

Data Sheet

Customer :

Product : SMD Power Inductor - CPS Series

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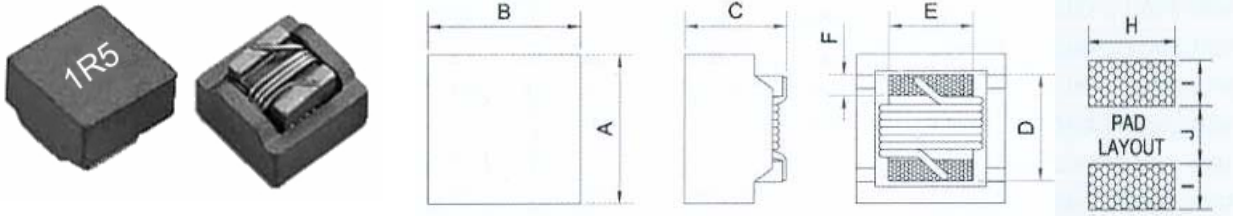
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SMD Power Inductor—CPS Series



Dimensions

Unit: mm

Type	A max.	B max.	C max.	D	E	F	H	I	J
CPS1008	3.81	3.78	2.74	2.52	2.13	0.50	2.54	1.02	1.27

Features

- Miniature SMD power chip inductor
- Economical alternative to large power inductor
- Ideal for use at switching frequencies for 50KHz to 1MHz
- Magnetically shielded against radiation

Applications

- Personal Computers, HDDs.
- Communication Products
- Other Various Electronic Appliances.

Inductance and rated current ranges

- CPS1008 1.0~1000 μ H 3.00~0.10A
- Test equipment:
L: HP4284A LCR meter
Q&SRF: HP4291B RF Impedance Analyzer
DCR: Milli-ohm meter
- Electrical specifications at 25°C

Characteristics

- Rated DC Current(I sat) : The current when the inductance becomes 10% lower than its initial value. (Ta=25°C)
- Rated DC Current(I rms) : The actual current when the temperature of coil becomes $\Delta 40^{\circ}\text{C}$. (Ta=25°C)
- Operating temperature : -40~85°C.

Product Identification

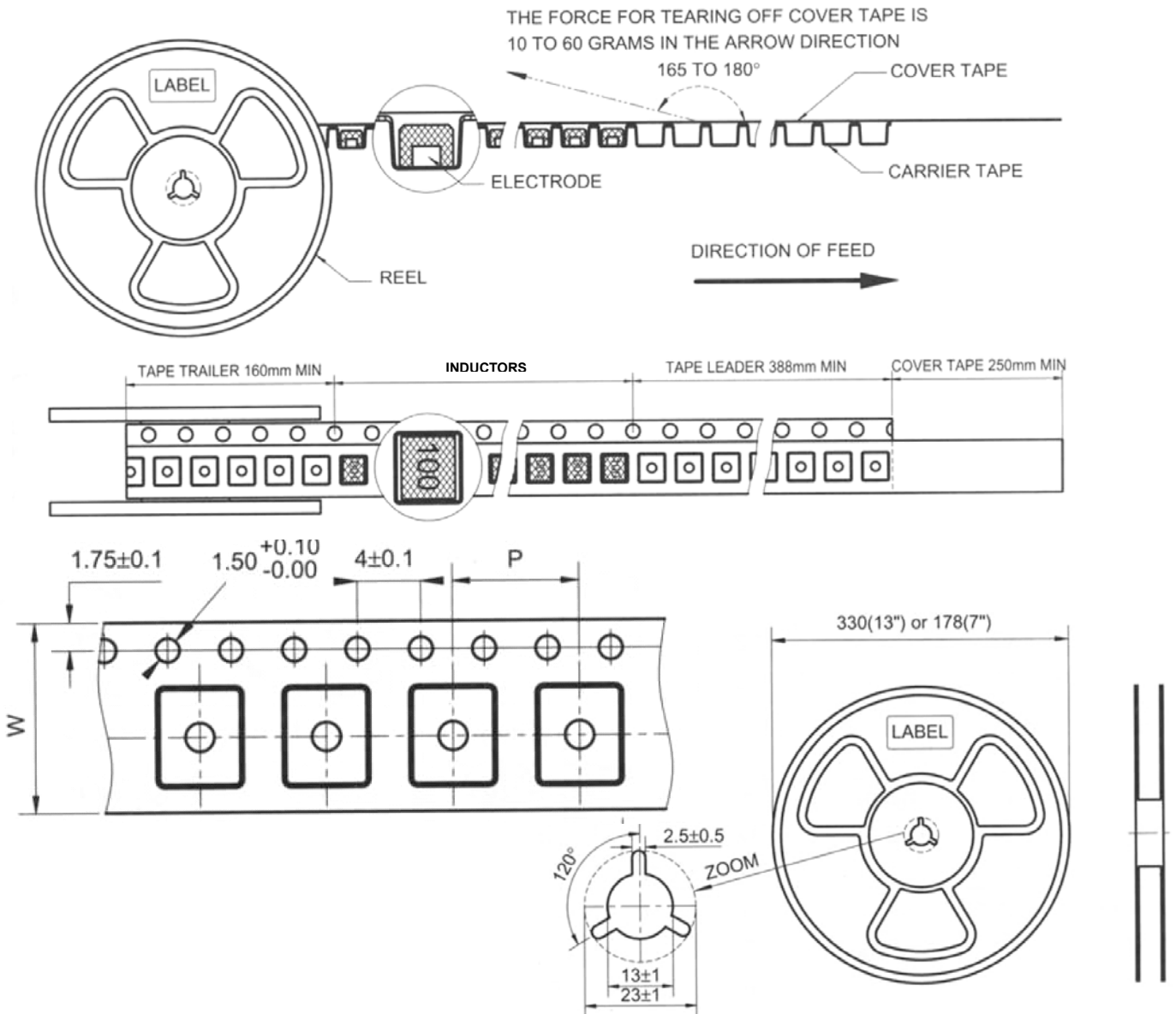
CPS	1008	K	T	101
Product Type	Dimensions (AxBxC)	Inductor Tolerance	Packaging Style	Inductance
	1008: 3.81x3.78x2.74	K: $\pm 10\%$	T: Tape and Reel	1R1: 1.1 μ H 470: 47 μ H 101: 100 μ H

■ Electrical Characteristics

CPS1008 Type

Codes	L (μ H)	Tolerance	Test Condition		Q min.	DCR (Ω) max.	SRF (MHz) min.	IDC (A) max.	
			L	Q				I sat	I rms
1R0	1.0	K	100KHz, 0.1V	1MHz, 0.1V	35	0.05	387	3.00	2.00
1R5	1.5	K	100KHz, 0.1V	1MHz, 0.1V	35	0.06	276	2.80	2.00
1R8	1.8	K	100KHz, 0.1V	1MHz, 0.1V	35	0.09	253	2.10	1.90
2R2	2.2	K	100KHz, 0.1V	1MHz, 0.1V	36	0.10	228	2.00	1.90
2R7	2.7	K	100KHz, 0.1V	1MHz, 0.1V	38	0.14	207	1.30	1.60
3R3	3.3	K	100KHz, 0.1V	1MHz, 0.1V	26	0.84	199	1.10	1.20
3R9	3.9	K	100KHz, 0.1V	1MHz, 0.1V	38	0.26	185	1.20	1.20
4R7	4.7	K	100KHz, 0.1V	1MHz, 0.1V	38	0.35	160	1.00	1.10
5R6	5.6	K	100KHz, 0.1V	1MHz, 0.1V	38	0.36	150	1.00	0.90
6R8	6.8	K	100KHz, 0.1V	1MHz, 0.1V	38	0.58	120	0.84	0.80
100	10	K	100KHz, 0.1V	1MHz, 0.1V	38	0.92	105	0.78	0.72
150	15	K	100KHz, 0.1V	1MHz, 0.1V	38	1.15	35	0.70	0.60
220	22	K	100KHz, 0.1V	1MHz, 0.1V	40	1.40	26	0.65	0.55
330	33	K	100KHz, 0.1V	1MHz, 0.1V	45	1.61	20	0.51	0.50
390	39	K	100KHz, 0.1V	1MHz, 0.1V	45	1.85	16	0.45	0.47
470	47	K	100KHz, 0.1V	1MHz, 0.1V	45	2.50	19	0.40	0.42
680	68	K	100KHz, 0.1V	1MHz, 0.1V	45	3.80	12	0.31	0.32
820	82	K	100KHz, 0.1V	1MHz, 0.1V	45	4.30	9.0	0.30	0.30
101	100	K	100KHz, 0.1V	1MHz, 0.1V	45	5.80	7.0	0.30	0.30
121	120	K	100KHz, 0.1V	1MHz, 0.1V	50	6.30	7.0	0.25	0.28
151	150	K	100KHz, 0.1V	1MHz, 0.1V	50	7.50	5.8	0.22	0.26
221	220	K	100KHz, 0.1V	1MHz, 0.1V	55	10.0	5.0	0.22	0.21
331	330	K	100KHz, 0.1V	1MHz, 0.1V	55	11.5	3.8	0.20	0.19
471	470	K	100KHz, 0.1V	1MHz, 0.1V	55	16.5	3.1	0.16	0.18
561	560	K	100KHz, 0.1V	1MHz, 0.1V	55	18.1	2.8	0.13	0.15
681	680	K	100KHz, 0.1V	1MHz, 0.1V	55	24.0	2.5	0.12	0.14
821	820	K	100KHz, 0.1V	1MHz, 0.1V	45	26.0	1.5	0.10	0.12
102	1000	K	100KHz, 0.1V	1MHz, 0.1V	45	29.0	2.0	0.10	0.11

■ Tape and Reel specifications



Unit: mm

Type	Tape size		Parts Per Reel
	W	P	7"
CPS1008	12	8	750

■ SMD Power Inductor Environmental Specifications

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.
Storage temperature range	Temperature range: -40°C to $+105^{\circ}\text{C}$.

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 ± 2 hours, Tested after 1hour at room temperature.
Low temperature Storage test		Temperature $-40\pm 2^{\circ}\text{C}$, Time: 48 ± 2 hours, Tested after 1hour at room temperature.
Humidity test		Temperature $40\pm 2^{\circ}\text{C}$, 90~95% relative humidity Time: 96 ± 2 hours, apply rated current, 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 $245\pm 5^{\circ}\text{C}$ for 3 seconds.
Heat endurance of Reflow soldering	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Refer to the reflow soldering condition. Go through 3 times.
Vibration test		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)

