Shielded SMD Power Inductors

SCDS Series

PRODUCT IDENTIFICATION

SCDS □□□□ □-□□□□-□

- International No.
- Tolerance
- Inductance
- Packaging Style
- Dimensions
- Product Symbol

- 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.

APPLICATIONS

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

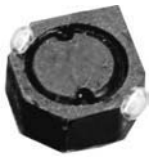
FEATURES

- Available in Magnetically Dhielded
- 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

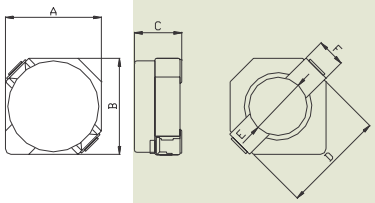
SHAPES AND DIMENSIONS

Dimensions : mm

SCDS2D11/2D14/2D18LD/2D18HP



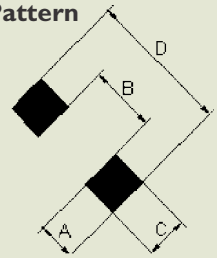
Shapes and Dimensions



Dimensions in mm

TYPE	A	B	C	D	E	F
SCDS2D11	3.2^{+0}	3.2^{+0}	1.2^{+0}	3.3	2.1	1.0
SCDS2D14	3.2^{+0}	3.2^{+0}	1.55^{+0}	3.3	2.1	1.0
SCDS2D18LD	3.2^{+0}	3.2^{+0}	2.0^{+0}	3.3	2.1	1.0
SCDS2D18HP	3.2^{+0}	3.2^{+0}	2.0^{+0}	3.3	2.1	1.0

Recommended Pattern

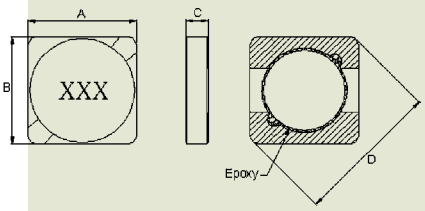


Dimensions in mm

TYPE	A	B	C	D
SCDS2D11	1.3	1.7	1.3	4.3
SCDS2D14	1.3	1.7	1.3	4.3
SCDS2D18LD	1.3	1.7	1.3	4.3
SCDS2D18HP	1.3	1.7	1.3	4.3

SCDS 3D12

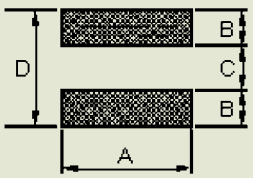
Shapes and Dimensions



Dimensions in mm

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

Recommended Pattern

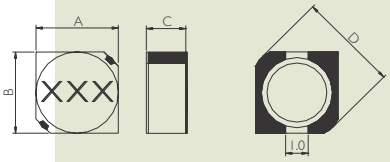


Dimensions in mm

TYPE	A	B	C	D
SCDS3D12	4.6	1.6	1.4	4.6

SCDS 3D16

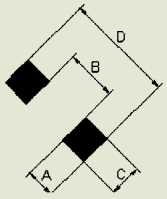
Shapes and Dimensions



Dimensions in mm

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

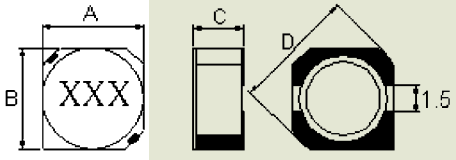
Recommended Pattern

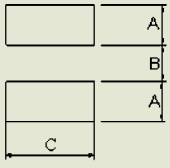


Dimensions in mm Recommended Pattern

TYPE	A	B	C	D
SCDS3D16	1.4	2.4	1.5	5.2

SCDS 4D18~6D38



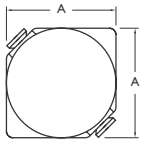


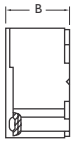
Dimensions in mm

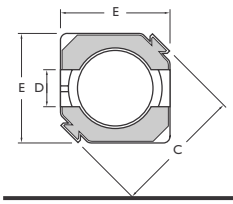
TAPE	A	B	C	D
SCDS4D18	4.7 ± 0.3	4.7 ± 0.3	2.0 Max	6.9 Max
SCDS4D28	4.7 ± 0.3	4.7 ± 0.3	3.0 Max	6.9 Max

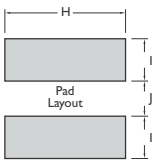
Dimensions in mm

TYPE	A	B	C
S CDS 4D18	1.9	1.5	5.3
S CDS 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									under	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						
1R8	1.8		75						27.5						1.65						2.20				
2R2	2.2	98	94	41		83.5±30%	72	75	31.3					0.78	1.50	0.85		1.12	1.20	1.32	2.04				
2R4	2.4				development												development								
2R5	2.5										18												2.60		
2R7	2.7		106					105	43.3						1.35					1.28	1.60				
3R0	3.0										24	24											2.40	3.00	
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			2.60	
4R1	4.1									57												1.95			
4R2	4.2										31												220		
4R7	4.7	170	169	78		172±30%	105	162	72.0					0.50	1.00	0.63		0.72	0.90	0.84	1.32				
5R0	5.0											31	24											2.40	2.90
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				
6R0	6.0											35												2.25	
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											58										0.97		1.85	
8R7	8.7												34									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			0.30		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	0.32	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			0.20				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								1270												0.27				
151	150								1350												0.24				
181	180								1540												0.22				
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 thedirect current.
- 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

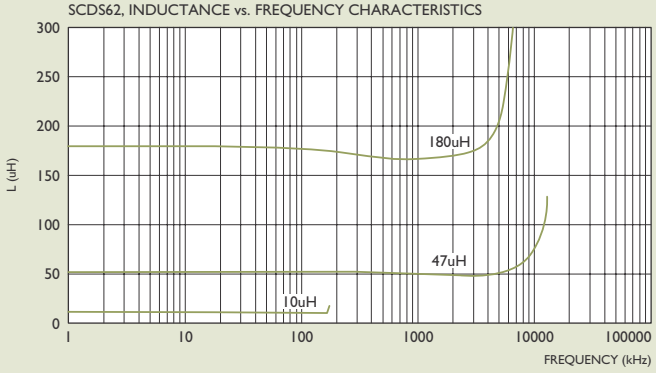
- SCDS2D11 1.5~10μH ± 30%(T)
- SCDS2D14 1.5~12μH ± 30%(T)
- SCDS2D18LD 2.2~4.7μH ± 30%(T)
- SCDS3D12 1.0~39μH ± 30%(T)
- SCDS3D16 1.5~33μH ± 30%(T)
- SCDS4D18 1.0~68μH ± 30%(T)
- SCDS4D28 1.2~180μH ± 30%(T)
- SCDS5D18 4.1~100μH ± 30%(T)
- SCDS5D28 2.5~100μH ± 30%(T)
- SCDS6D28 3.0~100μH ± 30%(T)
- SCDS6D38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

TYPICAL ELECTRICAL CHARACTERISTICS

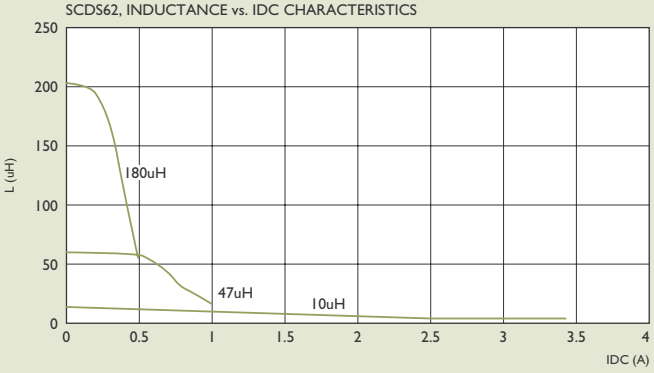
Curves of SCD Series

Test Instruments : HP4291A Impedance / Material Analyzer

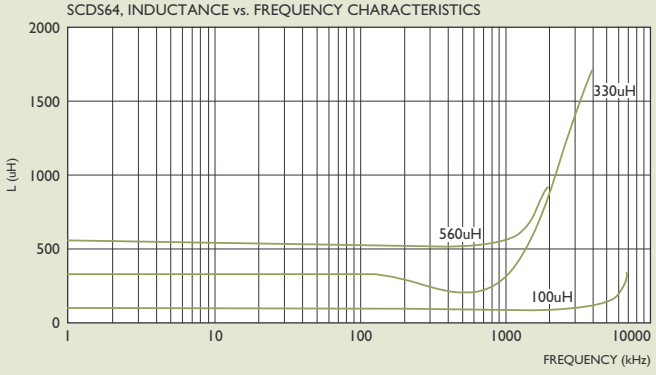
SCDS62, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



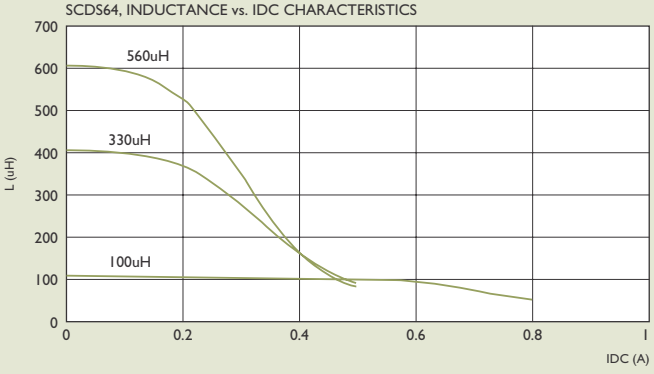
SCDS62, INDUCTANCE vs. IDC CHARACTERISTICS



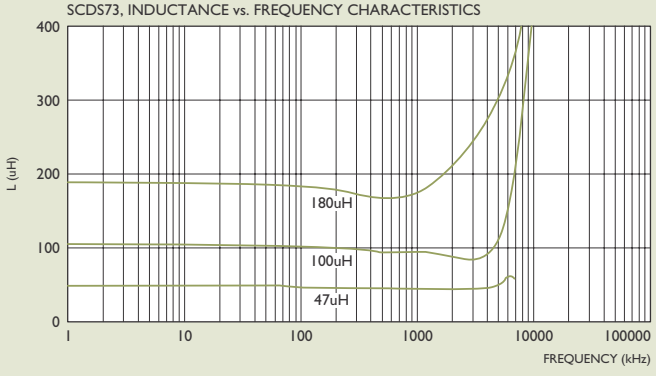
SCDS64, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



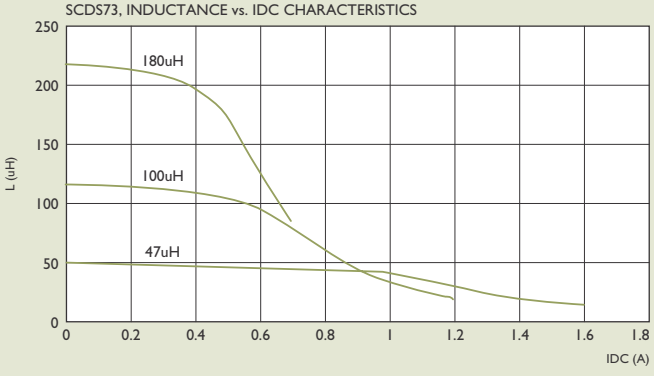
SCDS64, INDUCTANCE vs. IDC CHARACTERISTICS



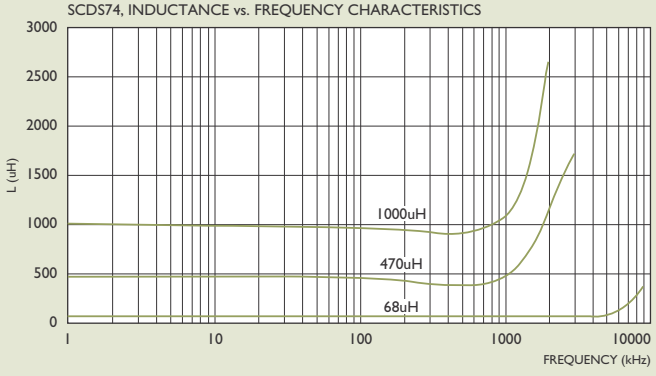
SCDS73, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



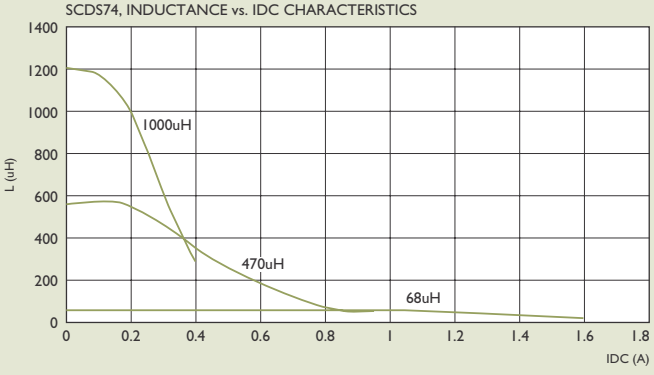
SCDS73, INDUCTANCE vs. IDC CHARACTERISTICS



SCDS74, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



SCDS74, INDUCTANCE vs. IDC CHARACTERISTICS

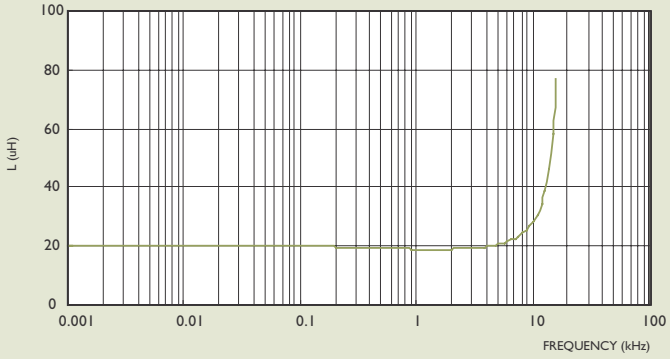


TYPICAL ELECTRICAL CHARACTERISTICS

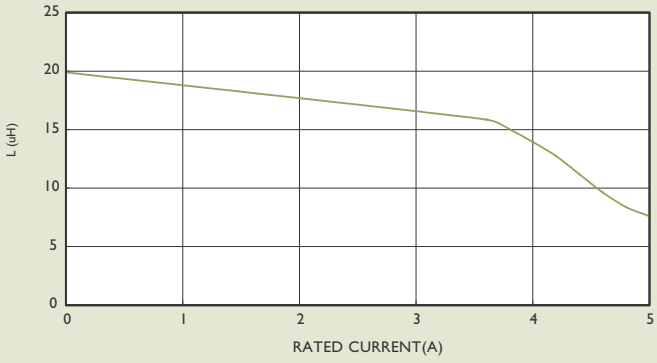
Curves of SCD Series

Test Instruments : HP4291A Impedance / Material Analyzer

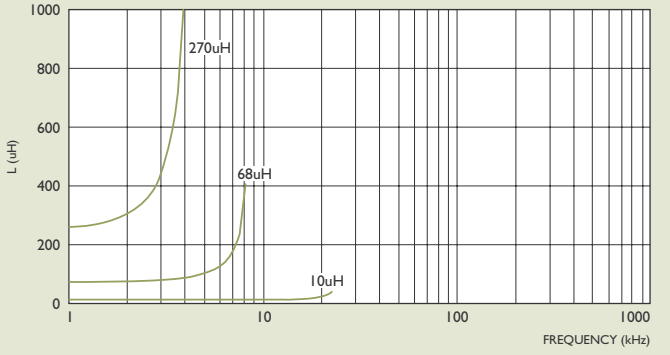
SCDS104R-220MS, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



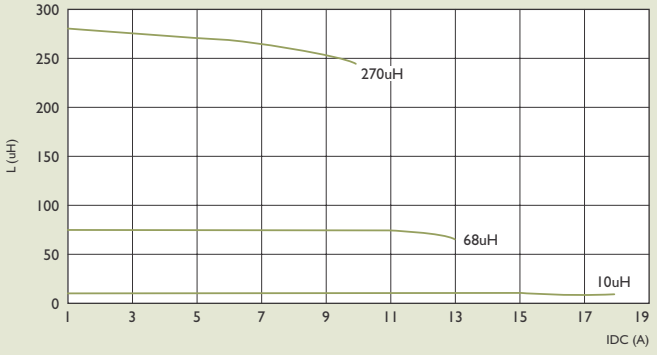
SCDS104R-220M-S



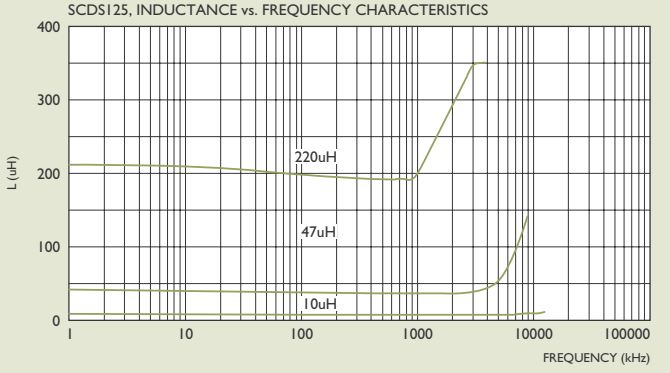
SCDS124, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



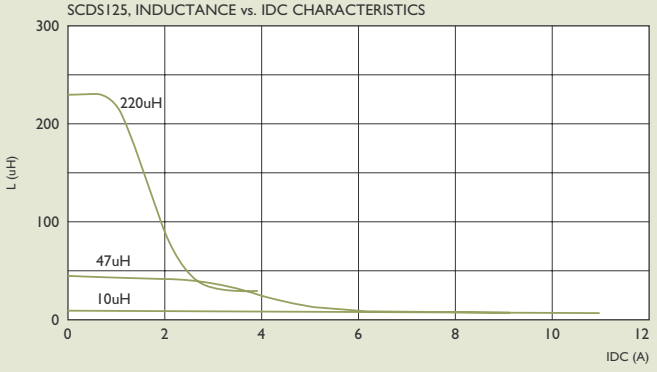
SCDS124, INDUCTANCE vs. IDC CHARACTERISTICS



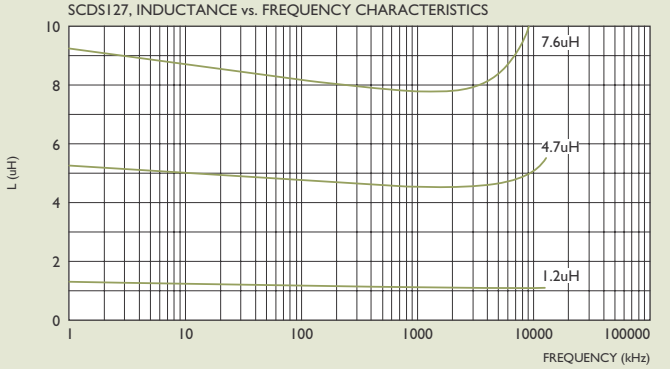
SCDS125, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



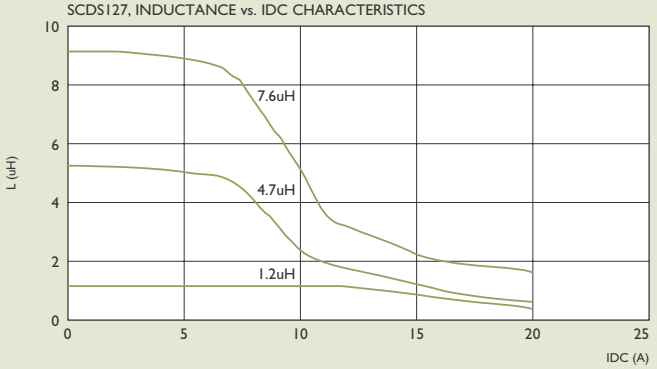
SCDS125, INDUCTANCE vs. IDC CHARACTERISTICS



SCDS127, INDUCTANCE vs. FREQUENCY CHARACTERISTICS



SCDS127, INDUCTANCE vs. IDC CHARACTERISTICS



SCDS SERIES RELIABILITY TEST

1-1 MECHANICAL PERFORMANCE

NO.	ITEM	SPECIFICATION	TEST CONDITIONS
1-1-1	Vibration	Appearance : No Damage L Change : within ±10% Q Change : within ±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.
1-1-2	Resistance to Soldering Heat	Appearance : No Damage	Pre-heating : 150°C, 1Min. Solder Composition : Sn/Pb = 63/37 Solder Temperature : 260 ± 5°C Immersion Time : 10 ± 1Sec.
1-1-3	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 ± 5°C Immersion Time : 4 ± 1Sec.

1-2 ENVIRONMENTAL PERFORMANCE

NO.	ITEM	SPECIFICATION	TEST CONDITIONS
1-2-1	Temperature Shock	Appearance : No Damage L Change : within ±10% L Change : within ±30% RDC : within Specification	10 Cycles (Air to Air) 1 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.
1-2-2	Temperature Cycle		One Cycle

Step	Temperature (°C)	Time (Min.)
1	-25 ± 3	30
2	25 ± 2	3
3	85 ± 3	30
4	25 ± 2	3

		Total : 100 Cycles Measured after Exposure in the Room Condition for 24Hrs.
1-2-3	Humidity Resistance	Temperature : 40 ± 2°C Relative Humidity : 90 ~ 95% Time : 1000Hrs. Measured after Exposure in the Room Condition for 24Hrs.
1-2-4	High Temperature Resistance	Temperature : 85 ± 3°C Relative Humidity : 20% Applied Current : Rated Current Time : 1000Hrs. Measured after Exposure in the Room Condition for 24Hrs.
1-2-5	Low Temperature Resistance	Temperature : -25 ± 3°C Relative Humidity : 0% Time : 1000Hrs. Measured after Exposure in the Room Condition for 24Hrs.