

# SMD Unshielded Power Inductors – SCD Series

## SCD Series

Low Cost/ Customer Design



Various high power surface mountable type inductors are superior to high saturation. These are also magnetic shielded type for consideration against radiation.

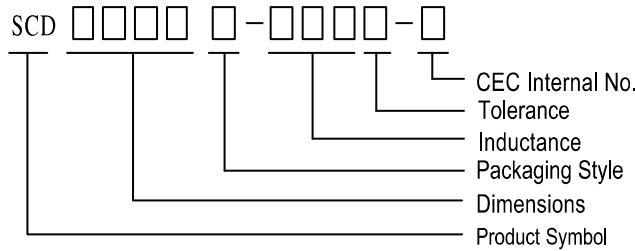
### Features

- High saturation for surface mounting
- Available in magnetically shielded.
- Suitable for large currents.
- Ideal for a variety of DC–DC converter inductor applications.
- Available on tape and reel for auto surface mounting.

### Applications

- Power supply for VTRs.
- OA equipment.
- LCD televisions.
- Notebook PCs.
- Portable communication equipment.
- DC / DC converters, etc.

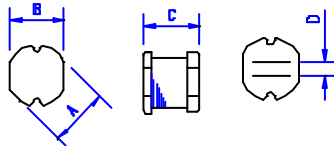
### Product Identification



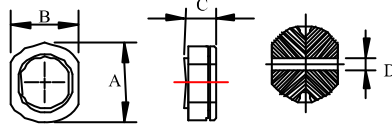
- Packaging: T : Tape and Reel
- Note: lead-free

### Shapes and Dimensions

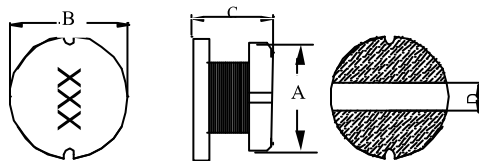
SCD 03011 ~ 1006



SCDR105B



SCD 1307

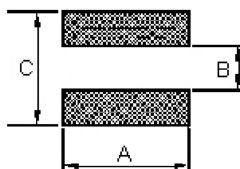


Dimensions in mm

TYPE	A	B	C	D
SCD 03011	3.5 ± 0.3	3.0 ± 0.3	1.1 ± 0.3	1.0 TYP
SCD 03015	3.3 ± 0.3	3.0 ± 0.3	1.5 ± 0.3	1.0 TYP
SCD 03021	3.3 ± 0.3	3.0 ± 0.3	2.1 ± 0.3	1.0 TYP
SCD 0403	4.5 ± 0.3	4.0 ± 0.3	3.2 ± 0.3	1.2
SCD 0501	5.8 ± 0.3	5.2 ± 0.3	2.2 <sup>+0</sup>	2.0TYP
SCD 0502	5.8 ± 0.3	5.2 ± 0.3	2.5 ± 0.3	2.0 TYP
SCD 0503	5.8 ± 0.3	5.2 ± 0.3	3 ± 0.3	2.0 TYP
SCD 0504	5.8 ± 0.3	5.2 ± 0.3	4.5 ± 0.4	1.3
SCD 0506	5.8 ± 0.3	5.2 ± 0.3	6.0 ± 0.4	1.3
SCD 0703	7.8 ± 0.3	7.0 ± 0.3	3.5 ± 0.3	2.1
SCD 0705	7.8 ± 0.3	7.0 ± 0.3	5.0 ± 0.3	2.1
SCD 0706	7.8 ± 0.3	7.0 ± 0.3	6.0 ± 0.3	2.1
SCD 1004	10.0 ± 0.3	9.0 ± 0.3	4.0 ± 0.5	2.1
SCD 1005	10.0 ± 0.4	9.0 ± 0.4	5.4 ± 0.4	2.1
SCD 1006	10.0 ± 0.4	9.0 ± 0.4	6.5 ± 0.4	2.1
SCDR 105B	10.0 ± 0.4	9.0 ± 0.4	5.0 ± 0.5	2.4
SCD 1307	13.0 ± 0.5	13.0 ± 0.5	7.0 ± 0.3	5 TYP

### Recommended Pattern

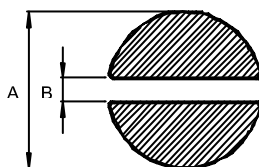
SCD 0301 / 1307



Dimensions in mm

Dim	SCD0301	SCD 1307
A	2.9	14
B	1.5	4.5
C	2.9	14

SCD 03011~SCDR105B



PAD LAYOUT

Dimensions in mm

Dim	SCD 03011	SCD 03015	SCD 03021	SCD 0403	SCD 0501	SCD 0502	SCD 0503	SCD 0504	SCD 0506	SCD 0703	SCD 0705	SCD 0706	SCD 1004	SCD 1005	SCD 1006	SCD 105B
A	4.5	4.5	4.5	5.5	6.8	6.8	6.8	6.8	6.8	8.8	8.8	8.8	11	11	11	12.5
B	1.5	1.0	1.0	1.2	2.0	2.0	2.0	1.3	1.3	2.1	2.1	2.1	2.1	2.1	2.1	2.5



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## Standard Specifications

Stamp	Inductance ( $\mu$ H)	D.C.R ( $\Omega$ ) Max															
		SCD 03011	SCD 03015	SCD 03021	SCD 0403	SCD 0501	SCD 0502	SCD 0503	SCD 0504	SCD 0506	SCD 0703	SCD 0705	SCD 0706	SCD 1004	SCD 1005	SCD 1006	SCDR 105B
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	0.18	0.10 $\pm$ 30%	0.13	0.047	0.064	0.06	0.03	0.029								
2R7	2.7			0.14	0.052	0.078	0.07	0.04				0.02					
3R3	3.3	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	0.33	0.15 $\pm$ 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	0.56		0.25	0.117	0.187	0.16	0.09				0.04				0.037	
8R2	8.2	0.62		0.28	0.132	0.225	0.17	0.10				0.05					
100	10	0.90	0.30 $\pm$ 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	1.00		0.35	0.210	0.292	0.20	0.13	0.12		0.09	0.08		0.06	0.070		0.07
150	15	1.10	0.58 $\pm$ 30%	0.40	0.235	0.360	0.22	0.15	0.14			0.10	0.09	0.08	0.07	0.080	0.07
180	18	1.24		0.48	0.338	0.430	0.25	0.22	0.15			0.11	0.10		0.08	0.090	0.08
220	22	1.40	0.71 $\pm$ 30%	0.58	0.378	0.492	0.35	0.22	0.18	0.165		0.13	0.11		0.09	0.100	0.08
270	27	2.18		0.65	0.522	0.603	0.45	0.26	0.20			0.15	0.12		0.10	0.110	0.10
330	33	2.54	1.10 $\pm$ 30%	0.80	0.540	0.796	0.56	0.33	0.23			0.17	0.13	0.14	0.12	0.120	0.11
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
470	47	3.10	1.30 $\pm$ 30%	1.19	0.844	1.020	0.72	0.50	0.37			0.25	0.18		0.17	0.170	0.14
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
680	68	5.80	2.20 $\pm$ 30%	1.73	1.117	1.220	0.90	0.65	0.46			0.33	0.28		0.22	0.220	0.21
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		0.30	0.25	0.28
101	100		3.50 $\pm$ 30%	2.52	2.000	1.800	1.30	0.90	0.70			0.48	0.43		0.34	0.35	0.34
121	120			2.90		2.000	1.38	1.00	0.93			0.54	0.47		0.40	0.40	0.37
151	150			3.36		2.80	1.81	1.30	1.10			0.75	0.64		0.54	0.47	0.51
181	180			5.10		3.15	1.95	1.50	1.38			1.02	0.71		0.62	0.63	0.57
221	220			5.80		4.40	3.00	2.00	1.57			1.20	0.96		0.72	0.73	0.78
271	270			7.80		6.40	3.20	2.50	1.85			1.31	1.11		0.95	0.97	0.87
301	300			8.10		6.75											
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
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
561	560			19.49		13.0	8.50	4.50	4.19						1.90	1.90	
681	680			22.00		17.0	10.0	6.50	4.44							2.25	
821	820			23.98		19.5	12.0	7.50	5.12							2.55	
102	1000			28.80		24.0	18.0	8.00	10.00								
122	1200		38 $\pm$ 30%														
152	1500		55 $\pm$ 30%														
602	6000															14	
822	8200															50	

Test Freq.(L): SCD03011: (100KHz/1V) SCD03015: (1MHz/1V)  
 SCD03021/0403/0501/0502/ 0503: 1.0 ~ 8.2 $\mu$ H(7.96MHz/1V), 10 ~ 82 $\mu$ H (2.52MHz/1V), 100 ~ 1000 $\mu$ H (1KHz/1V).  
 SCD0504/0506/0703/0705/0706/1004: 1.0 ~ 8.2 $\mu$ H(7.96MHz/1V), 10 ~ 82 $\mu$ H (2.52MHz/1V), 100 ~ 1000 $\mu$ H (1KHz/1V).  
 SCD1005/1006: 1.0 ~ 8.2 $\mu$ H(7.96MHz/1V), 10 ~ 82 $\mu$ H (2.52MHz/1V), 100 ~ 1000 $\mu$ H (1KHz/1V).  
 SCDR105B: 10~88 $\mu$ H(2.52MHz/1V); 100~470uH (KHz/ 0.25V)

Test Instrument: L: HP 4192A; DCR: CH502BC; Rated D.C. Current: HP4284+42841A or CH1061+CH301A



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## Standard Specifications

Stamp	Inductance ( $\mu$ H)	IDC (A) Max															
		SCD 03011	SCD0 3015	SCD 03021	SCD 0403	SCD 0501	SCD 0502	SCD 0503	SCD 0504	SCD 0506	SCD 0703	SCD 0705	SCD 0706	SCD 1004	SCD 1005	SCD 1006	SCD 105B
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	1.26	0.79	1.390	2.60	2.65	2.94	3.50	3.55								
2R7	2.7			1.320	2.43	2.20	2.50	3.20				3.70					
3R3	3.3	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	0.90	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	0.68		0.850	1.41	1.50	1.70	2.20				3.10			4.33		
8R2	8.2	0.63		0.820	1.26	1.30	1.40	2.00				2.70					
100	10	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	0.52		0.640	1.05	1.05	1.18	1.75	1.40		1.39	2.00		2.13	2.45		1.94
150	15	0.50	0.30	0.600	0.92	1.00	1.15	1.70	1.30		1.24	1.80	2.8	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	0.36	0.25	0.500	0.76	0.90	1.00	1.50	1.11	1.6	1.07	1.50		1.60	1.95		1.42
270	27	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	2.3	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

- SCD03011 1.0 ~ 82 $\mu$ H  $\pm$  20%
- SCD03015 2.2 ~ 1500 $\mu$ H  $\pm$  20%
- SCD03021 1.0 ~ 1000 $\mu$ H  $\pm$  20%
- SCD0403 1.0 ~ 27 $\mu$ H  $\pm$  20% 33 ~ 100 $\mu$ H  $\pm$  10%
- SCD0501 1.0 ~ 27 $\mu$ H  $\pm$  20% 33 ~ 1000 $\mu$ H  $\pm$  10%
- SCD0502 1.0 ~ 27 $\mu$ H  $\pm$  20% 33 ~ 1000 $\mu$ H  $\pm$  10%
- SCD0503 1.0 ~ 27 $\mu$ H  $\pm$  20% 33 ~ 1000 $\mu$ H  $\pm$  10%
- SCD0504 1.0~27 $\mu$ H $\pm$ 20% 33~47 $\mu$ H 56~1000 $\mu$ H $\pm$ 10%
- SCD0506 22 $\mu$ H  $\pm$  20%
- SCD0703 10 ~ 27 $\mu$ H  $\pm$  20% 33 ~ 330 $\mu$ H  $\pm$  10%
- SCD0705 1.4 ~ 27 $\mu$ H  $\pm$  20% 33 ~ 470 $\mu$ H  $\pm$  10%
- SCD0706 15 $\mu$ H  $\pm$  20% 33 $\mu$ H  $\pm$  10%
- SCD1004 10 ~ 27 $\mu$ H  $\pm$  20% 33 ~ 560 $\mu$ H  $\pm$  10%
- SCD1005 4.7 ~ 27 $\mu$ H  $\pm$  20% 33 ~ 820 $\mu$ H  $\pm$  10%
- SCD1005 4.7 ~ 27 $\mu$ H  $\pm$  20% 33 ~ 820 $\mu$ H  $\pm$  10%
- SCD1006 6000 $\mu$ H ~ 8200 $\mu$ H  $\pm$  20%
- SCDR105B 10 ~ 27 $\mu$ H  $\pm$  20% 33~82 $\mu$ H  $\pm$  15% 100~4700 $\mu$ H  $\pm$  10%

Tolerance: K =  $\pm$ 10% , M =  $\pm$ 20%

※ 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

## Electrical Characteristics

Part Number	Inductance ( $\mu$ H)	Tolerance ( $\pm$ %)	Q Ref	Q Frequency (MHz)	Self Resonant Frequency (MHz) Typ	DC Resistance (m $\Omega$ ) Typ	I <sub>rms</sub> (A) Max	I <sub>sat</sub> (A) Typ
SCD1307T-1R5□-N	1.5	20	20	7.96 / 0.1V	65	5.0	9.50	20.0
SCD1307T-2R2□-N	2.2	20	22	7.96 / 0.1V	50	6.0	9.00	18.0
SCD1307T-2R7□-N	2.7	20	24	7.96 / 0.1V	40	8.0	8.20	16.0
SCD1307T-3R3□-N	3.3	20	26	7.96 / 0.1V	38	8.7	7.50	15.0
SCD1307T-4R7□-N	4.7	20	25	7.96 / 0.1V	36	10	7.00	13.0
SCD1307T-5R6□-N	5.6	20	24	7.96 / 0.1V	28	15	6.50	11.0
SCD1307T-6R8□-N	6.8	20	24	7.96 / 0.1V	26	17	6.00	10.5
SCD1307T-8R2□-N	8.2	20	24	7.96 / 0.1V	24	19	5.80	9.8
SCD1307T-100□-N	10	20	22	2.52 / 0.1V	22	21	5.60	9.2
SCD1307T-120□-N	12	20	25	2.52 / 0.1V	20	30	4.80	8.0
SCD1307T-150□-N	15	20	28	2.52 / 0.1V	17	34	4.50	7.5
SCD1307T-180□-N	18	20	28	2.52 / 0.1V	16	36	4.20	7.0
SCD1307T-220□-N	22	20	40	2.52 / 0.1V	15	47	3.60	6.5
SCD1307T-270□-N	27	20	35	2.52 / 0.1V	11	60	3.30	5.5
SCD1307T-330□-N	33	20 / 10	35	2.52 / 0.1V	10	65	3.10	5.0
SCD1307T-390□-N	39	20 / 10	28	2.52 / 0.1V	9.0	75	2.90	4.6
SCD1307T-470□-N	47	20 / 10	24	2.52 / 0.1V	7.5	82	2.70	4.2
SCD1307T-560□-N	56	20 / 10	22	2.52 / 0.1V	7.2	95	2.50	3.8
SCD1307T-680□-N	68	20 / 10	24	2.52 / 0.1V	7.0	120	2.30	3.5
SCD1307T-820□-N	82	20 / 10	18	2.52 / 0.1V	6.0	140	2.10	3.2
SCD1307T-101□-N	100	20 / 10	25	0.796 / 0.1V	5.8	180	1.90	3.0
SCD1307T-121□-N	120	20 / 10	20	0.796 / 0.1V	5.5	210	1.80	2.8
SCD1307T-151□-N	150	20 / 10	20	0.796 / 0.1V	4.5	250	1.60	2.6
SCD1307T-181□-N	180	20 / 10	18	0.796 / 0.1V	4.0	280	1.50	2.3
SCD1307T-221□-N	220	20 / 10	15	0.796 / 0.1V	3.8	360	1.30	2.1
SCD1307T-271□-N	270	20 / 10	15	0.796 / 0.1V	3.5	410	1.20	1.8
SCD1307T-331□-N	330	20 / 10	15	0.796 / 0.1V	3.2	520	1.10	1.6
SCD1307T-391□-N	390	20 / 10	12	0.796 / 0.1V	2.5	600	1.00	1.5
SCD1307T-471□-N	470	20 / 10	12	0.796 / 0.1V	2.2	720	0.90	1.4
SCD1307T-561□-N	560	20 / 10	10	0.796 / 0.1V	2.0	880	0.85	1.3
SCD1307T-681□-N	680	20 / 10	10	0.796 / 0.1V	1.6	1000	0.80	1.2
SCD1307T-821□-N	820	20 / 10	10	0.796 / 0.1V	1.5	1300	0.75	1.1
SCD1307T-102□-N	1000	20 / 10	10	0.252 / 0.1V	1.4	1600	0.65	1.0

- Inductance tested at 0.1 V<sub>rms</sub>, 100KHz.
- Tolerance: K =  $\pm$ 10% , M =  $\pm$ 20%
- Inductance drop = 10%. Typ at I<sub>sat</sub>
- $\Delta$ T = 40°C rise typ at I<sub>rms</sub>.
- Test Instrument: L / Q :HP 4192A  
SRF: HP4286A  
RDC: CH502BC  
Isat: HP4284+42841A

