

# SCDS Series

SMT Power Inductors

## CONFIGURATION AND DIMENSIONS

Dimensions : mm

TYPE	SHAPES AND DIMENSION		
SCDS62T (3.3μH ~ 330μH)			
SCDS64T (10μH ~ 1000μH)			
SCDS73 (10μH ~ 1.0mH)			
SCDS74 (10μH ~ 1.0mH)			
SCDS104R (1.5μH ~ 330μH)			
SCDS125 (10μH ~ 1.0mH)			
SCDS127 (10μH ~ 47mH)			

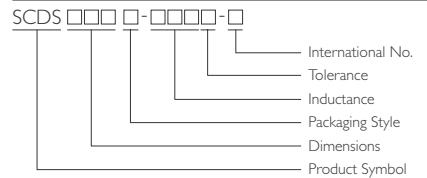


## OUTLINE

SMT power inductors are formed by directly connected ferrite electrode with magnetic shielding.

- T : Packing : Tape and Reel
- HP : Low DCR
- LD : High Power
- Tolerance : K=±10% ; M=±20% ; T=±30%
- CEC Internal No. B: Silver plated terminals (3D12~6D38); S: Base type terminals (2D11~2D18HP & 62T&127)
- Note : YAGEO will start to release SCD Series inductor with lead-free terminals that meet SONY SS-00259's criterion for lead-free product in Q2 of 2004, and YAGEO Internal No will changed to "N" as identification.

## PRODUCT IDENTIFICATION



## Features

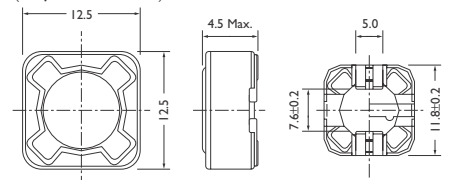
- Available in magnetically shielded.
- Low DC resistance.
- Suitable for large currents.
- Ideal for a variety of DC - DC converter inductor applications.
- Available on tape and reel for auto surface mounting.

## Applications

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

## SCDS124

(3.9μH ~ 330mH)





## STANDARD SPECIFICATIONS

Stamp	Inductance (μH)	D.C.R.(mΩ)Max.								Rated Current(A)Max.							
		SCDS 62T	SCDS 64T	SCDS 73	SCDS 74	SCDS 104R	SCDS 124	SCDS 125	SCDS 127	SCDS 62	SCDS 64	SCDS 73	SCDS 74	SCDS 104R	SCDS 124	SCDS 125	SCDS 127
1R0	1.0																
1R2	1.2								7.0								
1R5	1.5					8.1								10.0			
1R8	1.8																9.80
2R2	2.2																
2R4	2.4								11.5								
2R5	2.5					10								7.5			
2R7	2.7																
3R0	3.0																
3R3	3.3	68								1.94							
3R5	3.5								13.5								
3R8	3.8					13								6.0			
3R9	3.9						15								6.50		
4R1	4.1																
4R2	4.2																
4R7	4.7	80						18		15.8	1.63					5.70	
5R0	5.0																
5R2	5.2					22								5.5			
5R3	5.3																
5R4	5.4																
5R5	5.5	96									1.40						
5R6	5.6																
6R0	6.0																
6R1	6.1								17.6								
6R2	6.2																6.60
6R8	6.8	100						23			1.33				4.8	4.90	
7R0	7.0					27											
7R3	7.3																
7R4	7.4																
7R6	7.6								20.0								5.90
8R2	8.2	100								1.14							
8R6	8.6																
8R7	8.7																
8R9	8.9																
100	10	150	120	72	49	35	28	25	21.6	1.10	1.35	1.68	1.84	4.4	4.50	4.00	5.40
120	12	200	130	98	58		38	27	24.3	1.00	1.22	1.52	1.71		4.00	3.50	4.90
150	15	230	180	130	81	50	50	30	27.0	0.90	1.11	1.33	1.47	3.6	3.20	3.30	4.50
180	18	270	240	140	91		57	34	39.2	0.80	1.02	1.20	1.31		3.10	3.00	3.90
220	22	340	270	190	110	73	66	36	43.2	0.74	0.91	1.07	1.23	2.9	2.90	2.80	3.60
270	27	380	300	210	150		80	51	45.9	0.66	0.82	0.96	1.12		2.80	2.30	3.40
330	33	450	330	240	170	93	97	57	64.8	0.59	0.74	0.91	0.96	2.3	2.70	2.10	3.00
390	39	490	370	320	230		132	68	72.9	0.54	0.69	0.77	0.91		2.10	2.00	2.75
470	47	690	520	360	260	128	150	75	100	0.50	0.62	0.76	0.88	2.1	1.90	1.80	2.50
560	56	780	560	470	350		190	110	110	0.46	0.58	0.68	0.75		1.80	1.70	2.35
680	68	1070	630	520	380	213	220	120	140	0.42	0.51	0.61	0.69	1.5	1.50	1.50	2.10
820	82	1210	710	690	430		260	140	160	0.38	0.46	0.57	0.61		1.30	1.40	1.95
101	100	1390	1030	790	610	304	308	160	220	0.34	0.42	0.50	0.60	1.35	1.20	1.30	1.70
121	120	1900	1150	890	660		380	170	250	0.31	0.38	0.49	0.52		1.10	1.10	1.60
151	150	2180	1680	1270	880	506	530	230	280	0.28	0.35	0.43	0.46	1.15	0.95	1.00	1.42
181	180	2770	1870	1450	980		620	290	350	0.26	0.32	0.39	0.42		0.85	0.90	1.30
221	220	3120	2080	1650	1170	756	700	400	390	0.23	0.29	0.35	0.36	0.92	0.80	0.80	1.16
271	270	4380	2370	2310	1640		876	460	560	0.22	0.26	0.32	0.34		0.60	0.75	1.06
331	330	4940	2670	2620	1860	1.09	990	510	640	0.19	0.23	0.28	0.32	0.70	0.50	0.68	0.95
391	390		2940	2940	2850			690	700		0.22	0.26	0.29			0.65	0.88
471	470		3930	4180	3010			770	980		0.20	0.24	0.26			0.58	0.79

• Test Freq.(L): SCDS62: 3.3 ~ 8.2μH(7.96MHz/1V), 10~82μH(2.52MHz/1V), 100 ~ 330μH(1KHz/1V)  
SCDS64/73/74/125/127: (1KHz/1V)

• Other type Rated current : The rate current indicastes the current when the inductance decreases to 65%. Over of it's nominal value or D.C.current when the temperature rising Δt =40°C lower, whichever is lower.

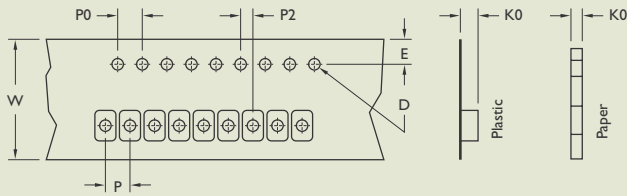
• Test Instrument :L : HP4192A LF IMPEDANCE ANALYZER  
RDC : CHEN HWA 502BC  
Rated current: HP4284+42841A or Ch1061+CH301A

### Tolerance Of Inductors

- SCDS62 3.3~330μH ± 20%(M)
- SCDS64 10~1000μH ± 20%(M)
- SCDS73 10~1000μH ± 20%(M)
- SCDS74 10~1000μH ± 20%(M)
- SCDS104R 1.5~330μH ± 30%(T)
- SCDS124 3.9~330μH ± 20%(M)
- SCDS125 1.0~1000μH ± 20%(M)
- SCDS127 1.2~7.6μH<sup>+40, -20%</sup>(N)



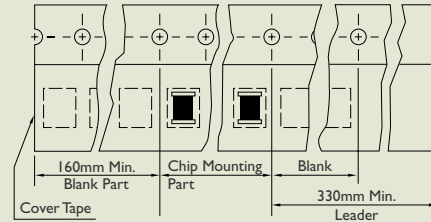
## TAPE DIMENSIONS



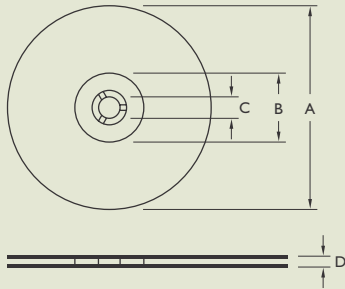
## TAPE MATERIAL

Carrier Tape : Polystyrene

Cover Type : Polyethylene

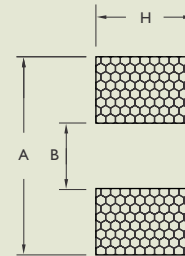


## REEL DIMENSIONS



## RECOMMENDED PATTERN

Land Pattern



Dimensions : mm

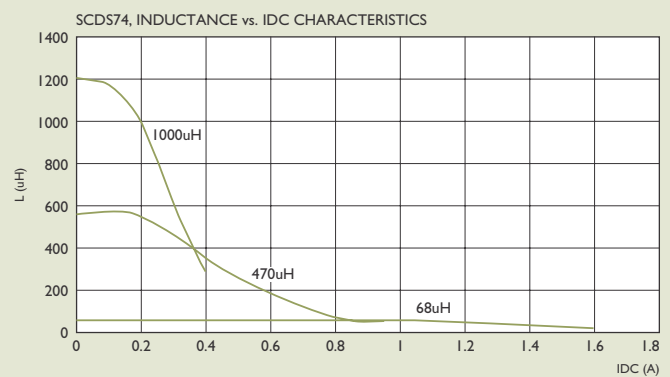
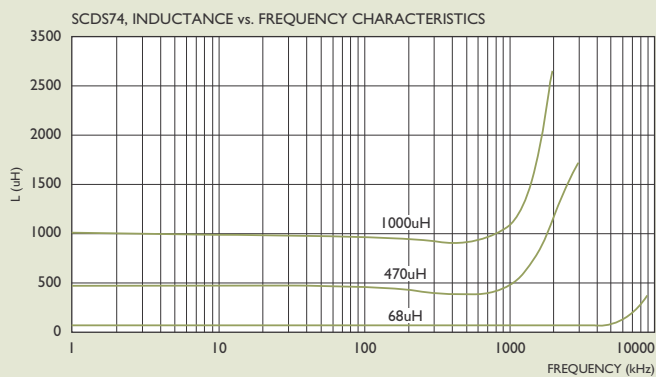
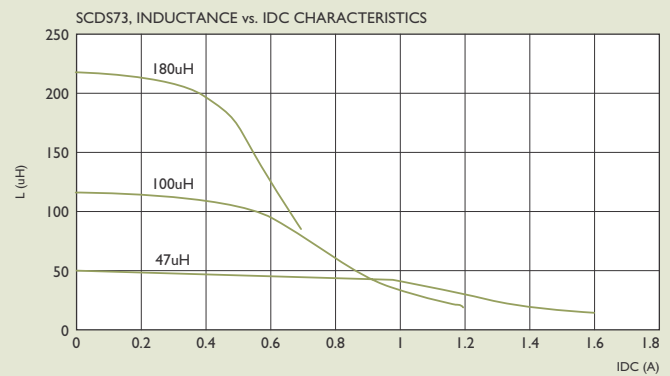
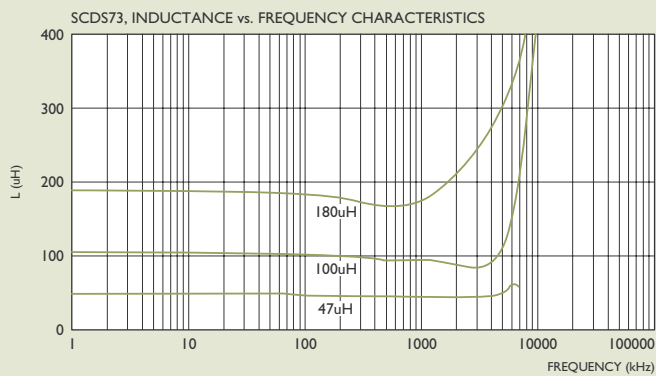
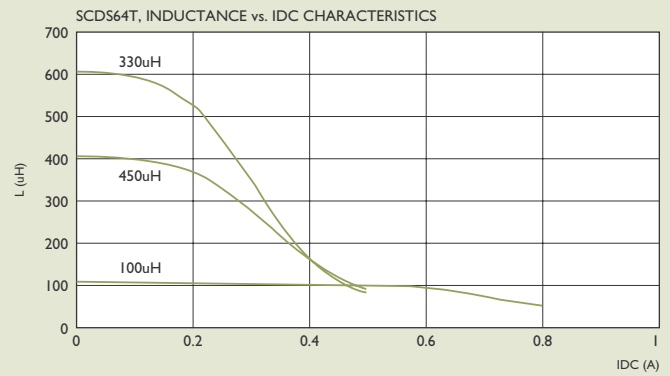
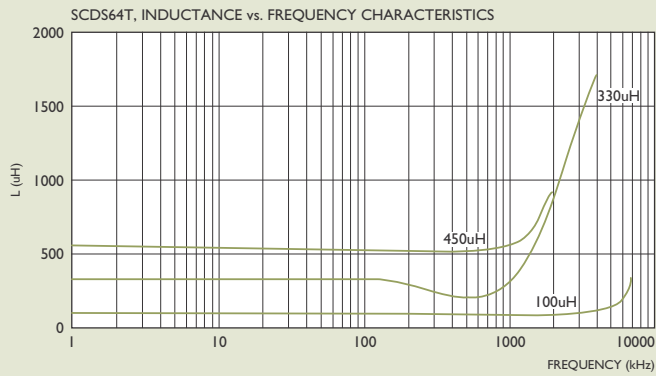
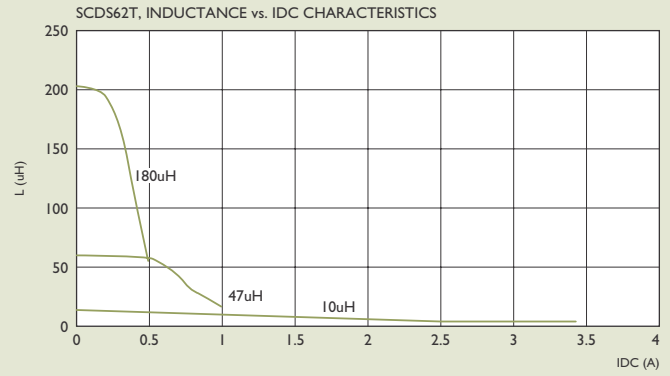
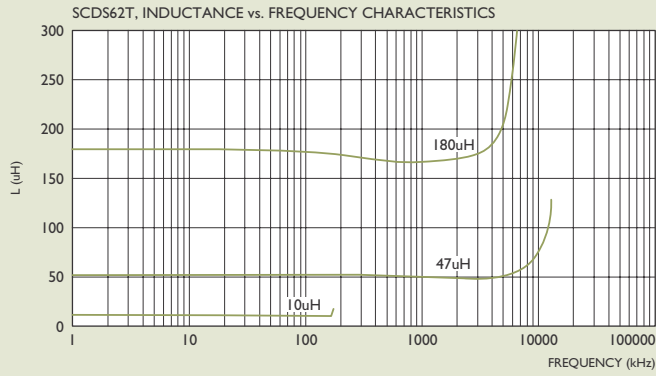
TYPE	TAPE DIMENSIONS							RECOMMENDED PATTERN			REEL DIMENSIONS				QUANTITY
	K0	D	E	W	P	P0	P2	A	B	C	A	B	C	D	PCS/REEL
SCDS62T	3.4	1.55	1.75	16	12	4	2	8.1	4	2.5	330	100	13	17.4	1500
SCDS64T	4.9	1.55	1.75	16	12	4	2	8.1	4	2.5	330	100	13	17.4	1000
SCDS73T	3.6	1.55	1.75	16	12	4	2	8.4	4.4	2.2	330	100	13	17.4	1600
SCDS74T	5.0	1.55	1.75	16	12	4	2	8.4	4.4	2.2	330	100	13	17.4	1000
SCDS124T	5.1	1.55	1.75	24	16	4	2	13	7	5.4	330	100	13	24.4	500
SCDS125T	6.7	1.55	1.75	24	16	4	2	13	7	5.4	330	100	13	24.4	600
SCDS127T	8.7	1.55	1.75	24	16	4	2	13	7	5.4	330	100	13	24.4	500



## TYPICAL ELECTRICAL CHARACTERISTICS

Curves of SCD Series

Test Instruments : HP4291A Impedance / Material Analyzer



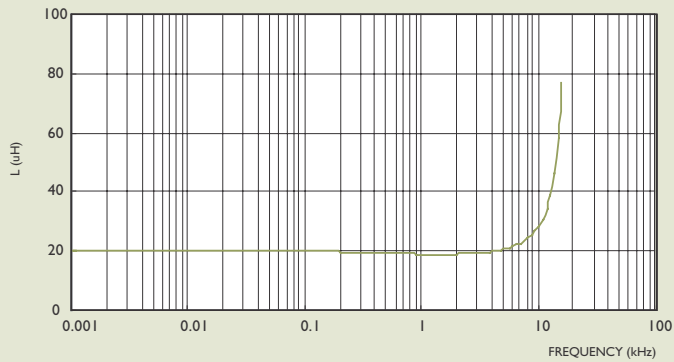


# TYPICAL ELECTRICAL CHARACTERISTICS

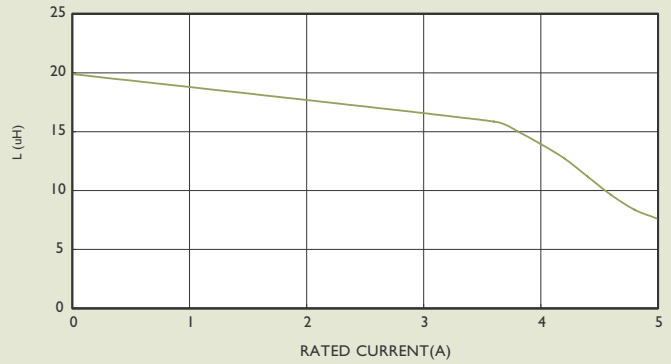
TCurves of SCD Series

Test Instruments : HP4291A Impedance / Material Analyzer

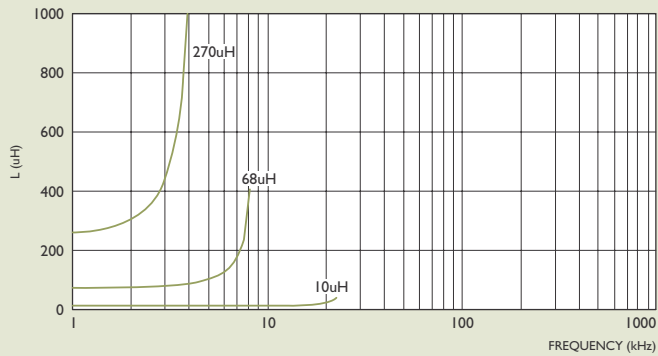
SCDS104R-220MS, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



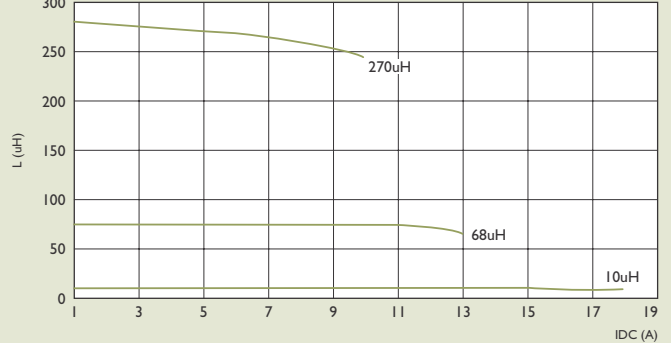
SCDS104R-220M-S



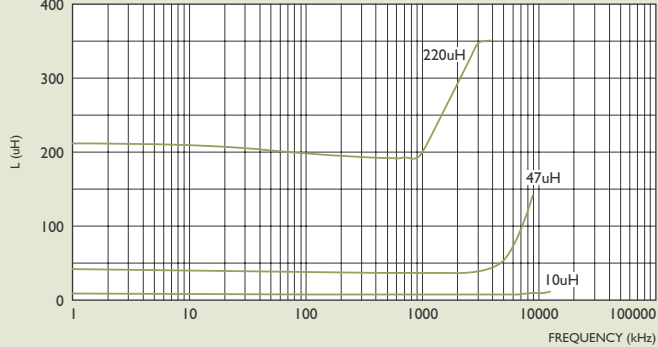
SCDS124, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



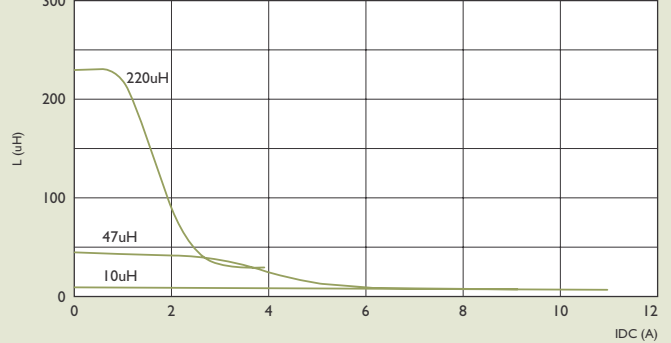
SCDS124, INDUCTANCE vs. IDC CHARACTERISTICS



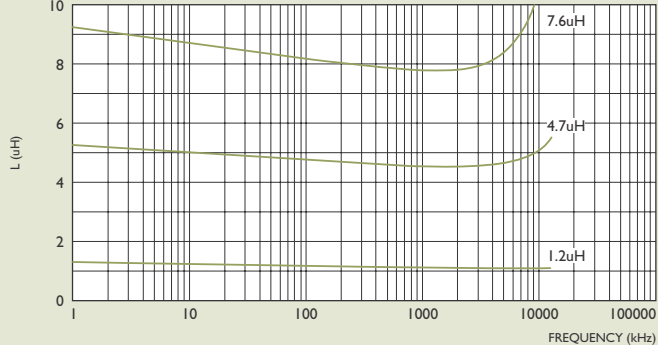
SCDS125, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



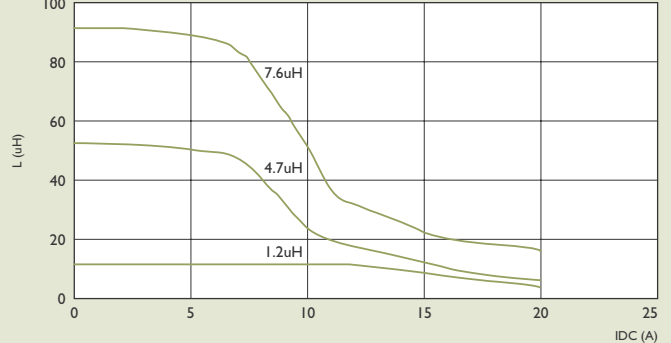
SCDS125, INDUCTANCE vs. IDC CHARACTERISTICS



SCDS127, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



SCDS127, INDUCTANCE vs. IDC CHARACTERISTICS





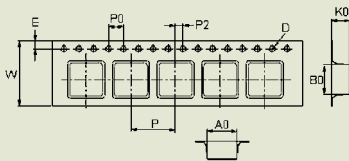
## TYPICAL ELECTRICAL CHARACTERISTICS

Test Instruments : HP4291A Impedance / Material Analyzer

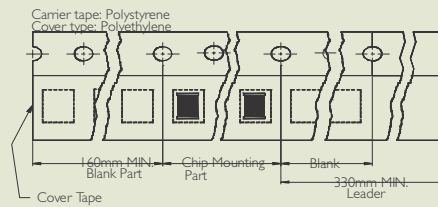
## Packaging Specifications

SCDS 2D11 ~ 6D38

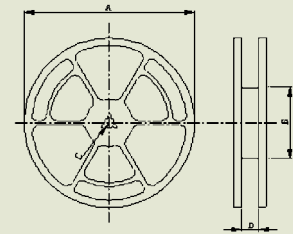
### Tape Dimensions



### Tape Material



### Reel Dimensions



### Dimensions in mm

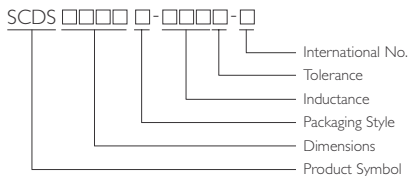
TYPE	Tape Dimensions									Reel Dimensions				Quantity PCS / REEL	Recommended Pattern	
	A0	B0	K0	D	E	W	P	P0	P2	A	B	C	D		A	B
SCDS2D11	3.3	3.3	1.3	1.5	1.75	12	8	4	2	178	60	13	13.2	1500	1.3	1.7
SCDS2D14	3.3	3.3	1.6	1.5	1.75	12	8	4	2	178	60	13	13.2	1000	1.3	1.7
SCDS2D18LD	3.3	3.3	1.9	1.5	1.75	12	8	4	2	178	60	13	13.2	1000	1.3	1.7
SCDS2D18HP	3.3	3.3	1.9	1.5	1.75	12	8	4	2	178	60	13	13.2	1000	1.3	1.7
SCDS3D12	4.2	4.2	1.25	1.5	1.75	12	8	4	2	330	100	13	13.4	5000	4.6	1.6
SCDS3D16	4.3	4.3	2.1	1.5	1.75	12	8	4	2	178	60	13	13.2	1000	1.4	2.4
SCDS4D18	5.3	5.3	2.4	1.5	1.75	12	8	4	2	330	100	13	13.4	2000	1.9	1.5
SCDS4D28	5.3	5.3	3.4	1.5	1.75	12	8	4	2	330	100	13	13.4	2000	1.9	1.5
SCDS5D18	6.2	6.2	2.2	1.5	1.75	12	8	4	2	330	100	13	13.4	2000	2.15	2.0
SCDS5D28	6.2	6.2	3.2	1.5	1.75	12	8	4	2	330	100	13	13.4	2000	2.15	2.0
SCDS6D28	7.2	7.2	3.2	1.5	1.75	16	12	4	2	330	100	13	17.4	1500	2.65	2.0
SCDS6D38	7.1	7.1	4.1	1.5	1.75	16	12	4	2	330	100	13	17.4	1000	2.65	2.0

# Shielded SMD Power Inductors

# SCDS Series



## PRODUCT IDENTIFICATION

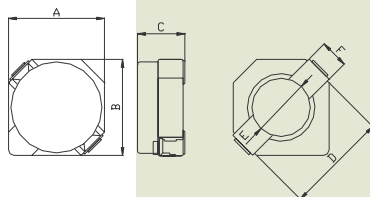
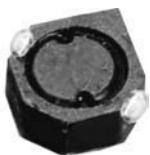


- T : Packing : Tape and Reel
- HP : Low DCR
- LD : High Power
- Tolerance : K=±10% M=±20% T=±30%
- CEC Internal No.: B: Silver plated terminals (3D12~6D38); S: Base type terminals (2D11~2D18HP & 62T&127)
- Note : YAGEO will start to release SCD Series inductor with lead-free terminals that meet SONY SS-00259's criterial for lead-free product in Q2 of 2004, and YAGEO Internal No will changed to "N" as identification.

## SHAPES AND DIMENSIONS

SCDS2D11/2D14/2D18LD/2D18HP

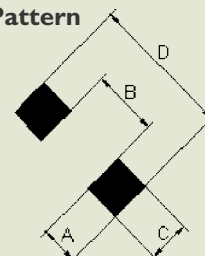
### Shapes and Dimensions



Dimensions in mm

TYPE	A	B	C	D	E	F
SCDS2D11	3.2 <sup>+0</sup>	3.2 <sup>+0</sup>	1.2 <sup>+0</sup>	3.3	2.1	1.0
SCDS2D14	3.2 <sup>+0</sup>	3.2 <sup>+0</sup>	1.55 <sup>+0</sup>	3.3	2.1	1.0
SCDS2D18LD	3.2 <sup>+0</sup>	3.2 <sup>+0</sup>	2.0 <sup>+0</sup>	3.3	2.1	1.0
SCDS2D18HP	3.2 <sup>+0</sup>	3.2 <sup>+0</sup>	2.0 <sup>+0</sup>	3.3	2.1	1.0

### Recommended Pattern



Dimensions in mm

TYPE	A	B	C	D
SCDS 2D11	1.3	1.7	1.3	4.3
SCDS 2D14	1.3	1.7	1.3	4.3
SCDS 2D18LD	1.3	1.7	1.3	4.3
SCDS 2D18HP	1.3	1.7	1.3	4.3

## APPLICATIONS

- Power Supply for VTRs
- OA Equipment
- LCD Televisions
- Notebook PCs
- Portable Communication Equipment
- DC / DC Converters, etc.

## FEATURES

- Available in Magnetically Shielded
- Low DC Resistance
- Suitable for Large Currents
- Ideal for a Variety of DC – DC Converter Inductor Applications
- Available on Tape and Reel for Auto Surface Mounting

Dimensions : mm

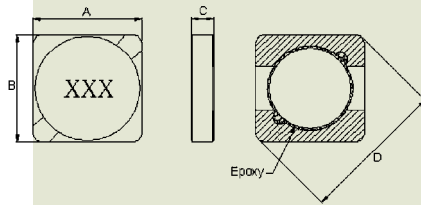


# SHAPES AND DIMENSIONS

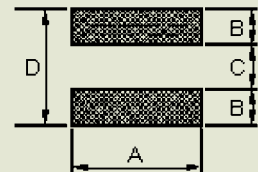
Dimensions : mm

## SCDS 3D12

### Shapes and Dimensions



### Recommended Pattern



Dimensions in mm

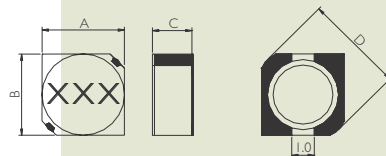
TYPE	A	B	C	D
SCDS3D12	3.9 ± 0.2	3.9 ± 0.2	1.2 Max	6.2 Max

Dimensions in mm

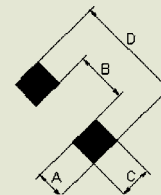
TYPE	A	B	C	D
SCDS3D12	4.6	1.6	1.4	4.6

## SCDS 3D16

### Shapes and Dimensions



### Recommended Pattern



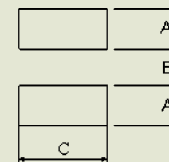
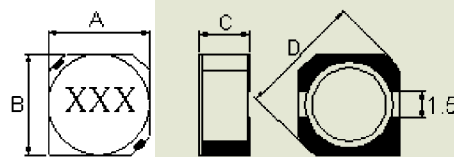
Dimensions in mm

TAPE	A	B	C	D
SCDS3D16	4 Max.	4 Max.	1.8 Max.	5.2 Max.

Dimensions in mm Recommended Pattern

TYPE	A	B	C	D
SCDS3D16	1.4	2.4	1.5	5.2

## SCDS 4D18~6D38

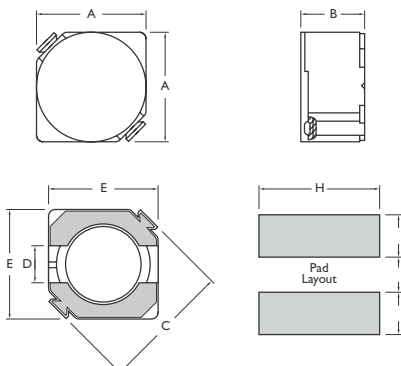


Dimensions in mm

TAPE	A	B	C	D
SCDS4D18	4.7 ± 0.3	4.7 ± 0.3	2.0 Max	6.9 Max
SCDS4D28	4.7 ± 0.3	4.7 ± 0.3	3.0 Max	6.9 Max

Dimensions in mm

TYPE	A	B	C
SCDS 4D18	1.9	1.5	5.3
SCDS 4D28	1.9	1.5	5.3



ITEM	A	B	C	D	E	H	I	J
5D18	5.7 ± 0.3	3.0 Max.	8.2 Max.	1.5	5.7±0.3	6.3	2.15	2.0
5D28	5.7 ± 0.3	3.0 Max.	8.2 Max.	1.5	5.7±0.3	6.3	2.15	2.0
6D28	6.7 ± 0.3	3.0 Max.	9.5 Max.	1.5	6.7±0.3	7.3	2.65	2.0
6D38	7.0 ± 0.0	4.0 Max.	9.5 Max.	1.5	7.0±0.0	7.3	2.65	2.0



# ELECTRICAL CHARACTERISTICS

## Standard Specifications

Stamp	Inductance (μH)	D.C.R.(mΩ)Max.													Rated Current(A)Max.										
		SCDS 2D11	SCDS 2D14	SCDS 2D18LD	SCDS 2D18HP	SCDS 3D12	SCDS 3D16	SCDS 4D18	SCDS 4D28	SCDS 5D18	SCDS 5D28	SCDS 6D28	SCDS 6D38	SCDS 2D11	SCDS 2D14	SCDS 2D18LD	SCDS 2D18HP	SCDS 3D12	SCDS 3D16	SCDS 4D18	SCDS 4D28	SCDS 5D18	SCDS 5D28	SCDS 6D28	SCDS 6D38
1R0	1.0				under	40.1±30%		45									1.54		1.72						
1R2	1.2								23.6											2.56					
1R5	1.5	68	63			63.5±30%	52						0.90	1.80			1.32	1.55			2.20				
1R8	1.8		75						27.5					1.65						2.20					
2R2	2.2	98	94	41	development	83.5±30%	72	75	31.3				0.78	1.50	0.85		1.12	1.20	1.32	2.04					
2R4	2.4																								
2R5	2.5									18												2.60			
2R7	2.7		106					105	43.3			24	24			1.35						2.40	3.00		
3R0	3.0																								
3R3	3.3	123	125	54		122±30%	85	110	49.2				20	0.60	1.20	0.75	0.90	1.10	1.04	1.57				3.50	
3R5	3.5																								
3R8	3.8																								
3R9	3.9		138					155	64.8				27			1.10			0.88	1.44		1.95	2.60		
4R1	4.1									57												2.20			
4R2	4.2									31															
4R7	4.7	170	169	78		172±30%	105	162	72.0				31	24	0.50	1.00	0.63	0.72	0.90	0.84	1.32		2.40	2.90	
5R0	5.0																								
5R2	5.2																								
5R3	5.3									38												1.90			
5R4	5.4									76												1.40			
5R5	5.5																								
5R6	5.6		188			191±30%		170	100.9							0.95		0.66		0.80	1.17			2.25	
6R0	6.0												35											2.50	
6R1	6.1																								
6R2	6.2									96	45			27								1.80		2.50	
6R8	6.8	260	213	106		218±30%	170	200	108.9						0.44	0.85	0.52	0.60	0.73	0.76	1.12				
7R0	7.0																								
7R3	7.3												54										2.10		
7R4	7.4													31								1.25		2.30	
7R6	7.6																					1.20			
8R2	8.2		281			255±30%		245	117.5		53					0.80		0.57		0.68	1.04	1.10	1.60		
8R6	8.6																					0.97		1.85	
8R7	8.7																					0.85		2.20	
8R9	8.9									116												0.80			
100	10	400	294	180		408±30%	210	280	128.3	124	65	65	38	0.35	0.70	0.43	0.49	0.55	0.61	1.00	0.75	1.30	1.70	2.00	
120	12		394			462±30%		320	131.6	153	76	70	53		0.62		0.47		0.56	0.84	0.65	1.20	1.55	1.70	
150	15			220		502±30%	295	360	149.0	196	103	84	57			0.35	0.41	0.45	0.50	0.76	0.57	1.10	1.40	1.60	
180	18					573±30%	400	166.0	210	110	95	92					0.37	0.48	0.75	0.54	1.00	1.32	1.50		
220	22			320		801±30%	430	480	235.0	290	122	128	96				0.34	0.40	0.41	0.70	0.50	0.90	1.20	1.30	
270	27					1207±30%		570	261.0	330	175	142	109				0.30	0.35	0.58	0.43	0.85	1.05	1.20		
330	33			460		1358±30%	675	694	331.3	386	189	165	124			0.24	0.28	0.32	0.56	0.41	0.75	0.97	1.10		
390	39					1911±30%		800	383.7	520	212	210	138				0.23	0.30	0.50	0.36	0.70	0.86	1.00		
470	47			660				950	587.0	595	250	238	150					0.28	0.48		0.62	0.80	0.95		
560	56							1080	624.5	665	305	277	202					0.26	0.41		0.58	0.73	0.85		
680	68							1300	699.0	840	355	304	234					0.24	0.35		0.52	0.65	0.75		
820	82									914.8	978	463	390	324						0.32		0.46	0.60	0.70	
101	100									1020	1200	520	535	358						0.29		0.42	0.54	0.65	
121	120																								
151	150																								
181	180																								
221	220																								
271	270																								
331	330																								
391	390																								
471	470																								

- Test Freq.(L): SCDS3D12/3D16:(100KHz/0.1V)  
SCDS4D18: 1.0 ~ 8.2μH(7.96MHz/1V), 10 ~ 39μH(100KHz/1V)  
SCDS2D11/2D14/2D18LD/4D28/104R/124: (100KHz/1V)  
SCDS5D18/5D28/6D28: (10KHz/1V)  
SCDS6D38: (10KHz/0.1V)  
SCDS62: 3.3 ~ 8.2μH(7.96MHz/1V), 10~82μH(2.52MHz/1V), 100 ~ 330μH(1KHz/1V)
- SCDS3D12 Rated current : It makes rated current either when the value with 30% declining inductance or the generation of heat becomes 30% near value by the rising one above another of the direct current.
- Other type Rated current : The rate current indicates the current when the inductance decreases to 65%. Over of it's nominal value or D.C.current when the temperature rising Δt =40°C lower, whichever is lower.
- Test Instrument :L : HP4192A LF IMPEDANCE ANALYZER  
RDC : CHEN HWA 502BC  
Rated current: HP4284+42841A or Ch1061+CH301A

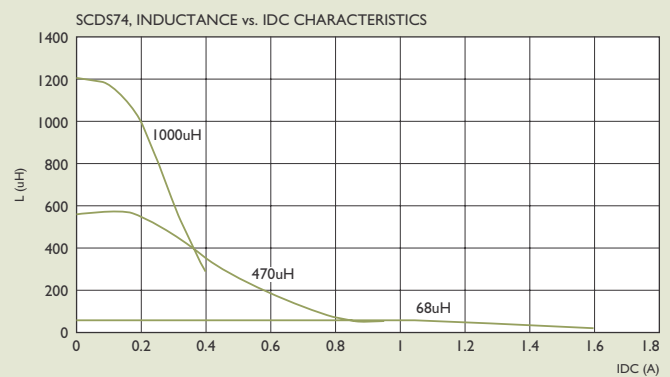
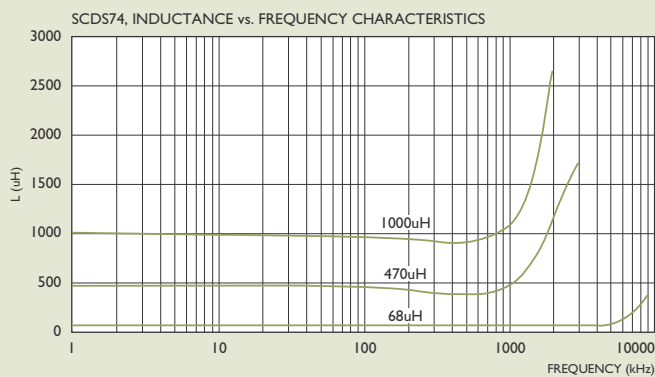
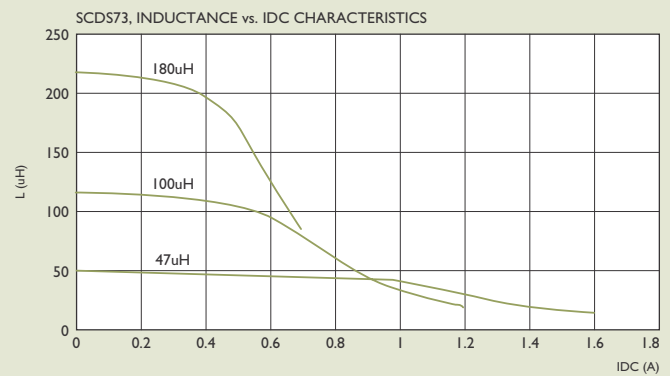
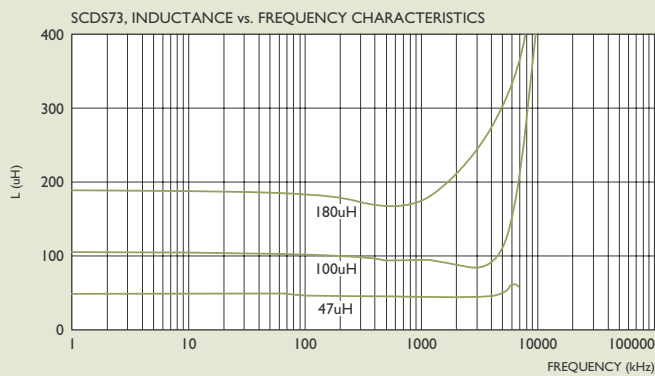
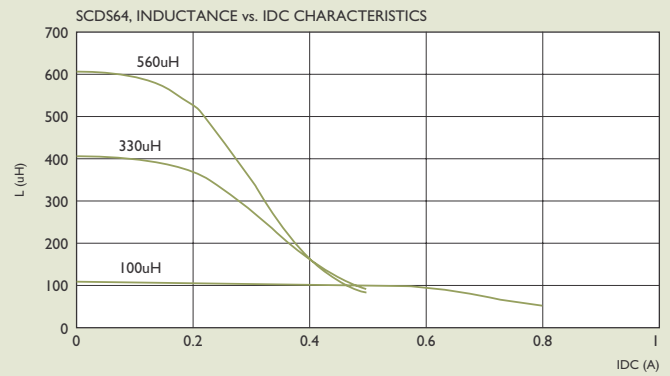
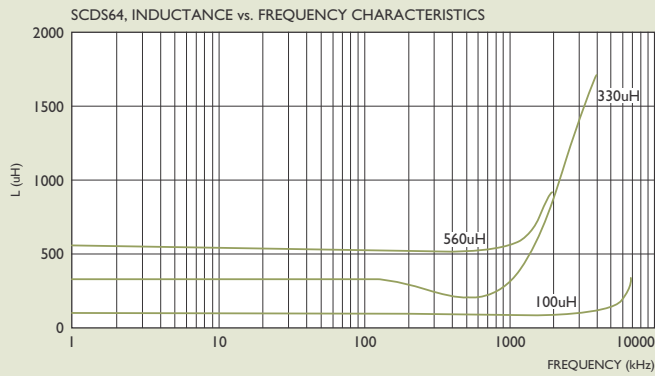
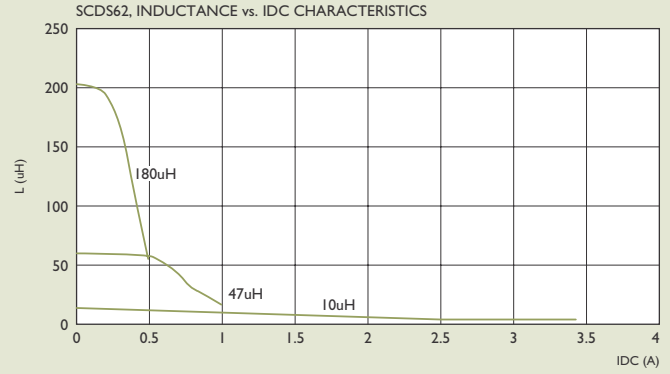
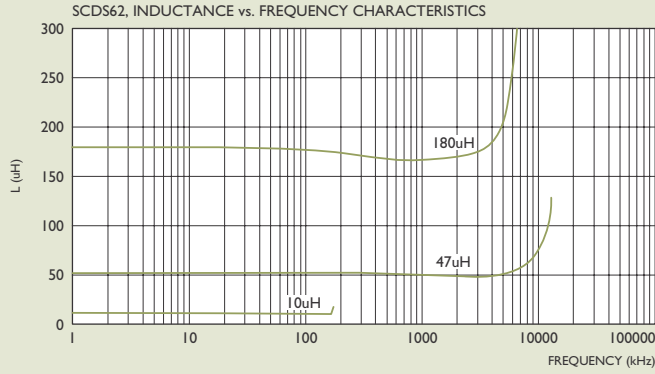
- Tolerance Of Inductors**
- SCDS2D11 1.5~10μH ± 30%(T)
  - SCDS2D14 1.5~12μH ± 30%(T)
  - SCDS2D18LD 2.2~4.7μH ± 30%(T)
  - SCDS3D12 1.0~39μH ± 30%(T)
  - SCDS3D16 1.5~33μH ± 30%(T)
  - SCDS4D18 1.0~68μH ± 30%(T)
  - SCDS4D28 1.2~180μH ± 30%(T)
  - SCDS5D18 4.1~100μH ± 30%(T)
  - SCDS5D28 2.5~100μH ± 30%(T)
  - SCDS6D28 3.0~100μH ± 30%(T)
  - SCDS6D38 3.3~100μH ± 30%(T)



## TYPICAL ELECTRICAL CHARACTERISTICS

Curves of SCD Series

Test Instruments : HP4291A Impedance / Material Analyzer



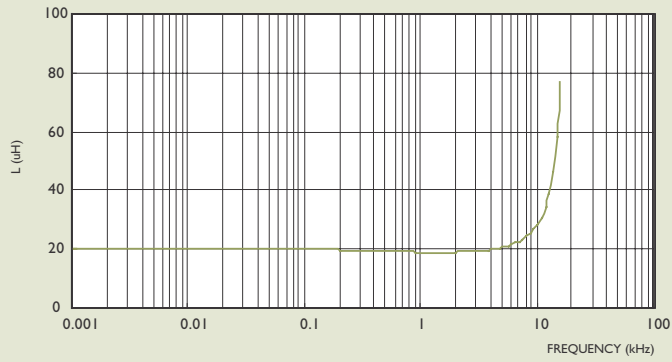


# TYPICAL ELECTRICAL CHARACTERISTICS

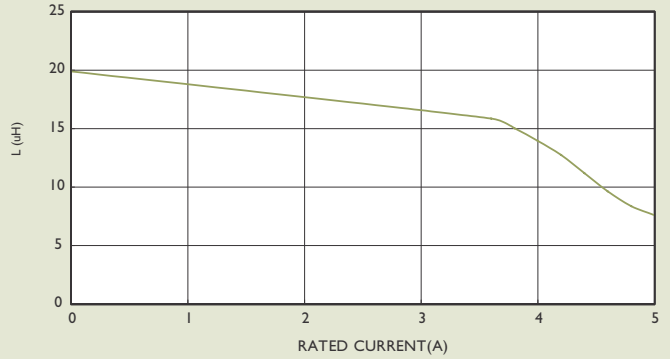
Curves of SCD Series

Test Instruments : HP4291A Impedance / Material Analyzer

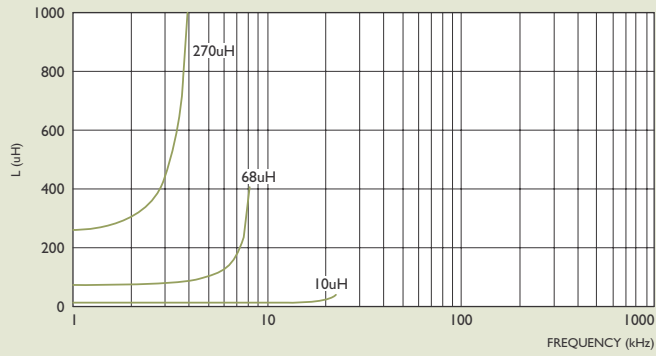
SCDS104R-220MS, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



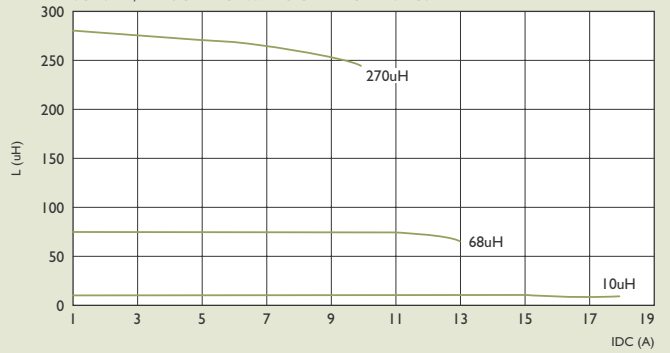
SCDS104R-220M-S



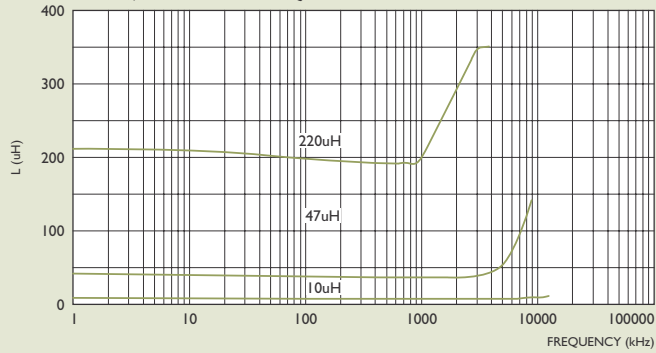
SCDS124, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



SCDS124, INDUCTANCE vs. IDC CHARACTERISTICS



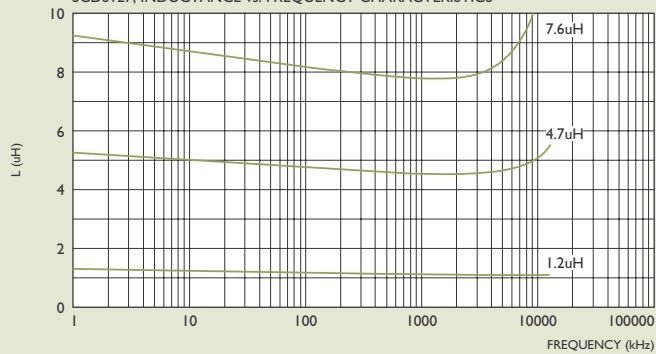
SCDS125, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



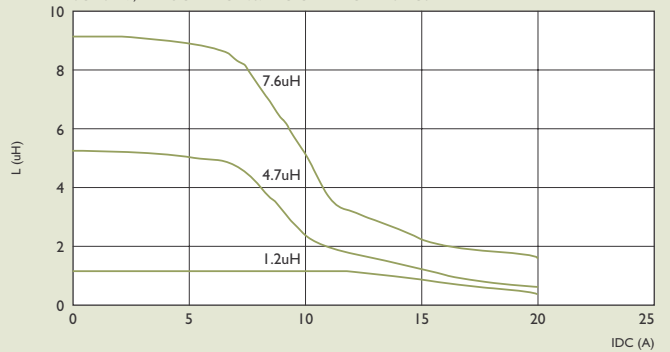
SCDS125, INDUCTANCE vs. IDC CHARACTERISTICS



SCDS127, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



SCDS127, INDUCTANCE vs. IDC CHARACTERISTICS





## SCDS SERIES RELIABILITY TEST

### I-1 MECHANICAL PERFORMANCE

NO.	ITEM	SPECIFICATION	TEST CONDITIONS
I-1-1	Vibration	Appearance : No Damage L Change : within $\pm 10\%$ Q Change : within $\pm 30\%$ RDC : within Specification	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.
I-1-2	Resistance to Soldering Heat	Appearance : No Damage	Pre-heating : 150°C, 1Min. Solder Composition : Sn/Pb = 63/37 Solder Temperature : 260 $\pm$ 5°C Immersion Time : 10 $\pm$ 1Sec.
I-1-3	Solderability	The electrodes shall be at least 90% covered with new solder coating.	Pre-heating : 150°C, 1Min. Solder Composition : Sn/Pb = 63/37 Solder Temperature : 230 $\pm$ 5°C Immersion Time : 4 $\pm$ 1Sec.

### I-2 ENVIRONMENTAL PERFORMANCE

NO.	ITEM	SPECIFICATION	TEST CONDITIONS															
I-2-1	Temperature Shock	Appearance : No Damage L Change : within $\pm 10\%$ L Change : within $\pm 30\%$ RDC : within Specification	10 Cycles (Air to Air)   Cycles shall Consist of : 30Min. Exposure to -55°C 30Min. Exposure to -125°C 15Sec. Max. Transition between Temperatures Measured after Exposure in the Room Condition for 24Hrs.															
I-2-2	Temperature Cycle		One Cycle <table border="1"><thead><tr><th>Step</th><th>Temperature (°C)</th><th>Time (Min.)</th></tr></thead><tbody><tr><td>1</td><td>-25 <math>\pm</math> 3</td><td>30</td></tr><tr><td>2</td><td>25 <math>\pm</math> 2</td><td>3</td></tr><tr><td>3</td><td>85 <math>\pm</math> 3</td><td>30</td></tr><tr><td>4</td><td>25 <math>\pm</math> 2</td><td>3</td></tr></tbody></table> Total : 100 Cycles Measured after Exposure in the Room Condition for 24Hrs.	Step	Temperature (°C)	Time (Min.)	1	-25 $\pm$ 3	30	2	25 $\pm$ 2	3	3	85 $\pm$ 3	30	4	25 $\pm$ 2	3
Step	Temperature (°C)	Time (Min.)																
1	-25 $\pm$ 3	30																
2	25 $\pm$ 2	3																
3	85 $\pm$ 3	30																
4	25 $\pm$ 2	3																
I-2-3	Humidity Resistance		Temperature : 40 $\pm$ 2°C Relative Humidity : 90 ~ 95% Time : 1000Hrs. Measured after Exposure in the Room Condition for 24Hrs.															
I-2-4	High Temperature Resistance		Temperature : 85 $\pm$ 3°C Relative Humidity : 20% Applied Current : Rated Current Time : 1000Hrs. Measured after Exposure in the Room Condition for 24Hrs.															
I-2-5	Low Temperature Resistance		Temperature : -25 $\pm$ 3°C Relative Humidity : 0% Time : 1000Hrs. Measured after Exposure in the Room Condition for 24Hrs.															