

Data Sheet

Customer:

Product: Shielded SMD Power Inductor – SCDS Series

Sizes.: 3D18/4D18/4D22/4D28/5D18/5D28/6D28/6D38

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VIKING TECH CORPORATION

光韻科技股份有限公司

No.70, Kuanfu N. Rad.,

Hsin Chu Industrial Park,

Hukou Hsiang, Hsin Chu Hsien,

303, Taiwan

TEL:886-3-5972931

FAX:886-3-5972935•886-3-5973494

E-mail:sales@viking.com.tw

VIKING TECH CORPORATION KAOHSIUNG BRANCH

光韻科技股份有限公司高雄分公司

No.248-3, Sin-Sheng Rd., Cian-Jhen Dist., Kaohsiung,

806, Taiwan

TEL:886-7-8217999

FAX:886-7-8228229

E-mail:sales@viking.com.tw

WUXI TMTEC CO., LTD.

無錫泰銘電子有限公司

No.22 Xixia Road, Machinery & Industry Park,

National Hi-Tech Industrial Development Zone

of Wuxi, Wuxi, Jiangsu Province, China

Zip Code:214028

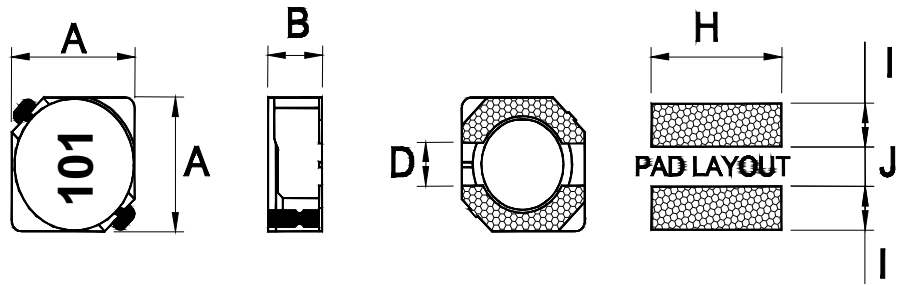
TEL:86-510-85203339

FAX:86-510-85203667•86-510-85203977

E-mail:china@viking.com.tw

Produced by (QC)	Checked (QC)	Approved by (QC)	Prepared by (Sales)	Accepted by (Customer)
19-May-15	19-May-15	19-May-15	19-May-15	
<i>Kris Chen</i>	<i>Ben Chang</i>	<i>Ben Chang</i>		

Shielded SMD Power Inductor



Features

- Directly connected electrode on ferrite core
- Available in magnetically shielded
- Low DC resistance
- Suitable for large current
- Available on tape and reel for auto surface mounting

Applications

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

Characteristics

- Rated DC Current: The current when the inductance becomes 35% lower than its initial value or the current when the temperature of coil increases to $\Delta 40^{\circ}\text{C}$. The smaller one is defined as Rated DC Current. ($T_a=25^{\circ}\text{C}$)
- Operating temperature range: $-40\sim 125^{\circ}\text{C}$

Dimensions

Unit: mm

Type	A	B max.	D	H	I	J
SCDS3D18	3.8 ± 0.3	2.0	1.1	4.6	1.65	1.0
SCDS4D18	4.7 ± 0.3	2.0	1.5	5.3	1.90	1.5
SCDS4D22	4.7 ± 0.3	2.4	1.5	5.3	1.90	1.5
SCDS4D28	4.7 ± 0.3	3.0	1.5	5.3	1.90	1.5
SCDS5D18	5.7 ± 0.3	2.0	2.0	6.3	2.15	2.0
SCDS5D28	5.7 ± 0.3	3.0	2.0	6.3	2.15	2.0
SCDS6D28	6.7 ± 0.3	3.0	2.0	7.3	2.65	2.0
SCDS6D38	6.7 ± 0.3	4.0	2.0	7.3	2.65	2.0

Inductance and rated current ranges

- SCDS3D18 1.0~220 μH 2.40~0.13A
- SCDS4D18 1.0~220 μH 1.72~0.13A
- SCDS4D22 1.5~150 μH 2.00~0.21A
- SCDS4D28 1.2~220 μH 2.56~0.21A
- SCDS5D18 2.2~470 μH 2.30~0.18A
- SCDS5D28 2.2~680 μH 2.60~0.18A
- SCDS6D28 1.0~330 μH 6.15~0.35A
- SCDS6D38 1.0~330 μH 5.60~0.39A

– Test equipment:

L: HP4284A Precision LCR meter

DCR: Milli-ohm meter

Product Identification

SCDS	5D28	N	T	101
Product Type	Dimensions (AxAxB)	Inductor Tolerance	Packaging Style	Inductance
	3D18: 3.8x3.8x2.0 4D18: 4.7x4.7x2.0 4D22: 4.7x4.7x2.4 4D28: 4.7x4.7x3.0 5D18: 5.7x5.7x2.0 5D28: 5.7x5.7x3.0 6D28: 6.7x6.7x3.0 6D38: 6.7x6.7x4.0	M: $\pm 20\%$ N: $\pm 30\%$	T: Tape and Reel	1R0: 1.0 μH 470: 47 μH 101: 100 μH

Shielded SMD Power Inductor

■Electrical Characteristics

SCDS3D18 / 4D18 / 4D22 / 4D28 Type

Codes	L (μ H)	Tolerance	Test Condition	DCR (Ω) max.				IDC (A) max.			
				3D18	4D18	4D22	4D28	3D18	4D18	4D22	4D28
1R0	1.0	N	100KHz, 0.1V	0.050	0.045	-	-	2.40	1.72	-	-
1R2	1.2	N	100KHz, 0.1V	-	0.048	-	0.024	-	1.65	-	2.56
1R5	1.5	N	100KHz, 0.1V	0.056	0.050	0.018	-	1.55	1.60	2.00	-
1R8	1.8	N	100KHz, 0.1V	-	0.058	0.021	0.028	-	1.35	1.90	2.20
2R2	2.2	N	100KHz, 0.1V	0.072	0.075	0.025	0.031	1.20	1.32	1.80	2.04
2R7	2.7	N	100KHz, 0.1V	-	0.105	-	0.043	-	1.28	-	1.60
3R3	3.3	N	100KHz, 0.1V	0.085	0.110	0.035	0.049	1.10	1.04	1.40	1.57
3R9	3.9	N	100KHz, 0.1V	-	0.155	0.040	0.065	-	0.88	1.30	1.44
4R7	4.7	N	100KHz, 0.1V	0.105	0.162	0.056	0.072	0.90	0.84	1.10	1.32
5R6	5.6	N	100KHz, 0.1V	-	0.170	0.062	0.101	-	0.80	1.05	1.17
6R8	6.8	N	100KHz, 0.1V	0.170	0.200	0.088	0.109	0.73	0.76	1.00	1.12
8R2	8.2	N	100KHz, 0.1V	-	0.245	0.097	0.118	-	0.68	0.90	1.04
100	10	N	100KHz, 0.1V	0.210	0.200	0.102	0.128	0.55	0.61	0.80	1.00
120	12	N	100KHz, 0.1V	0.275	0.210	0.110	0.132	0.50	0.56	0.75	0.84
150	15	N	100KHz, 0.1V	0.295	0.240	0.127	0.149	0.45	0.50	0.68	0.76
180	18	N	100KHz, 0.1V	-	0.338	0.169	0.166	-	0.48	0.60	0.72
220	22	N	100KHz, 0.1V	0.430	0.397	0.200	0.235	0.40	0.41	0.54	0.70
270	27	N	100KHz, 0.1V	0.557	0.441	0.283	0.261	0.38	0.35	0.51	0.58
330	33	N	100KHz, 0.1V	0.675	0.694	0.326	0.378	0.32	0.32	0.48	0.56
390	39	N	100KHz, 0.1V	-	0.709	0.451	0.384	-	0.30	0.43	0.50
470	47	N	100KHz, 0.1V	0.964	0.922	0.500	0.587	0.27	0.28	0.38	0.48
560	56	N	100KHz, 0.1V	1.330	1.080	0.555	0.625	0.22	0.26	0.36	0.41
680	68	N	100KHz, 0.1V	-	1.300	0.634	0.699	-	0.24	0.33	0.35
820	82	N	100KHz, 0.1V	-	1.560	0.794	0.915	-	0.22	0.30	0.32
101	100	N	100KHz, 0.1V	2.600	1.730	0.880	1.020	0.16	0.20	0.25	0.29
121	120	N	100KHz, 0.1V	-	2.390	1.140	1.270	-	0.18	0.23	0.27
151	150	N	100KHz, 0.1V	-	2.670	1.350	1.360	-	0.15	0.21	0.24
181	180	N	100KHz, 0.1V	-	4.000	-	1.540	-	0.14	-	0.22
221	220	N	100KHz, 0.1V	4.770	4.300	-	2.000	0.13	0.13	-	0.21

Shielded SMD Power Inductor

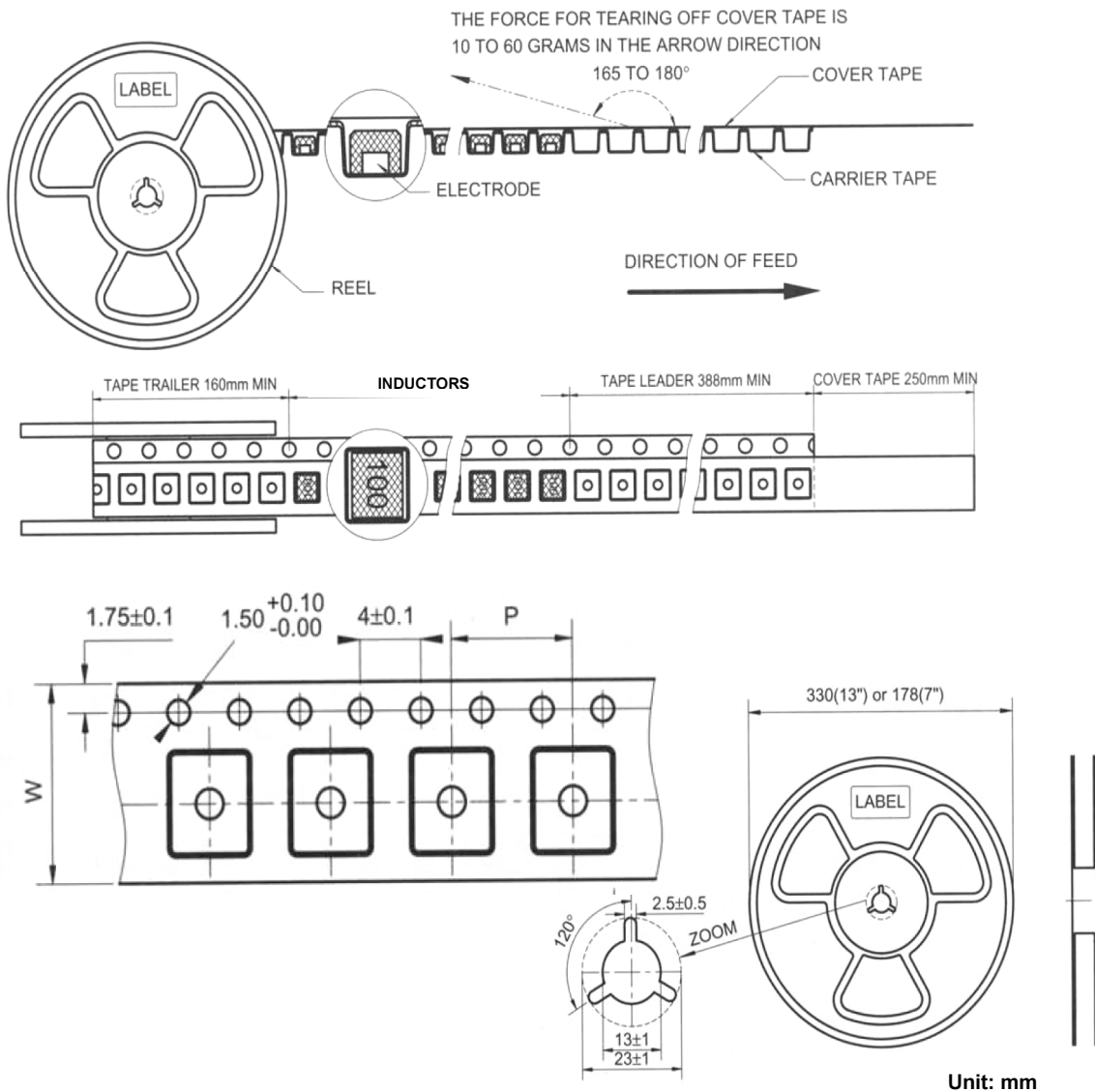
■Electrical Characteristics

SCDS5D18 / 5D28 / 6D28 / 6D38 Type

Codes	L (μ H)	Tolerance		Test Condition	DCR (Ω) max.				IDC (A) max.			
		5D18 5D28 6D28	6D38		5D18	5D28	6D28	6D38	5D18	5D28	6D28	6D38
1R0	1.0	N	N	10KHz, 0.1V	-	-	0.012	0.016	-	-	6.15	5.60
2R2	2.2	N	N	10KHz, 0.1V	0.039	0.018	0.018	0.019	2.30	2.60	4.00	4.40
2R6	2.6	N	-	10KHz, 0.1V	0.046	0.018	-	-	2.20	2.60	-	-
3R0	3.0	N	-	10KHz, 0.1V	-	0.024	0.024	-	-	2.40	3.00	-
3R3	3.3	N	M,N	10KHz, 0.1V	0.048	0.035	0.026	0.020	2.00	2.40	2.80	3.50
3R9	3.9	N	-	10KHz, 0.1V	-	-	0.027	-	-	-	2.60	-
4R1	4.1	N	-	10KHz, 0.1V	0.057	-	-	-	1.80	-	-	-
4R2	4.2	N	-	10KHz, 0.1V	-	0.031	-	-	-	2.20	-	-
4R7	4.7	N	N	10KHz, 0.1V	0.072	0.037	0.029	-	1.77	2.00	2.50	-
5R0	5.0	N	M,N	10KHz, 0.1V	-	-	0.031	0.024	-	-	2.40	2.75
5R3	5.3	N	-	10KHz, 0.1V	-	0.038	0.033	-	-	1.90	2.30	-
5R4	5.4	N	-	10KHz, 0.1V	0.076	-	-	-	1.60	-	-	-
5R6	5.6	N	-	10KHz, 0.1V	-	0.040	-	-	-	1.85	-	-
6R0	6.0	N	-	10KHz, 0.1V	-	-	0.035	-	-	-	2.25	-
6R2	6.2	N	M,N	10KHz, 0.1V	0.096	0.045	-	0.027	1.40	1.80	-	2.50
6R8	6.8	N	-	10KHz, 0.1V	0.110	0.050	0.052	-	1.30	1.82	2.20	-
7R3	7.3	N	-	10KHz, 0.1V	-	-	0.054	-	-	-	2.10	-
7R4	7.4	N	M,N	10KHz, 0.1V	-	-	-	0.031	-	-	-	2.30
8R2	8.2	N	-	10KHz, 0.1V	-	0.053	-	-	-	1.60	-	-
8R6	8.6	N	-	10KHz, 0.1V	-	-	0.058	-	-	-	1.85	-
8R7	8.7	N	M,N	10KHz, 0.1V	-	-	-	0.034	-	-	-	2.20
8R9	8.9	N	-	10KHz, 0.1V	0.116	-	-	-	1.25	-	-	-
100	10	N	M,N	10KHz, 0.1V	0.124	0.065	0.065	0.038	1.20	1.30	1.70	2.00
120	12	N	M,N	10KHz, 0.1V	0.153	0.076	0.070	0.053	1.10	1.20	1.55	1.70
150	15	N	M,N	10KHz, 0.1V	0.196	0.103	0.084	0.057	0.97	1.10	1.40	1.60
180	18	N	M,N	10KHz, 0.1V	0.210	0.110	0.095	0.092	0.85	1.00	1.32	1.50
220	22	N	M,N	10KHz, 0.1V	0.290	0.122	0.128	0.096	0.80	0.90	1.20	1.30
270	27	N	M,N	10KHz, 0.1V	0.330	0.175	0.142	0.109	0.75	0.85	1.05	1.20
330	33	N	M,N	10KHz, 0.1V	0.386	0.189	0.165	0.124	0.65	0.75	0.97	1.10
390	39	N	M,N	10KHz, 0.1V	0.520	0.212	0.210	0.138	0.57	0.70	0.86	1.00
470	47	N	M,N	10KHz, 0.1V	0.595	0.260	0.238	0.155	0.54	0.62	0.80	0.95
560	56	N	M,N	10KHz, 0.1V	0.665	0.305	0.277	0.202	0.50	0.58	0.73	0.85
680	68	N	M,N	10KHz, 0.1V	0.840	0.355	0.304	0.234	0.43	0.52	0.65	0.75
820	82	N	M,N	10KHz, 0.1V	0.978	0.463	0.390	0.324	0.41	0.46	0.60	0.70
101	100	N	M,N	10KHz, 0.1V	1.200	0.520	0.535	0.368	0.35	0.42	0.54	0.65
151	150	N	M,N	10KHz, 0.1V	2.000	0.810	0.640	0.483	0.25	0.40	0.40	0.60
221	220	N	-	10KHz, 0.1V	3.280	1.250	1.350	-	0.20	0.32	0.35	-
331	330	N	M,N	10KHz, 0.1V	-	1.650	2.000	1.250	-	0.28	0.35	0.39
471	470	N	-	10KHz, 0.1V	6.560	3.560	-	-	0.18	0.22	-	-
561	560	N	-	10KHz, 0.1V	-	4.230	-	-	-	0.20	-	-
681	680	N	-	10KHz, 0.1V	-	4.500	-	-	-	0.18	-	-

Shielded SMD Power Inductor

■Tape and Reel specifications



Unit: mm

Type	Tape size		Parts Per Reel
	W	P	13"
SCDS3D18	12	8	1000
SCDS4D18	12	8	2000
SCDS4D22	12	8	2000
SCDS4D28	12	8	2000
SCDS5D18	12	8	2000
SCDS5D28	16	8	2000
SCDS6D28	16	12	1500
SCDS6D38	16	12	1000

Shielded SMD Power Inductor

■ SMT Power Inductor Environmental Specifications

General

Items	Specifications
Shelf Storage conditions	Temperature range: 25±3°C; Humidity: <80% relative humidity. Recommended product should be used within six months from the time of delivery.

Environmental test

Test Items	Specifications	Test Conditions / Test Methods
High temperature Storage test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Temperature 85±2°C, Time: 48±2 hours, Tested after 1hour at room temperature.
Low temperature Storage test		Temperature -25±2°C, Time: 48±2 hours, Tested after 1hour at room temperature.
Humidity test		Temperature 40±2°C, 90~95% relative humidity Time: 96±2 hours Tested after 1hour at room temperature.
Thermal shock test		First -25°C 30minutes then 25°C 10 minutes last 85°C 30 minutes, as 1 cycle. Go through 5 cycles. Tested after 1 hour at room temperature.

Mechanical test

Test Items	Specifications	Test Conditions / Test Methods
Solder ability test	Terminal area must have 90% minimum solder coverage.	Dip pads in flux then dip in solder pot (SnCuNi) at 245±5°C for 3 seconds.
Resistance to Soldering Heat	No case deformation or change in appearance.	Flux should cover the whole of the sample before heating, then be preheated for about 2 minutes over temperature of 130~150°C. Immersing to 260±5°C for 10 seconds.
Vibration test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.
Shock resistance		Drop down with 981m/s ² (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of three orientations.

The condition of reflow (recommendation)

