



## ● Features

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

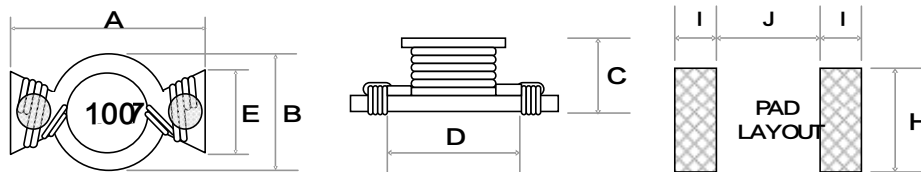
## ● Applications

- I Notebook Computers.
- II Handheld Communications
- III LCD Televisions.
- IV Power Supply For VTRs
- V DC/DC Converters, etc.

## ● Dimensions

- I Saturation Rated Current :The current when the inductance becomes 30% lower than its initial value. (Ta=25° C)
- II Operating temperature range: -40 ~ 105° C

## ● 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

## ● Ordering Information

Example:

PDH	1608	M	T	101
(1)	(2)	(3)	(4)	(5)
Series Name	Dimensions (AxBxC)	Inductance Tolerance	Packaging Code	Inductance

(1) Type: PDH SERIES

(2) Dimensions(AxBxC) : 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

(3) Inductance Tolerance: M: ± 20%, N: ± 30%, P: +40%-20%

(4) Packaging Code: T: Taping Reel

(5) Inductance : 1R0= 1.0μH, 470= 47μH, 101= 100μH

## Reference Standards

JISC 5201-1

## Inductance and rated current ranges

PD1608	1.0 $\mu$ H ~ 1000 $\mu$ H	2.9 ~ 0.10A
PD3308	1.0 $\mu$ H ~ 1000 $\mu$ H	5.15 ~ 0.10A
PD3316	0.68 $\mu$ H ~ 1000 $\mu$ H	11 ~ 0.30A
PD3340	0.47 $\mu$ H ~ 1000 $\mu$ H	40 ~ 0.8A
PD5022	1.0 $\mu$ H ~ 1000 $\mu$ H	20 ~ 1.0A
Test equipment: L: HP4284A LCR meter ,DCR: Milli-ohm meter		
Electrical specifications at 25° C		

## Electrical Characteristics

### PDH1608 TYPE

Codes	L (H)	Tolerance	Test Condition	DCR ( $\Omega$ ) 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 (H)	Tolerance	Test Condition	DCR ( $\Omega$ ) 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

**PDH3316 TYPE**

Codes	L (H)	Tolerance	Test Condition	DCR ( $\Omega$ ) 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

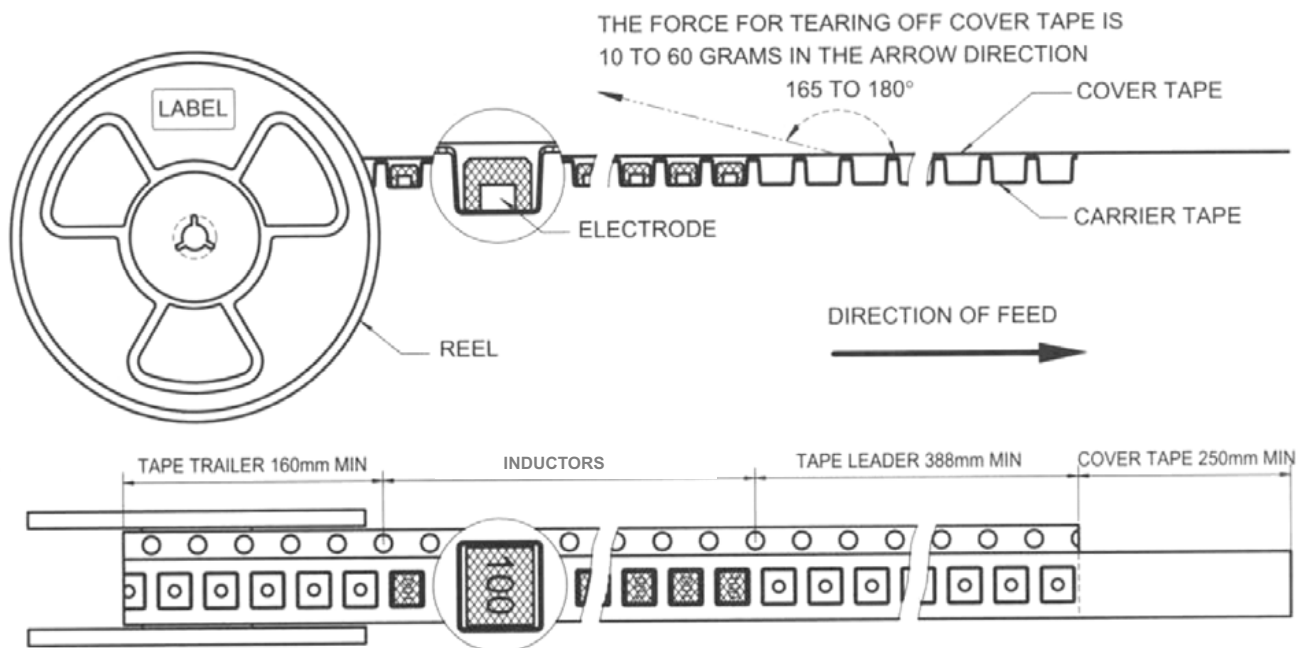
**PDH4920 TYPE**

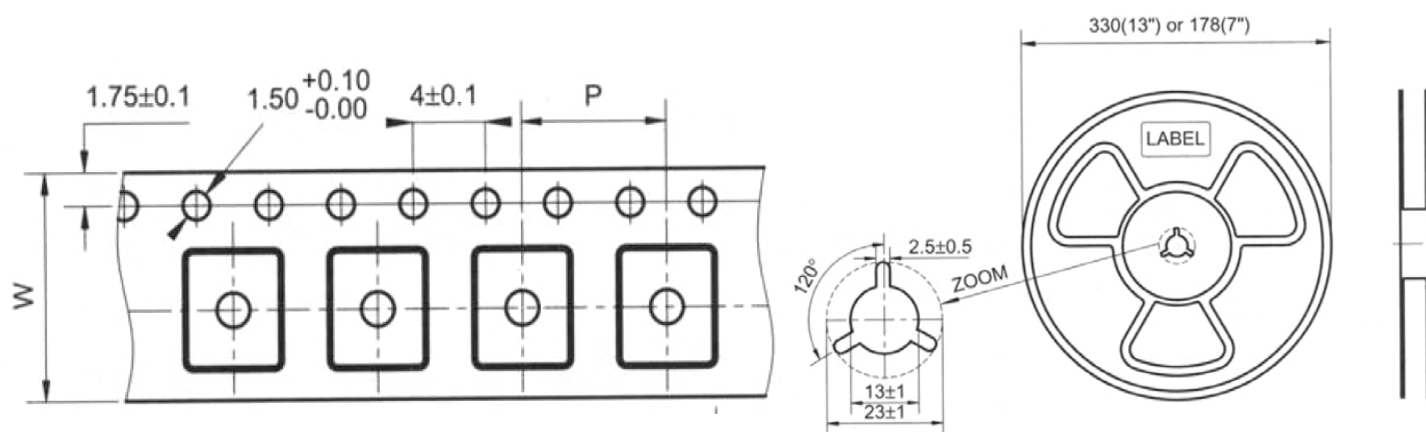
Codes	L (H)	Tolerance	Test Condition	DCR ( $\Omega$ ) max.	IDC (A) max.
R47	0.47	P	100KHz, 0.1V	0.003	25.1
1R0	1.0	P	100KHz, 0.1V	0.004	15.3
1R5	1.5	P	100KHz, 0.1V	0.006	12.0
2R2	2.2	M	100KHz, 0.1V	0.008	10.2
3R3	3.3	M	100KHz, 0.1V	0.009	9.3
4R7	4.7	M	100KHz, 0.1V	0.012	7.7
6R8	6.8	M	100KHz, 0.1V	0.019	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

PDH5022 TYPE

Codes	L (H)	Tolerance	Test Condition	DCR (Ω) 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

**Tape and Reel specifications**





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

## ● Environmental Specifications of SMT Power Inductor

### General

Items	Specifications
Shelf Storage conditions:	Temperature range: $25 \pm 3^{\circ}\text{C}$ ; 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 $85 \pm 2^{\circ}\text{C}$ , Time: $48 \pm 2$ hours, Tested after 1 hour at room temperature.
Low temperature Storage test		Temperature $-25 \pm 2^{\circ}\text{C}$ , Time: $48 \pm 2$ hours, Tested after 1 hour at room temperature.
Humidity test		Temperature $40 \pm 2^{\circ}\text{C}$ , 90~95% relative humidity Time: $96 \pm 2$ hours Tested after 1 hour at room temperature.
Thermal shock test		First $-25^{\circ}\text{C}$ 30minutes then $25^{\circ}\text{C}$ 10 minutes last $85^{\circ}\text{C}$ 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	Product with Lead-free terminal: Dip pads in flux then dip in solder pot at $245 \pm 5^{\circ}\text{C}$ for 3seconds.
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 $130\sim 150^{\circ}\text{C}$ . Immersing to $260 \pm 5^{\circ}\text{C}$ for 10 seconds.
Vibration test	No case deformation or change in appearance.	Apply frequency $10\sim 55\text{Hz}$ . 1.5mm amplitude in each of perpendicular direction for 2 hours.
Shock resistance	$\Delta L/L \leq 10\%$	Drop down with $981\text{m/s}^2$ (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of three orientations..

The condition of reflow (recommendation):

