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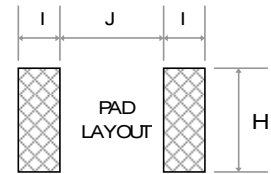
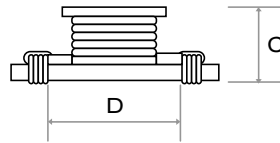
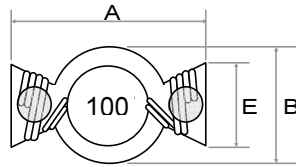
# SPECIFICATIONS

SMD Power Inductor

**PDH-Serie**

Version May 2015

## SMD Power Inductor



### Dimensions

Unit: mm

Type	A max.	B max.	C max.	D	E	H	I	J
PDH1608	7.50	5.20	3.20	4.60	2.5	4.00	2.0	4.00
PDH1813	8.89	6.40	5.00	5.80	3.0	3.00	2.0	5.00
PDH3316	13.21	9.91	6.35	9.50	4.5	6.50	2.5	8.64
PDH4920	19.40	13.30	6.80	12.7	6.6	8.00	3.8	11.70
PDH5022	22.35	16.26	8.00	16.0	8.0	8.64	4.3	14.35

### Features

- Miniature surface mount design
- High power, High saturation inductors
- Very low resistance
- Maximum power density
- Ideal inductors for DC-DC converters
- Available on tape and reel for auto surface mounting

### Inductance and rated current ranges

- PDH1608 0.47 $\mu$ H~22.0 $\mu$ H 7.7~0.70A
- PDH1813 0.18 $\mu$ H~180 $\mu$ H 11.9~0.50A
- PDH3316 0.18 $\mu$ H~100 $\mu$ H 20.0~1.20A
- PDH4920 0.47 $\mu$ H~100 $\mu$ H 25.1~1.80A
- PDH5022 0.78 $\mu$ H~470 $\mu$ H 30.0~0.80A
- Test equipment:  
L: HP4284A LCR meter  
DCR: Milli-ohm meter
- Electrical specifications at 25°C

### Applications

- Notebook Computers
- Handheld Communications
- LCD Televisions
- Power Supply For VTRs
- DC/DC Converters, etc.

### Characteristics

- Saturation Rated Current :The current when the inductance becomes 30% lower than its initial value.(Ta=25°C)
- Operating temperature range: -40~125°C

### Product Identification

PDH	1813	M	T	101
Product Type	Dimensions (AxBxC)	Inductor Tolerance	Packaging Style	Inductance
	1608: 7.5×5.2×3.2 1813: 8.89×6.4×5.0 3316: 13.21×9.91×6.35 4920: 19.4×13.3×6.8 5022: 22.35×16.26×8.0	M: ±20% N: ±30% P: +40%-20%	T: Tape and Reel	1R0: 1.0 $\mu$ H 470: 47 $\mu$ H 101: 100 $\mu$ H

**SMD Power Inductor**

**Electrical Characteristics**

PDH1608 TYPE

Codes	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
R47	0.47	P	100KHz, 0.1V	0.025	7.7
1R0	1.0	M	100KHz, 0.1V	0.050	2.9
1R5	1.5	M	100KHz, 0.1V	0.050	2.6
2R2	2.2	M	100KHz, 0.1V	0.070	2.3
3R3	3.3	M	100KHz, 0.1V	0.080	2.0
4R7	4.7	M	100KHz, 0.1V	0.090	1.5
6R8	6.8	M	100KHz, 0.1V	0.130	1.2
100	10	M	100KHz, 0.1V	0.160	1.1
150	15	M	100KHz, 0.1V	0.230	0.9
220	22	M	100KHz, 0.1V	0.370	0.7

PDH1813 TYPE

Codes	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
R18	0.18	N	100KHz, 0.1V	0.005	11.9
R33	0.33	N	100KHz, 0.1V	0.007	11.7
R47	0.47	N	100KHz, 0.1V	0.008	10.8
R50	0.50	M	100KHz, 0.1V	0.009	8.00
R56	0.56	M	100KHz, 0.1V	0.010	7.70
1R0	1.0	M	100KHz, 0.1V	0.016	7.30
1R2	1.2	M	100KHz, 0.1V	0.017	5.30
2R2	2.2	M	100KHz, 0.1V	0.035	3.50
3R3	3.3	M	100KHz, 0.1V	0.040	3.00
3R9	3.9	M	100KHz, 0.1V	0.051	3.00
4R7	4.7	M	100KHz, 0.1V	0.054	2.60
5R6	5.6	M	100KHz, 0.1V	0.071	2.40
6R8	6.8	M	100KHz, 0.1V	0.080	2.20
8R2	8.2	M	100KHz, 0.1V	0.095	2.00
100	10	M	100KHz, 0.1V	0.111	1.90
120	12	M	100KHz, 0.1V	0.148	1.70
150	15	M	100KHz, 0.1V	0.170	1.50
180	18	M	100KHz, 0.1V	0.231	1.30
220	22	M	100KHz, 0.1V	0.250	1.20
270	27	M	100KHz, 0.1V	0.330	1.10
330	33	M	100KHz, 0.1V	0.350	0.99
390	39	M	100KHz, 0.1V	0.450	0.96
470	47	M	100KHz, 0.1V	0.470	0.87
560	56	M	100KHz, 0.1V	0.648	0.85
680	68	M	100KHz, 0.1V	0.730	0.68
820	82	M	100KHz, 0.1V	1.000	0.81
101	100	M	100KHz, 0.1V	1.110	0.53
181	180	M	100KHz, 0.1V	2.300	0.50

**SMD Power Inductor**

**■Electrical Characteristics**

PDH3316 TYPE

Codes	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
R18	0.18	N	100KHz, 0.1V	0.002	20.00
R33	0.33	M	100KHz, 0.1V	0.002	20.00
R68	0.68	M	100KHz, 0.1V	0.005	13.00
1R0	1.0	M	100KHz, 0.1V	0.006	9.90
1R5	1.5	M	100KHz, 0.1V	0.008	7.90
2R2	2.2	M	100KHz, 0.1V	0.011	6.10
2R7	2.7	M	100KHz, 0.1V	0.012	5.50
3R3	3.3	M	100KHz, 0.1V	0.014	5.10
3R9	3.9	M	100KHz, 0.1V	0.017	4.45
4R7	4.7	M	100KHz, 0.1V	0.018	4.20
5R6	5.6	M	100KHz, 0.1V	0.020	4.05
6R8	6.8	M	100KHz, 0.1V	0.027	3.60
8R2	8.2	M	100KHz, 0.1V	0.026	3.35
100	10	M	100KHz, 0.1V	0.038	3.30
120	12	M	100KHz, 0.1V	0.040	3.00
150	15	M	100KHz, 0.1V	0.045	2.40
180	18	M	100KHz, 0.1V	0.061	2.25
220	22	M	100KHz, 0.1V	0.070	2.00
270	27	M	100KHz, 0.1V	0.090	1.85
330	33	M	100KHz, 0.1V	0.100	1.70
390	39	M	100KHz, 0.1V	0.120	1.55
470	47	M	100KHz, 0.1V	0.150	1.40
560	56	M	100KHz, 0.1V	0.173	1.35
680	68	M	100KHz, 0.1V	0.220	1.20
820	82	M	100KHz, 0.1V	0.252	1.00
101	100	M	100KHz, 0.1V	0.280	0.95

PDH4920 TYPE

Codes	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
R47	0.47	P	100KHz, 0.1V	0.003	25.1
1R0	1.0	P	100KHz, 0.1V	0.004	15.3
1R5	1.5	P	100KHz, 0.1V	0.006	12.0
2R2	2.2	M	100KHz, 0.1V	0.008	10.2
3R3	3.3	M	100KHz, 0.1V	0.009	9.3
4R7	4.7	M	100KHz, 0.1V	0.012	7.7
6R8	6.8	M	100KHz, 0.1V	0.019	6.2
100	10	M	100KHz, 0.1V	0.027	5.2
150	15	M	100KHz, 0.1V	0.032	4.3
220	22	M	100KHz, 0.1V	0.050	3.7
330	33	M	100KHz, 0.1V	0.069	3.0
470	47	M	100KHz, 0.1V	0.109	2.4
680	68	M	100KHz, 0.1V	0.156	2.0
101	100	M	100KHz, 0.1V	0.206	1.8

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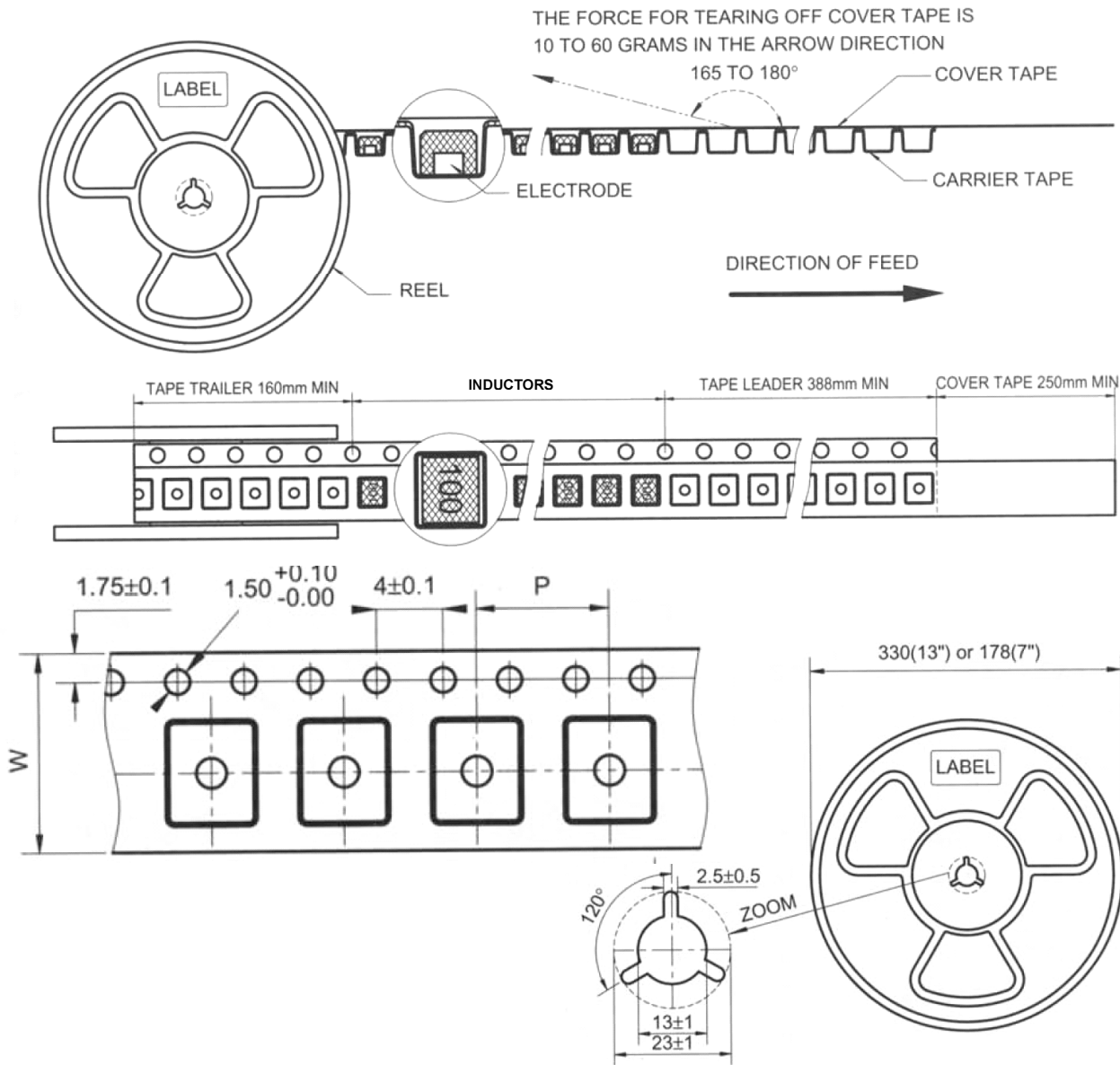
**■Electrical Characteristics**

PDH5022 TYPE

Codes	L ( $\mu$ H)	Tolerance	Test Condition	DCR ( $\Omega$ ) max.	IDC (A) max.
R78	0.78	N	100KHz, 0.1V	0.003	30.0
R80	0.80	N	100KHz, 0.1V	0.003	30.0
1R0	1.0	M	100KHz, 0.1V	0.004	25.0
1R5	1.5	M	100KHz, 0.1V	0.004	25.0
1R8	1.8	M	100KHz, 0.1V	0.005	20.0
2R2	2.2	M	100KHz, 0.1V	0.006	20.0
3R3	3.3	M	100KHz, 0.1V	0.009	17.0
3R9	3.9	M	100KHz, 0.1V	0.010	15.0
4R7	4.7	M	100KHz, 0.1V	0.014	13.0
5R6	5.6	M	100KHz, 0.1V	0.016	12.5
6R0	6.0	M	100KHz, 0.1V	0.017	12.0
6R8	6.8	M	100KHz, 0.1V	0.018	11.5
7R8	7.8	M	100KHz, 0.1V	0.018	11.0
8R2	8.2	M	100KHz, 0.1V	0.022	10.5
100	10	M	100KHz, 0.1V	0.026	10.0
120	12	M	100KHz, 0.1V	0.030	8.5
150	15	M	100KHz, 0.1V	0.032	8.0
180	18	M	100KHz, 0.1V	0.040	7.5
220	22	M	100KHz, 0.1V	0.043	7.00
330	33	M	100KHz, 0.1V	0.066	6.00
470	47	M	100KHz, 0.1V	0.096	5.00
680	68	M	100KHz, 0.1V	0.115	4.00
101	100	M	100KHz, 0.1V	0.165	3.00
151	150	M	100KHz, 0.1V	0.250	2.50
221	220	M	100KHz, 0.1V	0.396	2.40
331	330	M	100KHz, 0.1V	0.588	1.00
471	470	M	100KHz, 0.1V	0.950	0.80

**SMD Power Inductor**

**■Tape and Reel specifications**



Unit: mm

Type	Tape size		Parts Per Reel
	W	P	13"
PDH1608	16	8	1500
PDH1813	16	12	1000
PDH3316	24	16	750
PDH4920	32	20	350
PDH5022	44	20	250

**SMD Power Inductor**

**■ SMD 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 1 hour at room temperature.
Low temperature Storage test		Temperature -40±2°C, Time: 48±2 hours, Tested after 1 hour at room temperature.
Humidity test		Temperature 40±2°C, 90~95% relative humidity Time: 96±2 hours Tested after 1 hour 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
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°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.	Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.
Shock resistance	$\Delta L/L \leq 10\%$	Drop down with 981m/s <sup>2</sup> (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of three orientations.

The condition of reflow (recommendation):

