

## Data Sheet

**Customer:**

**Product:** Shielded SMD Power Inductor – PS Series

**Sizes.:** 1608/3316/5022

**Issued Date:** 03-Jul-20

**Edition:** REV.B8



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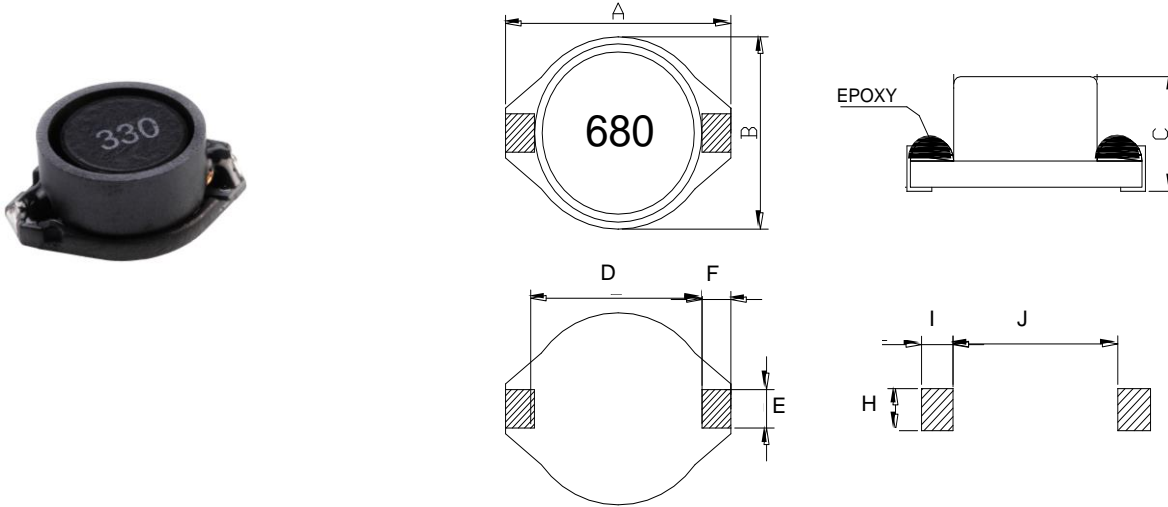
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## Shielded SMD Power Inductor



### Dimensions

Unit: mm

Type	A max.	B max.	C max.	D	E	F	H	I	J
PS1608	6.60	4.45	2.92	4.32	1.27	1.02	3.56	1.40	4.06
PS3316	12.95	9.40	5.21	7.62	2.54	2.54	2.79	2.92	7.37
PS5022	18.54	15.24	7.62	12.70	2.54	2.54	2.79	2.92	12.45

### Features

- With magnetically shielded against radiation
- PS1608 can help to achieve longer battery life significantly in handheld communication devices.
- PS3316 / 5022 designed for the higher current requirements of portable computers.
- PS1608 used ceramic base with gold-plating
- PS3316 / 5022 used LCP plastic base

### Inductance and rated current ranges

- PS1608 1.0~10000 $\mu$ H 1.4~0.02A
- PS3316 1.0~1000 $\mu$ H 5.6~0.32A
- PS5022 1.0~1000 $\mu$ H 20.0~0.80A
- Test equipment:  
L: HP4284A LCR meter  
DCR: Milli-ohm meter
- Electrical specifications at 25°C

### Applications

- Portable Telephones
- Personal Computers
- Other Various Electronic Appliances
- DC/DC Converters, etc.

### Characteristics

- Saturation Rated Current (I sat / IDC): The DC current when the inductance becomes 10%(1608 becomes 30%) lower than its initial value. (Ta=25°C)
- Temperature Rise Current (I rms): The actual current when temperature of coil becomes  $\Delta$  40°C. (Ta=25°C)
- Operating temperature range: -40~125°C

### Product Identification

PS	1608	M	T	101
Product Type	Dimensions (AxBxC)	Inductor Tolerance	Packaging Style	Inductance
	1608: 6.60x4.45x2.92 3316: 12.95x9.4x5.21 5022: 18.54x15.24x7.62	K: $\pm$ 10% M: $\pm$ 20%	T: Tape and Reel	1R0: 1.0 $\mu$ H 470: 47 $\mu$ H 101: 100 $\mu$ H

**Electrical Characteristics**

PS1608 Type(□:Tolerance):

Part No	L (μH)	Tolerance	Test Condition		DCR (Ω) max.	SRF ref (MHz)	Q min.	IDC (A) max.	
			L	Q				I sat	I rms
PS1608□T1R0	1.0	M	100KHz, 0.1V	200KHz, 0.1V	0.040	250	30	1.40	3.00
PS1608□T1R5	1.5	M	100KHz, 0.1V	200KHz, 0.1V	0.045	125	30	0.93	2.30
PS1608□T2R2	2.2	M	100KHz, 0.1V	200KHz, 0.1V	0.050	120	40	0.92	1.80
PS1608□T3R3	3.3	M	100KHz, 0.1V	200KHz, 0.1V	0.055	120	40	0.75	1.60
PS1608□T4R7	4.7	M	100KHz, 0.1V	200KHz, 0.1V	0.060	105	40	0.58	1.40
PS1608□T6R8	6.8	M	100KHz, 0.1V	200KHz, 0.1V	0.065	50	40	0.58	1.20
PS1608□T100	10	M	100KHz, 0.1V	200KHz, 0.1V	0.075	38	40	0.37	1.00
PS1608□T150	15	M	100KHz, 0.1V	100KHz, 0.1V	0.090	33	40	0.31	0.80
PS1608□T220	22	M	100KHz, 0.1V	100KHz, 0.1V	0.11	25	40	0.30	0.70
PS1608□T330	33	M	100KHz, 0.1V	100KHz, 0.1V	0.19	20	40	0.24	0.60
PS1608□T470	47	M	100KHz, 0.1V	100KHz, 0.1V	0.23	20	40	0.24	0.50
PS1608□T680	68	M	100KHz, 0.1V	100KHz, 0.1V	0.29	15	40	0.17	0.40
PS1608□T101	100	M	100KHz, 0.1V	100KHz, 0.1V	0.48	10	40	0.13	0.30
PS1608□T151	150	M	100KHz, 0.1V	100KHz, 0.1V	0.59	9	40	0.10	0.26
PS1608□T221	220	M	100KHz, 0.1V	100KHz, 0.1V	0.90	6	40	0.10	0.22
PS1608□T331	330	M	100KHz, 0.1V	100KHz, 0.1V	1.40	5	40	0.07	0.20
PS1608□T471	470	M	100KHz, 0.1V	100KHz, 0.1V	1.80	4	40	0.06	0.19
PS1608□T681	680	M	100KHz, 0.1V	100KHz, 0.1V	2.20	3	40	0.06	0.18
PS1608□T102	1000	M	100KHz, 0.1V	100KHz, 0.1V	3.40	2	40	0.05	0.15
PS1608□T152	1500	M	100KHz, 0.1V	100KHz, 0.1V	4.20	2	50	0.04	0.12
PS1608□T222	2200	M	100KHz, 0.1V	100KHz, 0.1V	8.50	2	50	0.03	0.10
PS1608□T332	3300	M	100KHz, 0.1V	100KHz, 0.1V	11.0	1	50	0.02	0.08
PS1608□T472	4700	M	100KHz, 0.1V	100KHz, 0.1V	13.9	1	50	0.02	0.06
PS1608□T682	6800	M	100KHz, 0.1V	100KHz, 0.1V	25.0	1	50	0.02	0.04
PS1608□T103	10000	M	100KHz, 0.1V	100KHz, 0.1V	32.8	0.8	50	0.02	0.02

PS3316 Type(□:Tolerance):

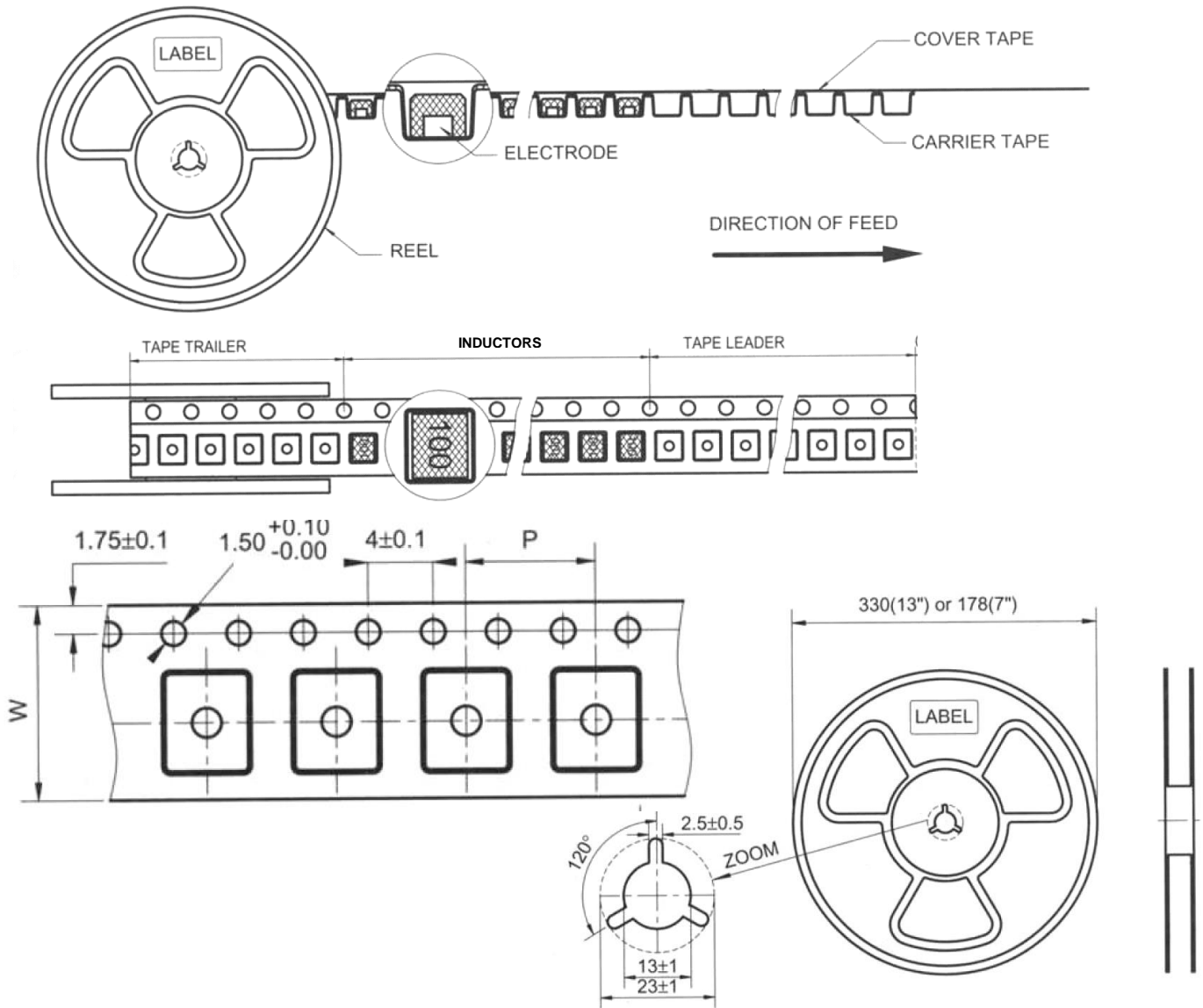
Part No	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
PS3316□T1R0	1.0	M	100KHz, 0.1V	0.021	5.60
PS3316□T1R5	1.5	M	100KHz, 0.1V	0.022	5.20
PS3316□T2R2	2.2	M	100KHz, 0.1V	0.032	5.00
PS3316□T3R3	3.3	M	100KHz, 0.1V	0.039	3.90
PS3316□T4R7	4.7	M	100KHz, 0.1V	0.054	3.20
PS3316□T6R8	6.8	M	100KHz, 0.1V	0.075	2.80
PS3316□T100	10	M	100KHz, 0.1V	0.101	2.40
PS3316□T120	12	M	100KHz, 0.1V	0.140	2.10
PS3316□T150	15	M	100KHz, 0.1V	0.150	2.00
PS3316□T180	18	M	100KHz, 0.1V	0.200	1.70
PS3316□T220	22	M	100KHz, 0.1V	0.207	1.60
PS3316□T270	27	M	100KHz, 0.1V	0.300	1.50
PS3316□T330	33	M	100KHz, 0.1V	0.334	1.40
PS3316□T390	39	M	100KHz, 0.1V	0.460	1.10
PS3316□T470	47	M	100KHz, 0.1V	0.472	1.00
PS3316□T680	68	M	100KHz, 0.1V	0.660	0.90
PS3316□T101	100	M	100KHz, 0.1V	1.110	0.80
PS3316□T121	120	M	100KHz, 0.1V	1.300	0.62
PS3316□T151	150	M	100KHz, 0.1V	1.550	0.60
PS3316□T221	220	M, K	100KHz, 0.1V	2.000	0.50
PS3316□T271	270	M	100KHz, 0.1V	4.600	0.42
PS3316□T331	330	M	100KHz, 0.1V	5.600	0.35
PS3316□T391	390	M	100KHz, 0.1V	6.600	0.34
PS3316□T471	470	M	100KHz, 0.1V	7.600	0.33
PS3316□T681	680	M, K	100KHz, 0.1V	9.000	0.31
PS3316□T102	1000	M	100KHz, 0.1V	8.300	0.32

**■Electrical Characteristics**

PS5022 Type(□:Tolerance):

Part No	L ( $\mu$ H)	Tolerance	Test Condition	DCR ( $\Omega$ ) max.	IDC (A) max.
PS5022□T1R0	1.0	M	100KHz, 0.1V	0.024	20.00
PS5022□T2R2	2.2	M	100KHz, 0.1V	0.026	11.00
PS5022□T3R3	3.3	M	100KHz, 0.1V	0.029	10.00
PS5022□T3R9	3.9	M	100KHz, 0.1V	0.030	8.50
PS5022□T4R7	4.7	M	100KHz, 0.1V	0.032	8.40
PS5022□T5R6	5.6	M	100KHz, 0.1V	0.034	8.30
PS5022□T6R8	6.8	M	100KHz, 0.1V	0.036	8.20
PS5022□T8R2	8.2	M	100KHz, 0.1V	0.038	8.10
PS5022□T100	10	M	100KHz, 0.1V	0.040	8.00
PS5022□T120	12	M	100KHz, 0.1V	0.046	7.10
PS5022□T150	15	M	100KHz, 0.1V	0.048	7.00
PS5022□T180	18	M	100KHz, 0.1V	0.056	6.10
PS5022□T220	22	M	100KHz, 0.1V	0.059	6.00
PS5022□T270	27	M	100KHz, 0.1V	0.066	5.10
PS5022□T330	33	M	100KHz, 0.1V	0.075	5.00
PS5022□T390	39	M	100KHz, 0.1V	0.092	4.10
PS5022□T470	47	M	100KHz, 0.1V	0.097	4.00
PS5022□T560	56	M	100KHz, 0.1V	0.132	3.10
PS5022□T680	68	M	100KHz, 0.1V	0.138	3.00
PS5022□T820	82	M	100KHz, 0.1V	0.202	2.50
PS5022□T101	100	M	100KHz, 0.1V	0.207	2.40
PS5022□T121	120	M	100KHz, 0.1V	0.286	2.20
PS5022□T151	150	M	100KHz, 0.1V	0.293	2.10
PS5022□T181	180	M	100KHz, 0.1V	0.420	1.91
PS5022□T221	220	M	100KHz, 0.1V	0.470	1.90
PS5022□T271	270	M	100KHz, 0.1V	0.720	1.12
PS5022□T331	330	M	100KHz, 0.1V	0.780	1.10
PS5022□T391	390	M	100KHz, 0.1V	1.020	1.10
PS5022□T471	470	M	100KHz, 0.1V	1.080	1.10
PS5022□T561	560	M	100KHz, 0.1V	1.320	0.97
PS5022□T681	680	M	100KHz, 0.1V	1.400	0.96
PS5022□T821	820	M	100KHz, 0.1V	1.960	0.81
PS5022□T102	1000	M	100KHz, 0.1V	2.010	0.80

**■Tape and Reel specifications**



Unit: mm

Type	Tape size		Parts Per Reel
	W	P	13"
PS1608	16	8	2000
PS3316	24	12	1000
PS5022	32	20	250

**■ SMT Power Inductor Environmental Specifications**

General

Items	Specifications
Shelf Storage conditions	Temperature range: 15~28°C; Humidity: <80% relative humidity. Recommended product should be used within one year 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
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):

