

Data Sheet

Customer:

Product: Shielded SMD Power Inductor – PS Series

Sizes.: 1608/3316/5022

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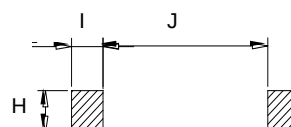
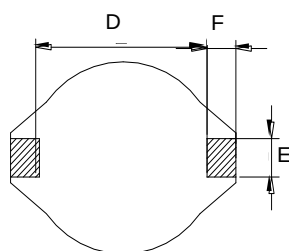
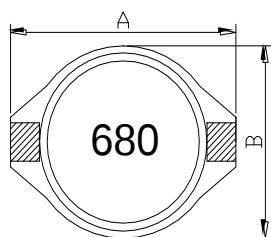
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Shielded SMD Power Inductor



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 1.0~10000μH 1.4~0.02A
- PS3316 1.0~1000μH 5.6~0.32A
- PS5022 1.0~1000μH 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 Δ 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: 6.60×4.45×2.92 3316: 12.95×9.4×5.21 5022: 18.54×15.24×7.62	M: ±20%	T: Tape and Reel	1R0: 1.0μH 470: 47μH 101: 100μH

■Electrical Characteristics

PS1608 Type

Codes	L (μ H)	Tolerance	Test Condition		DCR (Ω) max.	SRF ref (MHz)	Q min.	IDC (A) max.	
			L	Q				I sat	I rms
1R0	1.0	M	100KHz, 0.1V	200KHz, 0.1V	0.040	250	30	1.40	3.00
1R5	1.5	M	100KHz, 0.1V	200KHz, 0.1V	0.045	125	30	0.93	2.30
2R2	2.2	M	100KHz, 0.1V	200KHz, 0.1V	0.050	120	40	0.92	1.80
3R3	3.3	M	100KHz, 0.1V	200KHz, 0.1V	0.055	120	40	0.75	1.60
4R7	4.7	M	100KHz, 0.1V	200KHz, 0.1V	0.060	105	40	0.58	1.40
6R8	6.8	M	100KHz, 0.1V	200KHz, 0.1V	0.065	50	40	0.58	1.20
100	10	M	100KHz, 0.1V	200KHz, 0.1V	0.075	38	40	0.37	1.00
150	15	M	100KHz, 0.1V	100KHz, 0.1V	0.090	33	40	0.31	0.80
220	22	M	100KHz, 0.1V	100KHz, 0.1V	0.11	25	40	0.30	0.70
330	33	M	100KHz, 0.1V	100KHz, 0.1V	0.19	20	40	0.24	0.60
470	47	M	100KHz, 0.1V	100KHz, 0.1V	0.23	20	40	0.24	0.50
680	68	M	100KHz, 0.1V	100KHz, 0.1V	0.29	15	40	0.17	0.40
101	100	M	100KHz, 0.1V	100KHz, 0.1V	0.48	10	40	0.13	0.30
151	150	M	100KHz, 0.1V	100KHz, 0.1V	0.59	9	40	0.10	0.26
221	220	M	100KHz, 0.1V	100KHz, 0.1V	0.90	6	40	0.10	0.22
331	330	M	100KHz, 0.1V	100KHz, 0.1V	1.40	5	40	0.07	0.20
471	470	M	100KHz, 0.1V	100KHz, 0.1V	1.80	4	40	0.06	0.19
681	680	M	100KHz, 0.1V	100KHz, 0.1V	2.20	3	40	0.06	0.18
102	1000	M	100KHz, 0.1V	100KHz, 0.1V	3.40	2	40	0.05	0.15
152	1500	M	100KHz, 0.1V	100KHz, 0.1V	4.20	2	50	0.04	0.12
222	2200	M	100KHz, 0.1V	100KHz, 0.1V	8.50	2	50	0.03	0.10
332	3300	M	100KHz, 0.1V	100KHz, 0.1V	11.0	1	50	0.02	0.08
472	4700	M	100KHz, 0.1V	100KHz, 0.1V	13.9	1	50	0.02	0.06
682	6800	M	100KHz, 0.1V	100KHz, 0.1V	25.0	1	50	0.02	0.04
103	10000	M	100KHz, 0.1V	100KHz, 0.1V	32.8	0.8	50	0.02	0.02

PS3316 Type

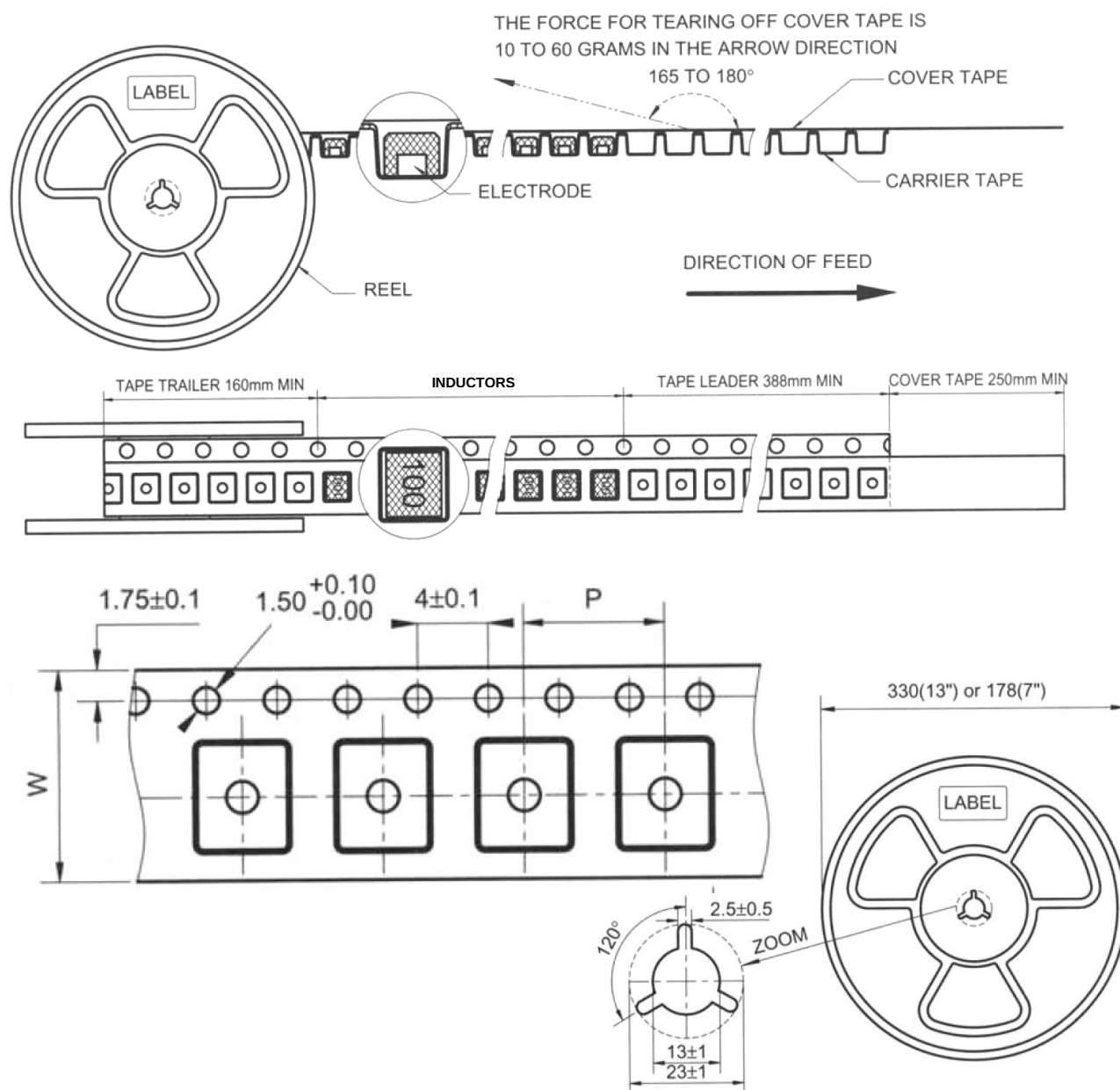
Codes	L (μ H)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
1R0	1.0	M	100KHz, 0.1V	0.021	5.60
1R5	1.5	M	100KHz, 0.1V	0.022	5.20
2R2	2.2	M	100KHz, 0.1V	0.032	5.00
3R3	3.3	M	100KHz, 0.1V	0.039	3.90
4R7	4.7	M	100KHz, 0.1V	0.054	3.20
6R8	6.8	M	100KHz, 0.1V	0.075	2.80
100	10	M	100KHz, 0.1V	0.101	2.40
120	12	M	100KHz, 0.1V	0.140	2.10
150	15	M	100KHz, 0.1V	0.150	2.00
180	18	M	100KHz, 0.1V	0.200	1.70
220	22	M	100KHz, 0.1V	0.207	1.60
270	27	M	100KHz, 0.1V	0.300	1.50
330	33	M	100KHz, 0.1V	0.334	1.40
390	39	M	100KHz, 0.1V	0.460	1.10
470	47	M	100KHz, 0.1V	0.472	1.00
680	68	M	100KHz, 0.1V	0.660	0.90
101	100	M	100KHz, 0.1V	1.110	0.80
121	120	M	100KHz, 0.1V	1.300	0.62
151	150	M	100KHz, 0.1V	1.550	0.60
221	220	M	100KHz, 0.1V	2.000	0.50
271	270	M	100KHz, 0.1V	4.600	0.42
331	330	M	100KHz, 0.1V	5.600	0.35
391	390	M	100KHz, 0.1V	6.600	0.34
471	470	M	100KHz, 0.1V	7.600	0.33
681	680	M	100KHz, 0.1V	9.000	0.31
102	1000	M	100KHz, 0.1V	8.300	0.32

■Electrical Characteristics

PS5022 Type

Codes	L (μ H)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
1R0	1.0	M	100KHz, 0.1V	0.024	20.00
2R2	2.2	M	100KHz, 0.1V	0.026	11.00
3R3	3.3	M	100KHz, 0.1V	0.029	10.00
3R9	3.9	M	100KHz, 0.1V	0.030	8.50
4R7	4.7	M	100KHz, 0.1V	0.032	8.40
5R6	5.6	M	100KHz, 0.1V	0.034	8.30
6R8	6.8	M	100KHz, 0.1V	0.036	8.20
8R2	8.2	M	100KHz, 0.1V	0.038	8.10
100	10	M	100KHz, 0.1V	0.040	8.00
120	12	M	100KHz, 0.1V	0.046	7.10
150	15	M	100KHz, 0.1V	0.048	7.00
180	18	M	100KHz, 0.1V	0.056	6.10
220	22	M	100KHz, 0.1V	0.059	6.00
270	27	M	100KHz, 0.1V	0.066	5.10
330	33	M	100KHz, 0.1V	0.075	5.00
390	39	M	100KHz, 0.1V	0.092	4.10
470	47	M	100KHz, 0.1V	0.097	4.00
560	56	M	100KHz, 0.1V	0.132	3.10
680	68	M	100KHz, 0.1V	0.138	3.00
820	82	M	100KHz, 0.1V	0.202	2.50
101	100	M	100KHz, 0.1V	0.207	2.40
121	120	M	100KHz, 0.1V	0.286	2.20
151	150	M	100KHz, 0.1V	0.293	2.10
181	180	M	100KHz, 0.1V	0.420	1.91
221	220	M	100KHz, 0.1V	0.470	1.90
271	270	M	100KHz, 0.1V	0.720	1.12
331	330	M	100KHz, 0.1V	0.780	1.10
391	390	M	100KHz, 0.1V	1.020	1.10
471	470	M	100KHz, 0.1V	1.080	1.10
561	560	M	100KHz, 0.1V	1.320	0.97
681	680	M	100KHz, 0.1V	1.400	0.96
821	820	M	100KHz, 0.1V	1.960	0.81
102	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. $\Delta L/L \leq 10\%$	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):

