

SMD Unshielded Power Inductors - SCD Series

Standard Specifications

Stamp	Inductance (μH)	D.C.R () Max.															
		SCD 0301	SCD 03011	SCD 03015	SCD 03021	SCD 0403	SCD 0501	SCD 0502	SCD 0503	SCD 0504	SCD 0703	SCD 0705	SCD 1004	SCD 1005	SCD 1006	SCDR 105B	SCD 1307
1R0	1.0		0.084		0.07	0.033	0.034	0.03	0.03								
1R2	1.2								0.03								
1R4	1.4				0.09	0.038	0.048	0.04						0.02			
1R5	1.5		0.126						0.03								
1R8	1.8				0.11	0.042	0.062	0.05	0.03					0.02			
2R2	2.2	0.33	0.18	0.10 ±30%	0.13	0.047	0.064	0.06	0.03								
2R7	2.7				0.14	0.052	0.078	0.07	0.04					0.02			
3R3	3.3	0.52	0.27		0.17	0.058	0.097	0.08	0.05								
3R9	3.9		0.32		0.19	0.076	0.105	0.09	0.06					0.03			
4R7	4.7	0.62	0.33	0.15 ±30%	0.21	0.094	0.134	0.14	0.07					0.04		0.040	
5R6	5.6		0.48		0.22	0.101	0.170	0.15	0.08					0.04			
6R8	6.8	0.87	0.56		0.25	0.117	0.187	0.16	0.09					0.04		0.037	
8R2	8.2	1.00	0.62		0.28	0.132	0.225	0.17	0.10					0.05			
100	10	1.14	0.90	0.30 ±30%	0.32	0.182	0.255	0.18	0.12	0.10	0.08	0.07	0.05	0.060		0.06	
120	12	1.44	1.00		0.35	0.210	0.292	0.20	0.13	0.12	0.09	0.08	0.06	0.070		0.07	
150	15	1.60	1.10	0.58 ±30%	0.40	0.235	0.360	0.22	0.15	0.14	0.10	0.09	0.07	0.080		0.07	
180	18		1.24		0.48	0.338	0.430	0.25	0.18	0.15	0.11	0.10	0.08	0.090		0.08	0.036
220	22	1.90	1.40	0.71 ±30%	0.58	0.378	0.492	0.35	0.22	0.18	0.13	0.11	0.09	0.100		0.08	0.047
270	27	2.85	2.18		0.65	0.522	0.603	0.45	0.26	0.20	0.15	0.12	0.10	0.110		0.10	0.060
330	33		2.54	1.10 ±30%	0.80	0.540	0.796	0.56	0.33	0.23	0.17	0.13	0.12	0.120		0.11	0.065
390	39		2.80		0.90	0.587	0.897	0.69	0.42	0.32	0.22	0.16	0.15	0.140		0.12	0.075
470	47		3.10	1.30 ±30%	1.19	0.844	1.020	0.72	0.50	0.37	0.25	0.18	0.17	0.170		0.14	0.082
500	50		3.20		1.22		1.040										
560	56		3.50		1.27	0.937	1.164	0.84	0.55	0.42	0.28	0.24	0.20	0.190		0.19	0.095
680	68		5.80	2.20 ±30%	1.73	1.117	1.220	0.90	0.65	0.46	0.33	0.28	0.22	0.220		0.21	0.12
750	75		6.10		1.90		1.340										
820	82		6.60		1.99		1.570	1.20	0.80	0.60	0.41	0.37	0.25	0.25		0.28	0.14
101	100			3.50 ±30%	2.52	2.000	1.800	1.30	0.90	0.70	0.48	0.43	0.34	0.35		0.34	0.18
121	120				2.90		2.000	1.38	1.00	0.93	0.54	0.47	0.40	0.40		0.37	0.21
151	150				3.36		2.80	1.81	1.30	1.10	0.75	0.64	0.54	0.47		0.51	0.25
181	180				5.10		3.15	1.95	1.50	1.38	1.02	0.71	0.62	0.63		0.57	0.28
221	220				5.80		4.40	3.00	2.00	1.57	1.20	0.96	0.72	0.73		0.78	0.36
271	270				7.80		6.40	3.20	2.50	1.85	1.31	1.11	0.95	0.97		0.87	0.41
301	300				8.10		6.75										0.52
331	330				9.24		7.20	3.82	3.20	2.00	1.50	1.26	1.10	1.15		1.20	
391	390				10.14		8.40	4.68	3.50	2.60		1.77	1.24	1.30		1.34	0.60
461	460				11.15		12.0										
471	470				11.48		12.4	5.10	4.20	3.00		1.96	1.53	1.48		1.50	0.72
561	560				19.49		13.0	8.50	4.50	4.19			1.90	1.90			0.88
681	680				22.00		17.0	10.0	6.50	4.44				2.25			1.0
821	820				23.98		19.5	12.0	7.50	5.12				2.55			1.30
102	1000				28.80		24.0	18.0	8.00	10.00							1.60
122	1200			38 ±30%													
152	1500			55 ±30%													
602	6000															14	
822	8200															50	

Test Freq.(L): SCD0301: 0.1V/100KHz SCD03011: (100KHz/1V) SCD03015: (1MHz/1V)
 SCD03021/0403/0501/0502/ 0503: 1.0 ~ 8.2μH(7.96MHz/1V), 10 ~ 82μH (2.52MHz/1V), 100 ~ 1000μH (1kHz/1V).
 SCD0504/0703/0705/1004: 1.0 ~ 8.2μH(7.96MHz/1V), 10 ~ 82μH (2.52MHz/1V), 100 ~ 1000μH (1kHz/1V).
 SCD1005/1006: 1.0 ~ 8.2μH(7.96MHz/1V), 10 ~ 82μH (2.52MHz/1V), 100 ~ 1000μH (1kHz/1V).
 SCDR105B: 10~88μH(2.52MHz/1V); 100~470uH (KHz/ 0.25V)
 SCD1307: 18~68μH (2.52MHz/ 0.1V); 100~1000μH (0.796MHz/ 0.1V)

Test Instrument: L: HP 4192A; DCR: CHEN HWA 502BC; Rated D.C. Current: HP4284+42841A or CH1061+CH301A

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Stamp	Inductance (mH)	Rated D.C. Current (A) Max.															
		SCD 0301	SCD 03011	SCD0 3015	SCD 03021	SCD 0403	SCD 0501	SCD 0502	SCD 0503	SCD 0504	SCD 0703	SCD 0705	SCD 1004	SCD 1005	SCD 1006	SCD 105B	SCD 1307
1R0	1.0		1.80		2.080	3.80	4.00	4.50	4.50								
1R2	1.2							4.20									
1R4	1.4				1.860	3.30	3.60	4.00				3.70					
1R5	1.5		1.44					4.10									
1R8	1.8				1.800	2.91	3.00	3.30	3.70			3.70					
2R2	2.2	1.08	1.26	0.79	1.390	2.60	2.65	2.94	3.50								
2R7	2.7				1.320	2.43	2.20	2.50	3.20			3.70					
3R3	3.3	0.92	1.08		1.250	2.15	2.11	2.35	2.80								
3R9	3.9		1.00		1.200	1.98	2.00	2.20	2.60			3.70					
4R7	4.7	0.74	0.90	0.65	1.130	1.70	1.80	2.00	2.50			3.50		2.60			
5R6	5.6		0.76		0.910	1.60	1.60	1.80	2.40			3.30					
6R8	6.8	0.63	0.68		0.850	1.41	1.50	1.70	2.20			3.10		4.33			
8R2	8.2	0.58	0.63		0.820	1.26	1.30	1.40	2.00			2.70					
100	10	0.50	0.56	0.45	0.740	1.15	1.10	1.20	1.80	1.44	1.44	2.30	2.38	2.60		2.06	
120	12	0.46	0.52		0.640	1.05	1.05	1.18	1.75	1.40	1.39	2.00	2.13	2.45		1.94	
150	15	0.43	0.50	0.30	0.600	0.92	1.00	1.15	1.70	1.30	1.24	1.80	1.87	2.27		1.72	
180	18		0.46		0.540	0.84	0.95	1.10	1.60	1.23	1.12	1.60	1.73	2.15		1.58	
220	22	0.35	0.36	0.25	0.500	0.76	0.90	1.00	1.50	1.11	1.07	1.50	1.60	1.95		1.42	
270	27	0.32	0.30		0.430	0.71	0.77	0.86	1.40	0.97	0.94	1.30	1.44	1.76		1.32	
330	33		0.28	0.20	0.400	0.64	0.68	0.76	1.10	0.88	0.85	1.20	1.26	1.50		1.16	
390	39		0.26		0.370	0.59	0.67	0.75	1.00	0.80	0.74	1.10	1.20	1.37		1.10	
470	47		0.25	0.17	0.360	0.54	0.66	0.73	0.90	0.72	0.68	1.10	1.10	1.28		1.00	
500	50		0.24		0.330		0.61										
560	56		0.23		0.310	0.50	0.50	0.55	0.85	0.68	0.64	0.94	1.01	1.17		0.93	
680	68		0.20	0.13	0.300	0.460	0.47	0.52	0.80	0.61	0.59	0.85	0.91	1.11		0.85	
750	75		0.18		0.290		0.46										
820	82		0.17		0.280		0.45	0.50	0.65	0.58	0.54	0.78	0.85	1.00		0.79	
101	100			0.10	0.250	0.40	0.36	0.40	0.60	0.52	0.51	0.72	0.74	0.97		0.72	
121	120				0.200		0.32	0.36	0.58	0.48	0.49	0.66	0.69	0.89		0.63	
151	150				0.190		0.270	0.30	0.43	0.40	0.40	0.58	0.61	0.78		0.55	
181	180				0.170		0.230	0.26	0.41	0.38	0.36	0.51	0.56	0.72		0.50	
221	220				0.160		0.220	0.25	0.38	0.35	0.31	0.49	0.53	0.66		0.47	
271	270				0.140		0.190	0.21	0.35	0.29	0.29	0.42	0.45	0.57		0.41	
301	300				0.135		0.180										
331	330				0.130		0.16	0.18	0.28	0.28	0.28	0.40	0.42	0.52		0.37	
391	390				0.120		0.150	0.16	0.26	0.26		0.36	0.38	0.48		0.35	
461	460				0.090		0.140										
471	470				0.084		0.135	0.15	0.20	0.12		0.34	0.35	0.42		0.33	
561	560				0.080		0.130	0.14	0.19	0.10			0.32	0.33			
681	680				0.080		0.120	0.13	0.18	0.08				0.28			
821	820				0.070		0.063	0.07	0.15	0.05				0.24			
102	1000				0.060		0.045	0.05	0.13	0.03							
122	1200			0.05													
152	1500			0.03													
602	6000															0.27	
822	8200															0.20	

Tolerance Of Inductors

- SCD0301 2.2uH ~ 27uH ± 20%
- SCD03011 1.0 ~ 82uH ± 20%
- SCD03015 1.0 ~ 100uH ± 20%
- SCD03021 1.0 ~ 1000uH ± 20%
- SCD0403 1.0 ~ 27uH ± 20% 33 ~ 68uH ± 10%
- SCD0504 10 ~ 27uH ± 20% 33 ~ 47uH ± 15% 56 ~ 220uH ± 10%
- SCD0703 10 ~ 47uH ± 20% 56 ~ 330uH ± 10%
- SCD0705 10 ~ 470uH ± 10%
- SCD1004 10 ~ 47uH ± 20% 56 ~ 560uH ± 10%
- SCD1005 10 ~ 39uH ± 20% 47 ~ 820uH ± 10%

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- SCD0501 1.0 ~ 27 μ H \pm 20% 33 ~ 1000 μ H \pm 10%
- SCD0502 1.0 ~ 27 μ H \pm 20% 33 ~ 1000 μ H \pm 10%
- SCD1307 18~27 μ H \pm 20% .39~1000 μ H \pm 10%
- SCD1006 6000~8200 \pm 20%
- SCDR105B 10 ~ 27 μ H \pm 20% 33 ~ 82 μ H \pm 15% 100~4700uH \pm 10%

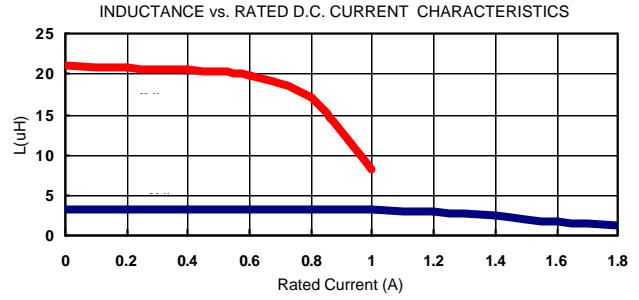
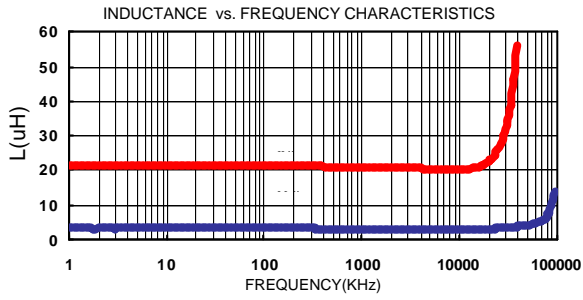
This indicates the value of current when the inductance is 10% lower than its initial value at D.C superposition or D.C current when at $\Delta t = 40^\circ$ whichever is lower

SMD Unshielded Power Inductors - SCD Series

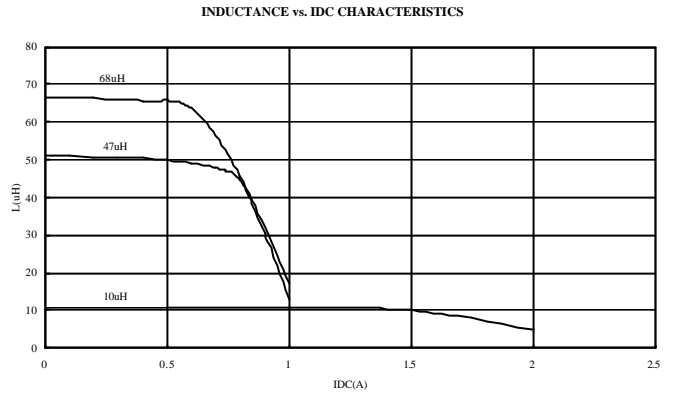
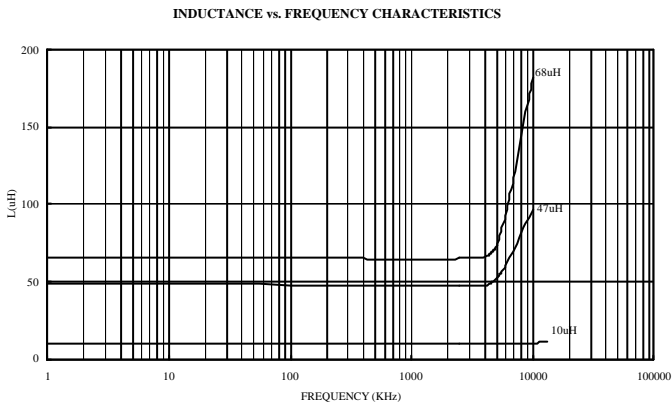
Curves of SCD Series

Test Instruments : HP4291A Impedance / Material Analyzer

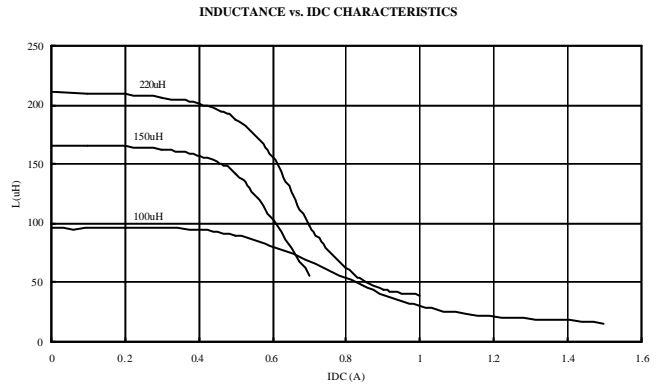
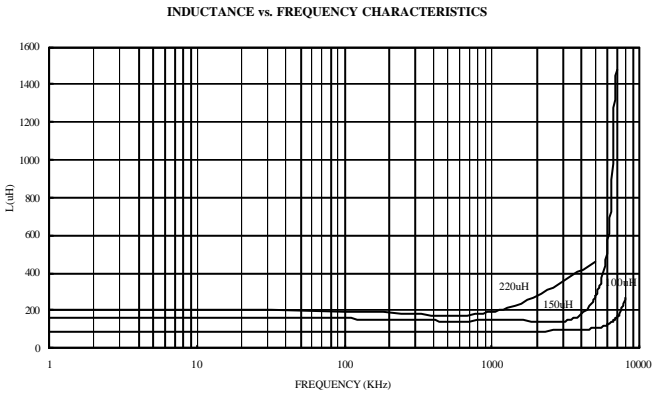
SCD03011



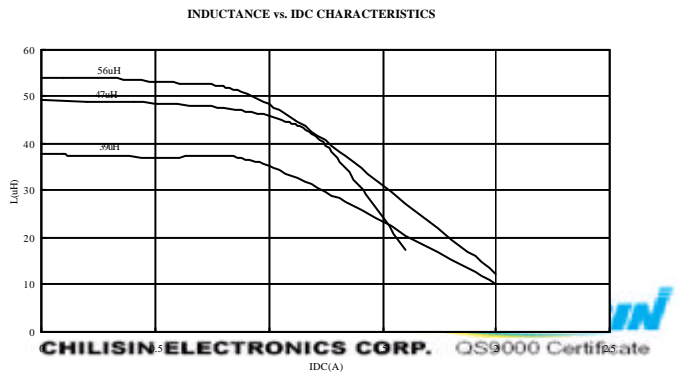
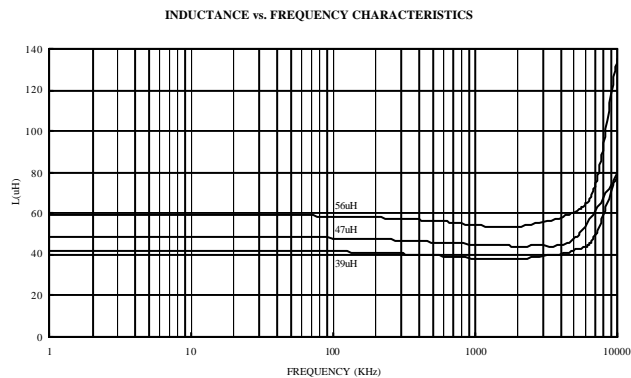
SCD0403



SCD0504



SCD0703

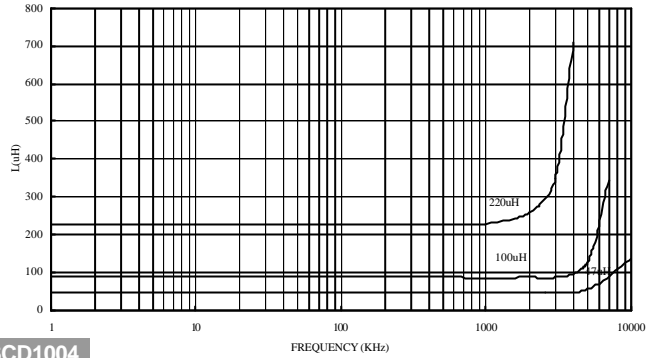


SMD Unshielded Power Inductors - SCD Series

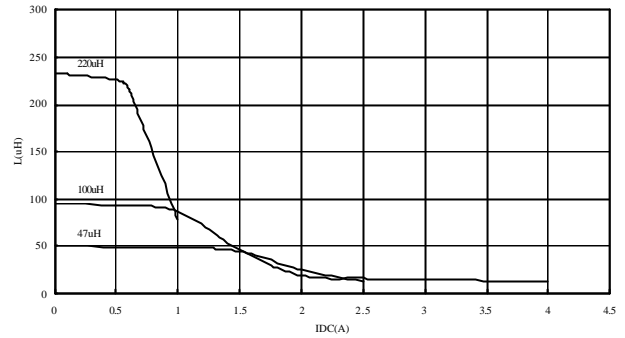
Test Instruments : HP4291A Impedance / Material Analyzer

SCD0705

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

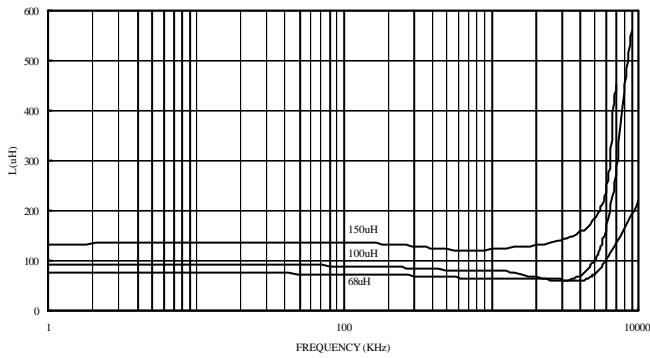


INDUCTANCE vs. IDC CHARACTERISTICS

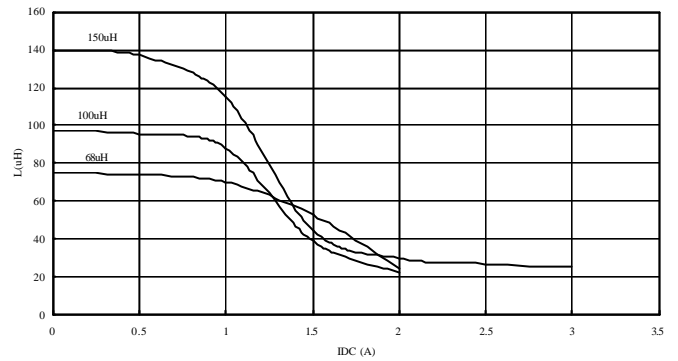


SCD1004

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

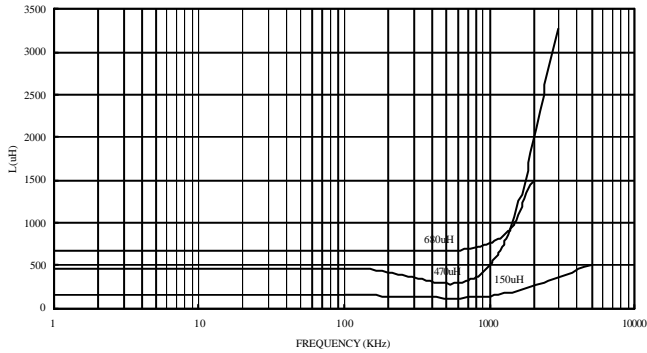


INDUCTANCE vs. IDC CHARACTERISTICS

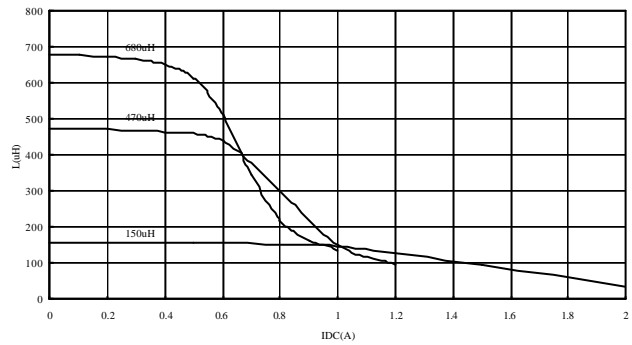


SCD1005

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

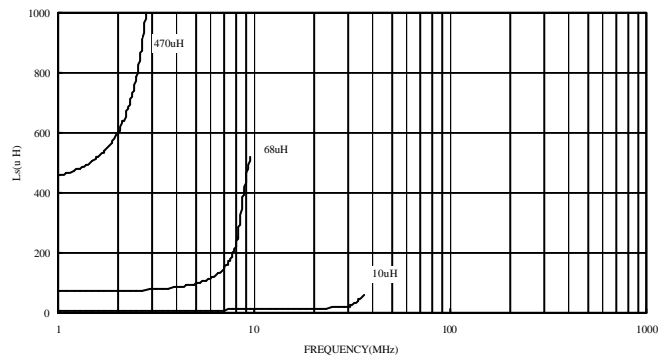


INDUCTANCE vs. IDC CHARACTERISTICS

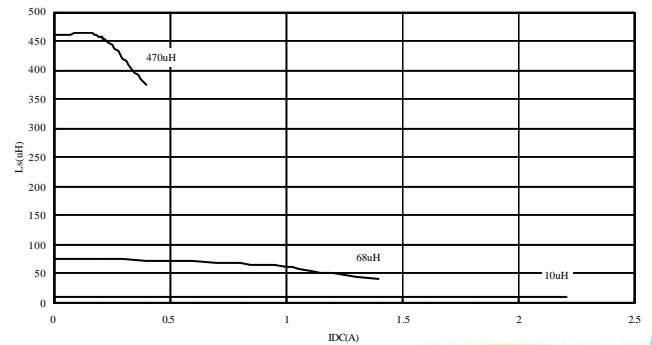


SCDR105B

INDUCTANCE vs. FREQUENCY CHARACTERISTICS

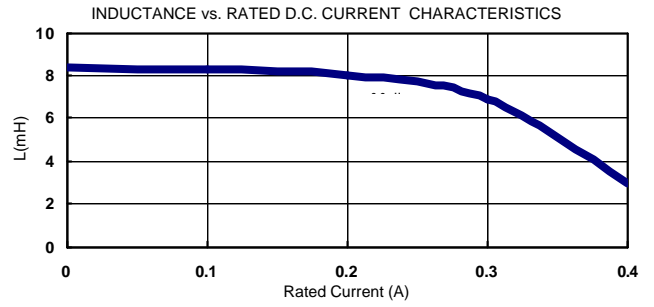
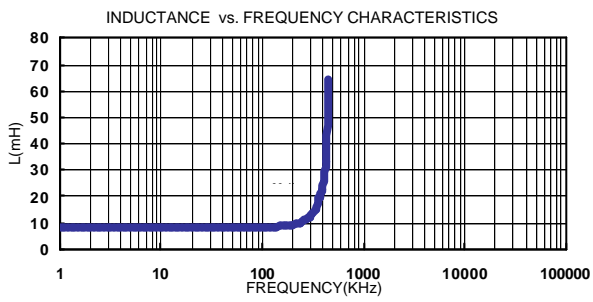


INDUCTANCE vs. IDC CHARACTERISTICS

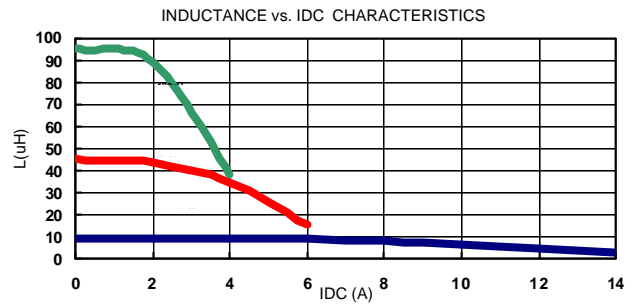
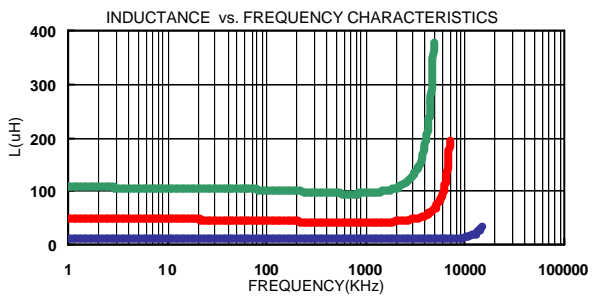


SMD Unshielded Power Inductors - SCD Series

SCD1006



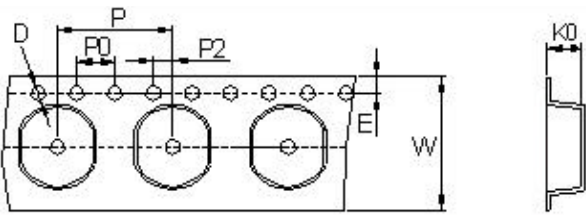
SCD1307



Packaging Specifications

Tape Dimensions

Figure 1



Tape Material

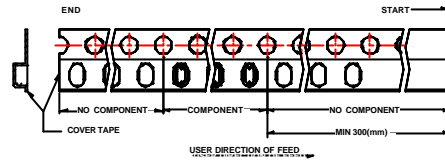


Figure 2

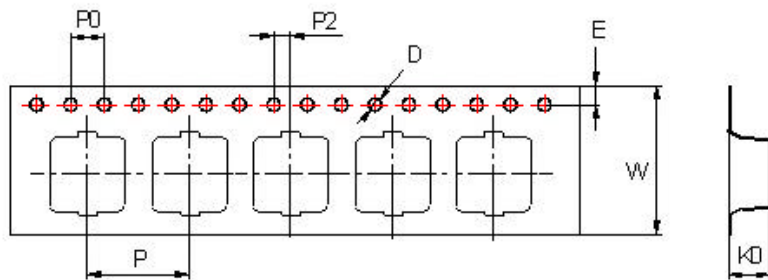


Figure 1

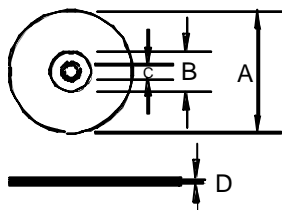
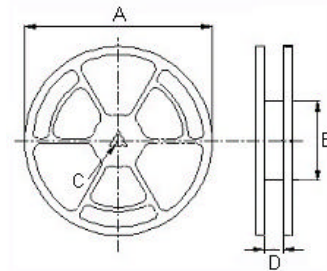


Figure 2



Dimensions in mm

TYPE	Fig.	Tape Dimensions							Reel Dimensions				Quantity PCS / REEL
		K0	D	E	W	P	P0	P2	A	B	C	D	
SCD0301	2	1.4	1.55	1.75	12	8	4	2	178	60	13	13.2	1000
SCD03011	1	1.4	1.50	1.75	12	8	4	2	330	100	13	13.4	3000
SCD03015	1	1.80	1.55	1.75	12	8	4	2	330	100	13	13.4	3000
SCD03021	1	2.50	1.55	1.75	12	8	4	2	330	100	13	13.4	3000
SCD0403	1	3.1	1.55	1.75	12	8	4	2	330	100	13	13.4	2000
SCD0501	1	2.35	1.55	1.75	12	8	4	2	330	100	13	13.4	2000
SCD0502	1	3.00	1.55	1.75	12	8	4	2	330	100	13	13.4	2000
SCD0503	1	3.30	1.55	1.75	12	8	4	2	330	100	13	13.4	2000
SCD0504	1	4.8	1.55	1.75	16	8	4	2	330	100	13	17.4	1500
SCD0703	1	3.8	1.55	1.75	16	12	4	2	330	100	13	17.4	1000
SCD0705	1	5.2	1.55	1.75	16	12	4	2	330	100	13	17.4	700
SCD1004	1	5.8	1.55	1.75	24	12	4	2	330	100	13	24.4	700
SCD1005	1	5.8	1.55	1.75	24	12	4	2	330	100	13	24.4	700
SCD1006	1	7.0	1.55	1.75	24	12	4	2	330	100	13	24.4	700
SCDR105B	1	5.8	1.55	1.75	24	12	4	2	330	100	13	24.4	750
SCD1307	1	7.4	1.55	1.75	24	20	4	2	330	100	13	24.4	300

Reliability Test – Power Inductors

SMD Power Inductor

- SDT/ SSL/ SSL_HC/ SCD/ SCMD/ SCDS/ SDS/ SDT/ SLF series

1-1.Mechanical Performances

No	Item	Specification	Test Method
1-1-1	Vibration	Appearance: No damage Inductance: within $\pm 0\%$ of initial value Q change: within $\pm 0\%$ of initial value	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
1-1-2	Resistance to Soldering Heat	Appearance: No damage	Pre-heating: 150 , 1min Solder Composition: Sn/Pb = 63/37 Solder Temperature: 260 \pm Immersion Time: 10 \pm sec
1-1-3	Solder ability	The electrodes shall be at least 90% covered with new solder coating	Pre-heating: 150 , 1min Solder Composition: Sn/Pb = 63/37 Solder Temperature: 230 \pm Immersion Time: 4 \pm sec

1-2.Environmental Performances

No	Item	Specification	Test Method															
1-2-1	Temperature Shock	Appearance: No damage Inductance: within $\pm 0\%$ of initial value Q change: within $\pm 0\%$ of initial value	10 cycles (Air to Air) 1 cycles shall consist of: 30 minutes exposure to -55 30 minutes exposure to 125 15 seconds maximum transition between temperatures Measured after exposure in the room condition for 24hrs															
1-2-2	Temperature Cycle		One cycle: <table border="1"> <thead> <tr> <th>Step</th> <th>Temperature ()</th> <th>Time (min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25 \pm</td> <td>30</td> </tr> <tr> <td>2</td> <td>25 \pm</td> <td>3</td> </tr> <tr> <td>3</td> <td>85 \pm</td> <td>30</td> </tr> <tr> <td>4</td> <td>25 \pm</td> <td>3</td> </tr> </tbody> </table> Total: 100cycles Measured after exposure in the room condition for 24hrs	Step	Temperature ()	Time (min)	1	-25 \pm	30	2	25 \pm	3	3	85 \pm	30	4	25 \pm	3
Step	Temperature ()	Time (min)																
1	-25 \pm	30																
2	25 \pm	3																
3	85 \pm	30																
4	25 \pm	3																
1-2-3	Humidity Resistance		Temperature: 40 \pm Relative Humidity: 90 ~ 95% Time: 1000hrs Measured after exposure in the room condition for 24hrs															
1-2-4	High Temperature Resistance		Temperature: 85 \pm Relative Humidity: 20% Applied Current: Rated Current Time: 1000hrs Measured after exposure in the room condition for 24hrs															

Reliability Test – Power Inductors

No	Item	Specification	Test Method
1-2-5	Low Temperature Resistance		Temperature: -25 ℃ Relative Humidity: 0% Time: 1000hrs Measured after exposure in the room condition for 24hrs