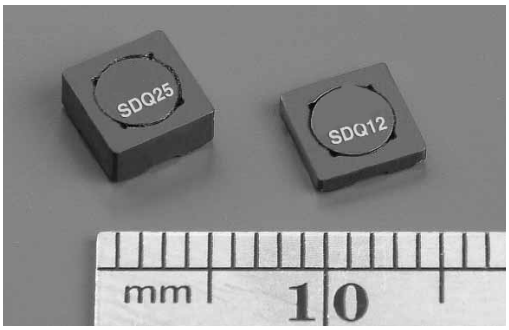
SDQ

Low-profile dual winding shielded drum inductor/transformer



Applications

- Transformer: (1:1), SEPIC, flyback
- Buck, boost, coupled inductor
- Mobile phones
- Notebook and laptop power
- Digital cameras
- Media players
- PCMCIA cards
- GPS systems

Product features

- 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 0.063 A to 6.43 A
- Inductance range from 0.47 µH to 4.03 mH
- Ferrite shielded, low EMI
- Ferrite core material
- 500 Vdc isolation between windings

Environmental Data

- Storage temperature range (Component): -40 °C to +125 °C
- Operating temperature range: -40 °C to +125 °C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 (latest revision) compliant

Pb HALOGEN HF FREE RoHS

Powering Business Worldwide

Product specifications

			Parallel Ratings					Series Ratings				
Part Number	Rated Inductance (µH)	Part Marking	OCL (1) ±20% (µH)	I_{rms} (2) (A)	I_{sat} (3) (A)	DCR (4) (Ω) typ.	Volts (5) (u-sec) typ.	OCL (1) ±20% (µH)	I_{rms} (2) (A)	I_{sat} (3) (A)	DCR Ω (4) typ.	Volts (5) (u-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
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: 100 kHz,.0.25 Vrms 0.0 Adc

(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

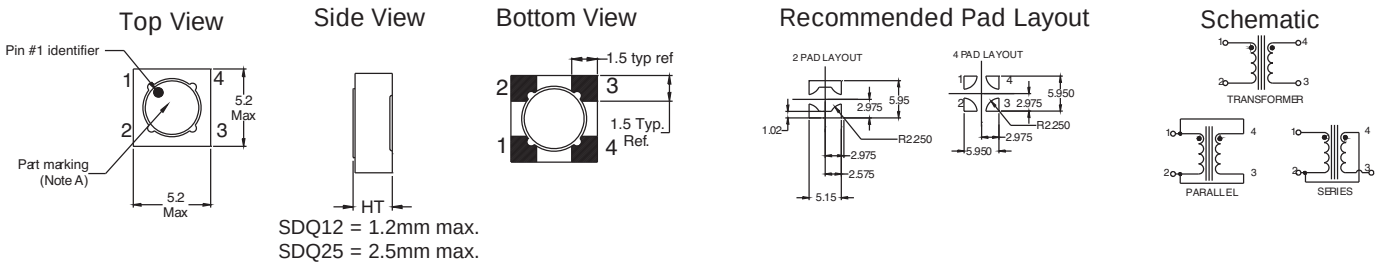
(3) I_{sat}: Peak current for approximately 30% rolloff @ +20 °C

(4) DCR limits @ +20 °C

(5) Applied Volt-Time product (V-µs) across the inductor at 100 kHz 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



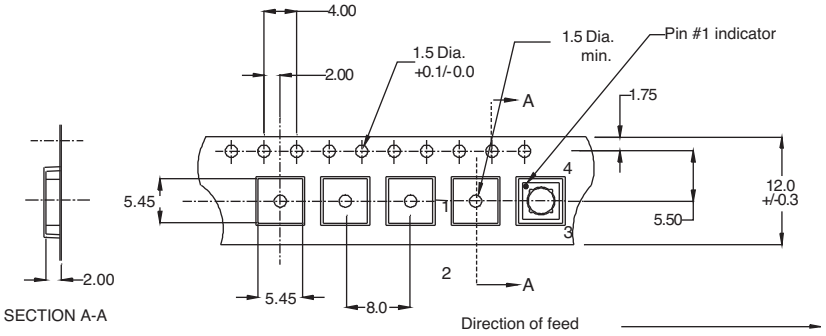
SDQ12 = 1.2mm max.
SDQ25 = 2.5mm max.

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)

Do not route traces or vias underneath the inductor

Packaging- mm

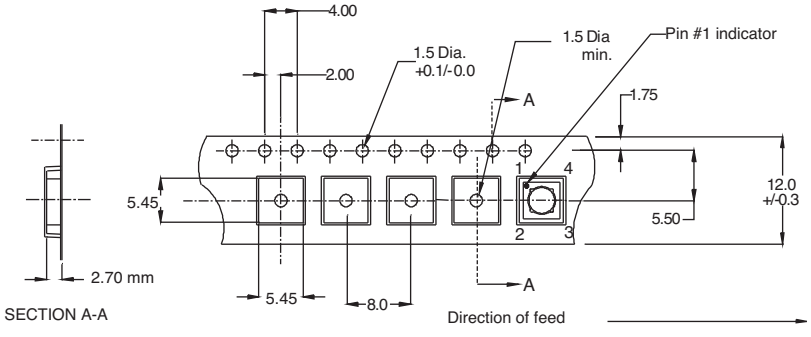
SDQ12



Actual Size
SDQ12

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

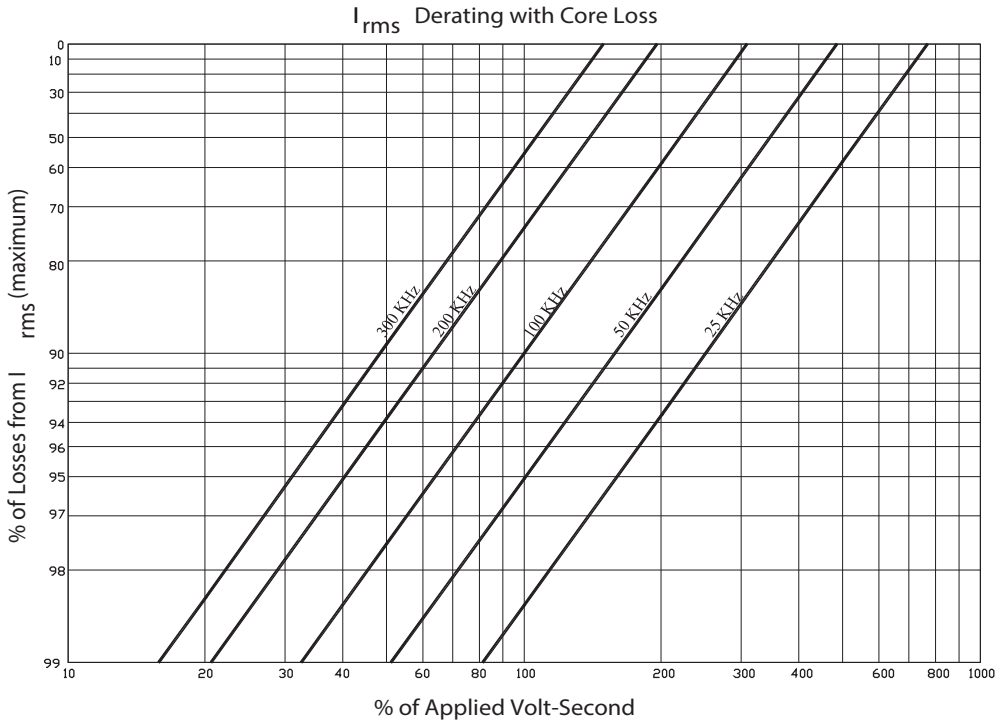
SDQ25



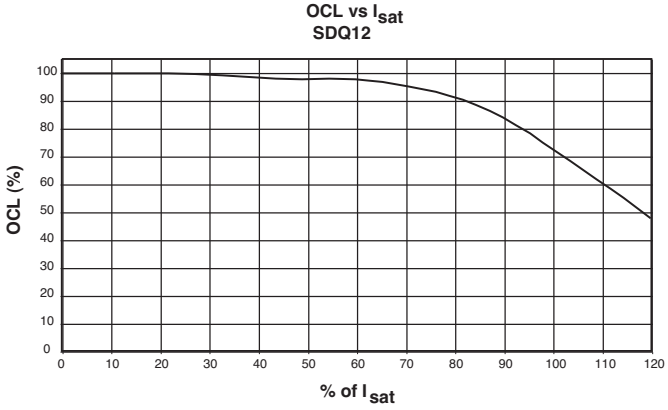
Actual Size
SDQ25

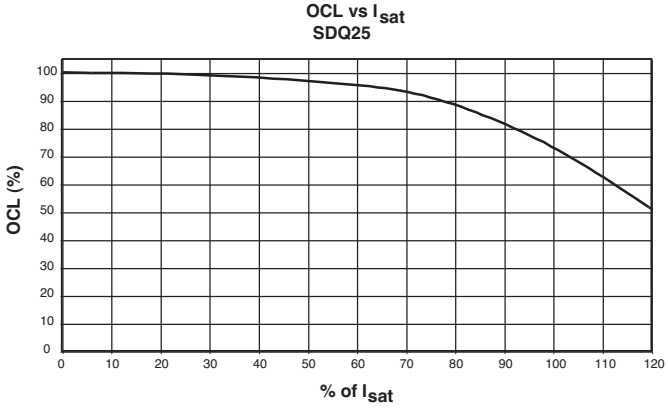
Supplied in tape-and-reel packaging, 2900 parts per reel, 13” diameter reel.

Core loss



Inductance characteristics





Solder reflow profile

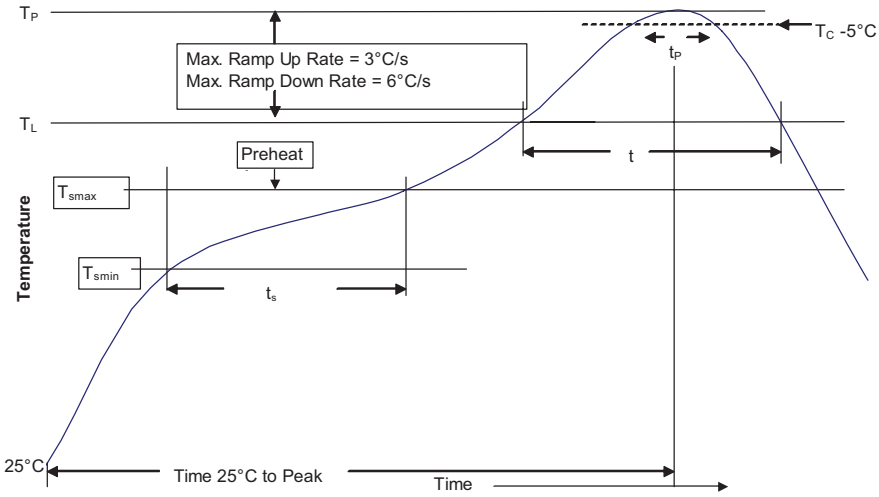


Table 1 - Standard SnPb Solder (T_C)

Package Thickness	Volume mm3 <350	Volume mm3 ≥350
<2.5mm)	235°C	220°C
≥2.5mm	220°C	220°C

Table 2 - Lead (Pb) Free Solder (T_C)

Package Thickness	Volume mm^3 <350	Volume mm^3 350 - 2000	Volume mm^3 >2000
<1.6mm	260°C	260°C	260°C
1.6 – 2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

Reference JDEC J-STD-020

Profile Feature		Standard SnPb Solder	Lead (Pb) Free Solder
Preheat and Soak	• Temperature min. (T_{smin})	100°C	150°C
	• Temperature max. (T_{smax})	150°C	200°C
	• Time (T_{smin} to T_{smax}) (t_s)	60-120 Seconds	60-120 Seconds
Average ramp up rate T_{smax} to T_p		3°C/ Second Max.	3°C/ Second Max.
Liquidous temperature (T_L) Time at liquidous (t_L)		183°C 60-150 Seconds	217°C 60-150 Seconds
Peak package body temperature (T_P)*		Table 1	Table 2
Time (t_p)** within 5 °C of the specified classification temperature (T_C)		20 Seconds**	30 Seconds**
Average ramp-down rate (T_p to T_{smax})		6°C/ Second Max.	6°C/ Second Max.
Time 25°C to Peak Temperature		6 Minutes Max.	8 Minutes Max.

* Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.
** Tolerance for time at peak profile temperature (t_p) is defined as a supplier minimum and a user maximum.

Eaton
Electronics Division
1000 Eaton Boulevard
Cleveland, OH 44122
United States
www.eaton.com/electronics

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ООО «ЛайфЭлектроникс» **“LifeElectronics” LLC**

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

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Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru

www.lifeelectronics.ru