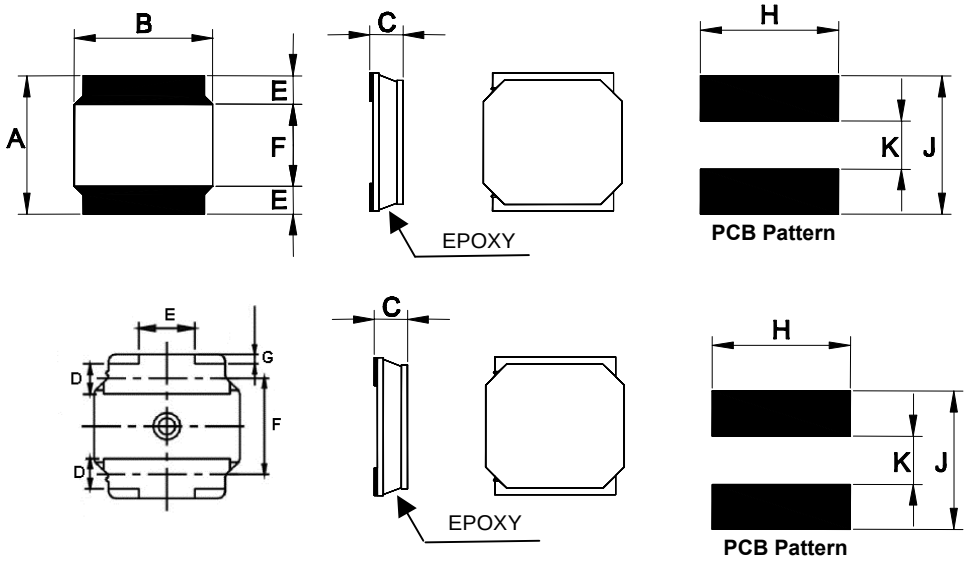
SMD Power Inductor



■Dimensions

Unit: mm

Type	A	B	C max.	D	E	F	G	H	J	K
SDIA0310	3.0±0.2	3.0±0.2	1.0	-	0.9±0.2	1.9±0.2	-	2.7	3.0	0.8
SDIA0312	3.0±0.2	3.0±0.2	1.25	-	0.9±0.2	1.9±0.2	-	2.7	3.0	0.8
SDIA0315	3.0±0.2	3.0±0.2	1.5	-	0.9±0.2	1.9±0.2	-	2.7	3.0	0.8
SDIA0410	4.0±0.2	4.0±0.2	1.0	-	1.1±0.2	2.5±0.2	-	3.7	4.0	1.2
SDIA0418	4.0±0.2	4.0±0.2	1.8	-	1.1±0.2	2.5±0.2	-	3.7	4.0	1.2
SDIA0520	5.0±0.2	5.0±0.2	2.0	2.3±0.3	1.25±0.2	3.6±0.2	0.3±0.2	4.7	5.0	1.5
SDIA0528	5.0±0.2	5.0±0.2	2.8	2.3±0.3	1.25±0.2	3.6±0.2	0.3±0.2	4.7	5.0	1.5
SDIA0610	6.0±0.2	6.0±0.2	1.0	2.3±0.3	1.35±0.2	4.0±0.2	0.3±0.2	5.7	6.3	1.6
SDIA0612	6.0±0.2	6.0±0.2	1.2	2.3±0.3	1.35±0.2	4.0±0.2	0.3±0.2	5.7	6.3	1.6
SDIA0620	6.0±0.2	6.0±0.2	2.0	2.3±0.3	1.35±0.2	4.0±0.2	0.3±0.2	5.7	6.3	1.6
SDIA0628	6.0±0.2	6.0±0.2	2.8	2.3±0.3	1.35±0.2	4.0±0.2	0.3±0.2	5.7	6.3	1.6
SDIA0645	6.0±0.2	6.0±0.2	4.5	2.3±0.3	1.35±0.2	4.0±0.2	0.3±0.2	5.7	6.3	1.6
SDIA0840	8.0±0.2	8.0±0.2	4.2	-	1.6±0.3	5.6±0.3	-	7.5	7.4	1.8

■Features

- Small and Low profile inductor
- It corresponds to high current
- Shield structure magnetically
- Strong structure against a shock-proof

■Applications

- LCD Display etc.
- For Small DC to DC Converters
- PDA.

■Characteristics

- Rated DC Current : The current when the inductance becomes 30% lower than its initial value.
- Operating temperature range: -40～85°C

■Inductance and rated current ranges

- SDIA0310 1.5～22μH 1.20～0.35A
- SDIA0312 1.5～47μH 1.36～0.25A
- SDIA0315 2.2～47μH 1.48～0.32A
- SDIA0410 1.0～47μH 1.80～0.24A
- SDIA0418 1.0～220μH 4.00～0.27A
- SDIA0520 2.2～10μH 5.20～2.40A
- SDIA0528 2.2～470μH 6.00～0.40A
- SDIA0610 4.7～10μH 1.80～1.40A
- SDIA0612 2.2～10μH 3.10～1.40A
- SDIA0620 1.0～10μH 6.80～1.90A
- SDIA0628 0.9～100μH 6.60～0.62A
- SDIA0645 1.0～100μH 8.50～0.80A
- SDIA0840 0.9～100μH 11.0～1.00A
- Test equipment:

  L: HP4284A LCR meter

  DCR: Milli-ohm meter
- Electrical specifications at 25°C

■Product Identification

SDIA	0312	M	T	470
Product Type	Dimensions (AxC)	Inductor Tolerance	Packaging Style	Inductance
	0310: 3.0x1.0 0312: 3.0x1.25 0315: 3.0x1.5 0410: 4.0x1.0 0418: 4.0x1.8 0520: 5.0x2.0 0528: 5.0x2.8 0610: 6.0x1.0 0612: 6.0x1.2 0620: 6.0x2.0 0628: 6.0x2.8 0645: 6.0x4.5 0840: 8.0x4.0	M: ±20% N: ±30%	T: Tape and Reel	1R0: 1.0μH 470: 47μH 101: 100μH

■Electrical Characteristics

SDIA0310 / 0312 / 0315 / 0410 Type

Codes	L (μH)	Tolerance		Test Condition	DCR (Ω) max.				IDC (A) max.			
		0310 0312 0315	0410		0310	0312	0315	0410	0310	0312	0315	0410
1R0	1.0	N	N	100KHz, 0.25V	-	-	0.045	0.100	-		1.80	1.80
1R5	1.5	N	N	100KHz, 0.25V	0.080	0.060	-		1.20	1.360	-	
2R2	2.2	N	N	100KHz, 0.25V	0.095	0.080	0.060	0.150	1.10	1.100	1.48	1.15
3R3	3.3	N	M	100KHz, 0.25V	0.140	0.100	0.080	0.180	0.87	0.910	1.21	1.10
4R7	4.7	N	M	100KHz, 0.25V	0.190	0.130	0.120	0.210	0.75	0.770	1.02	0.90
6R8	6.8	N	M	100KHz, 0.25V	0.300	-	-	0.300	0.61		-	0.74
100	10	N	M	1KHz, 0.25V	0.450	0.290	0.230	0.380	0.50	0.540	0.70	0.56
150	15	N	M	1KHz, 0.25V	-	-	-	0.510	-		-	0.47
220	22	N	M	1KHz, 0.25V	1.030	0.630	0.520	0.870	0.35	0.375	0.47	0.36
330	33	N	M	1KHz, 0.25V	-	1.030	0.840	1.540	-	0.310	0.39	0.28
470	47	N	M	1KHz, 0.25V	-	1.450	1.340	1.810	-	0.250	0.32	0.24

■Electrical Characteristics

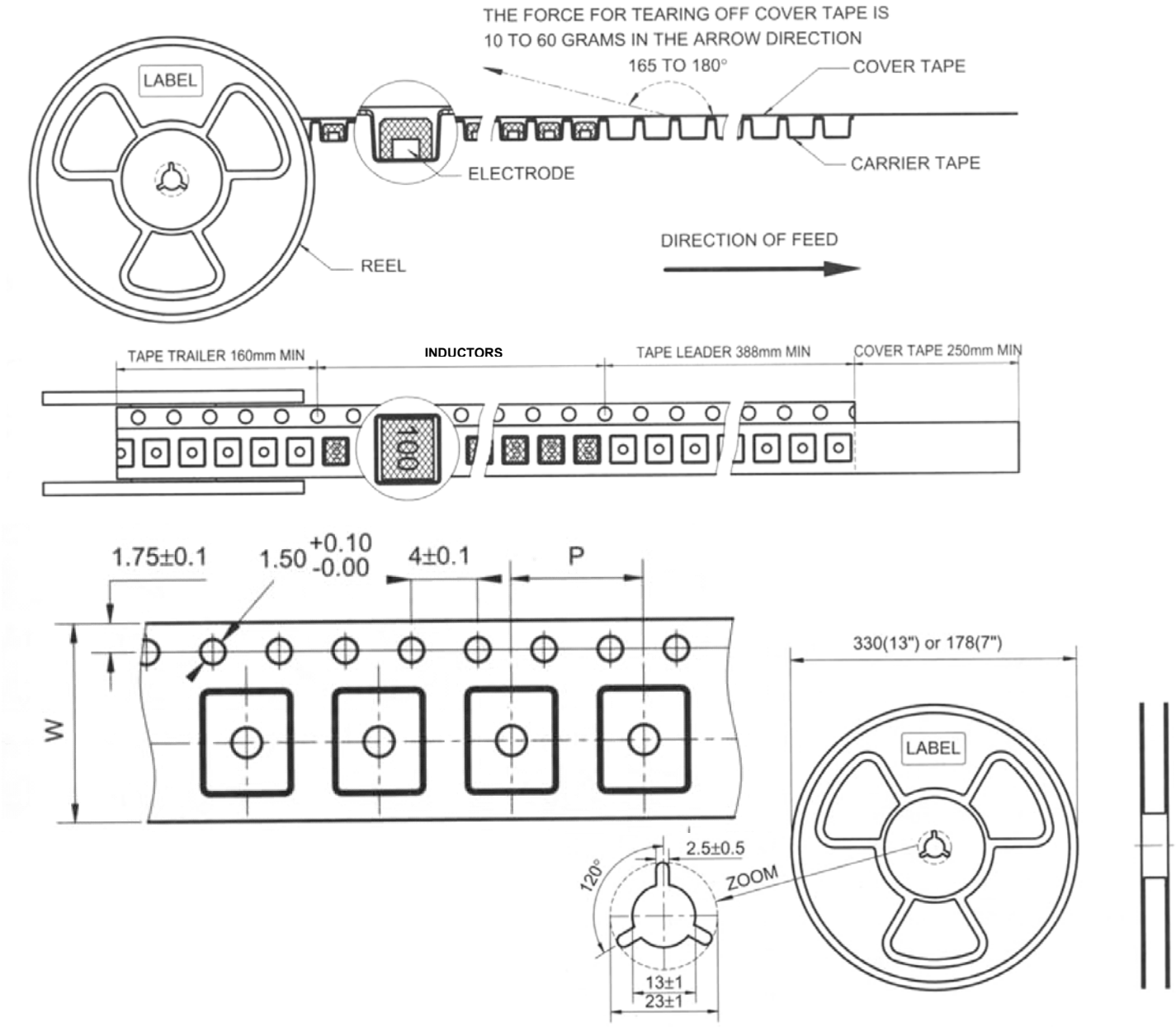
SDIA0418 / 0520 / 0528 / 0610 Type

Codes	L (μH)	Tolerance	Test Condition	DCR (Ω) max.				IDC (A) max.			
				0418	0520	0528	0610	0418	0520	0528	0610
1R0	1.0	N	100KHz, 0.25V	0.030	-	-	-	4.0	-	-	-
2R2	2.2	N	100KHz, 0.25V	0.060	0.049	0.042	-	2.7	5.2	6.0	-
3R3	3.3	M, N	100KHz, 0.25V	0.070	0.074	-	-	2.0	4.0	-	-
4R7	4.7	M, N	100KHz, 0.25V	0.090	0.098	0.077	0.230	1.7	3.6	4.5	1.8
6R8	6.8	M, N	100KHz, 0.25V	0.110	0.137	-	0.450	1.45	2.9	-	1.6
100	10	M, N	1KHz, 0.25V	0.180	0.205	0.163	0.400	1.20	2.4	3.0	1.4
150	15	M, N	1KHz, 0.25V	0.250	-	-	-	0.94	-	-	-
220	22	M, N	1KHz, 0.25V	0.360	-	0.400	-	0.80	-	1.9	-
330	33	M, N	1KHz, 0.25V	0.530	-	-	-	0.65	-	-	-
470	47	M, N	1KHz, 0.25V	0.650	-	0.854	-	0.57	-	1.5	-
680	68	M, N	1KHz, 0.25V	1.000	-	-	-	0.47	-	-	-
101	100	M, N	1KHz, 0.25V	1.500	-	-	-	0.40	-	-	-
151	150	M, N	1KHz, 0.25V	2.500	-	-	-	0.31	-	-	-
221	220	M, N	1KHz, 0.25V	4.000	-	-	-	0.27	-	-	-
471	470	M, N	1KHz, 0.25V	-	-	7.800	-	-	-	0.4	-

SDIA0612 / 0620 / 0628 / 0645 / 0840 Type

Codes	L (μH)	Tolerance	Test Condition	DCR (Ω) max.					IDC (A) max.				
				0612	0620	0628	0645	0840	0612	0620	0628	0645	0840
0R9	0.9	N	100KHz, 0.25V	-	-	0.013	-	-	-	-	6.60	-	-
1R0	1.0	N	100KHz, 0.25V	-	0.026	-	0.014	--	-	6.80	-	8.50	-
1R3	1.3	N	100KHz, 0.25V	-	-	-	0.016	-	-	-	-	8.00	-
1R5	1.5	N	100KHz, 0.25V	-	-	0.016	-	--	-	-	5.00	-	-
1R8	1.8	N	100KHz, 0.25V	-	-	-	0.018	-	-	-	-	7.00	-
2R2	2.2	N	100KHz, 0.25V	0.133	0.049	0.020	-	0.017	3.10	4.70	4.20	-	7.33
2R3	2.3	N	100KHz, 0.25V	-	-	-	0.021	-	-	-	-	6.00	-
3R0	3.0	N	100KHz, 0.25V	-	-	0.023	0.024	-	-	-	3.60	5.00	-
3R3	3.3	M, N	100KHz, 0.25V	-	-	-	-	0.022	-	-	-	-	5.93
4R5	4.5	M	100KHz, 0.25V	-	-	-	0.031	-	-	-	-	4.00	-
4R7	4.7	M, N	100KHz, 0.25V	0.220	0.086	0.031	-	0.023	1.90	2.80	2.70	-	4.70
6R0	6.0	N	100KHz, 0.25V	-	-	0.040	-	-	-	-	2.50	-	-
6R3	6.3	M	100KHz, 0.25V	-	-	-	0.038	-	-	-	-	3.80	-
6R8	6.8	M, N	100KHz, 0.25V	0.280	0.111	-	-	0.033	1.60	2.60	-	-	4.00
100	10	M, N	1KHz, 0.25V	0.430	0.178	0.065	0.047	0.044	1.40	1.90	1.90	3.00	3.40
120	12	M, N	1KHz, 0.25V	-	-	-	-	0.055	-	-	-	-	3.05
150	15	M, N	1KHz, 0.25V	-	-	0.095	0.077	0.065	-	-	1.60	2.30	2.70
220	22	M, N	1KHz, 0.25V	-	-	0.135	0.115	0.086	-	-	1.30	1.90	2.20
330	33	M, N	1KHz, 0.25V	-	-	0.220	0.145	0.130	-	-	1.10	1.50	1.90
470	47	M, N	1KHz, 0.25V	-	-	0.300	0.220	0.200	-	-	0.95	1.30	1.50
680	68	M, N	1KHz, 0.25V	-	-	0.420	0.330	0.300	-	-	0.76	1.00	1.20
101	100	M, N	1KHz, 0.25V	-	-	0.600	0.500	0.380	-	-	0.62	0.80	1.00

■Tape and Reel specifications



Unit: mm

Type	Tape size		Parts Per Reel	
	W	P	7″	13″
SDIA0310	12	8	1000	-
SDIA0312	12	8	1000	-
SDIA0315	12	8	1000	-
SDIA0410	12	8	1000	3500
SDIA0418	12	8	-	3000
SDIA0520	12	8	-	2000
SDIA0528	12	8	-	2000
SDIA0610	12	8	1000	-
SDIA0612	12	8	1000	3500
SDIA0620	12	8	-	2000
SDIA0628	12	8	-	2000
SDIA0645	12	8	-	1000
SDIA0840	16	12	-	1000

■SMT Power Inductor Environmental Specifications

General

Items	Specifications
Shelf Storage conditions	Temperature range: 25±3℃; 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. △L/L≦10%	Temperature 85±2℃, Time: 48±2 hours, Tested after 1hour at room temperature.
Low temperature Storage test		Temperature -25±2℃, Time: 48±2 hours, Tested after 1hour at room temperature.
Humidity test		Temperature 40±2℃, 90~95% relative humidity Time: 96±2 hours Tested after 1hour at room temperature.
Thermal shock test		First -25℃ 30minutes then 25℃ 10 minutes last 85℃ 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
Solderability test	Terminal area must have 90% minimum solder coverage.	Product with Lead-free terminal: Dip pads in flux then dip in solder pot at 245±5℃ 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℃. Immersing to 260±5℃ for 10 seconds.
Vibration test	No case deformation or change in appearance. △L/L≦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):