SMD POWER INDUCTOR
- CS SERIES -

FEATURES

- With magnetically shielded against radiation
- CS1608 can help to achieve longer battery life significantly in handheld communication devices.
- CD3316/5022 designed for the higher current requirements of portable computers.
- CS1608 used ceramic base with gol=plating
- CS3316/5022 used LCP plastic base

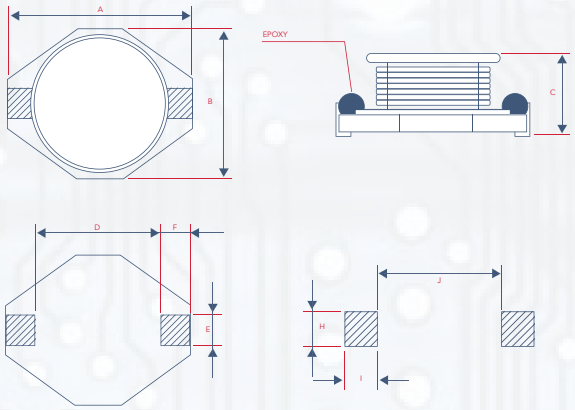
APPLICATIONS

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

CHARACTERISTICS

- Saturation Rated Current (IDC): The DC current when the inductance becomes 10% lower than its initial value. (Ta=25°C)
- Temperature Rise Current (I rms): The actual current when temperature of coil becomes Δ40°C. (Ta=25°C)
- Operating temperature range: -40~85°C

MECHANICAL DIMENSION



UNIT=mm

TYPE	A (MAX)	B (MAX)	C (MAX)	D	E	F	H	I	J
CS1608	6.60	4.45	2.92	4.32	1.27	1.02	3.56	1.40	4.06
CS3316	12.95	9.40	5.21	7.62	2.54	2.54	2.79	2.92	7.37
CS5022	18.54	15.24	7.62	12.70	2.54	2.54	2.79	2.92	12.45

INDUCTANCE AND RATED CURRENT RANGES

- Electrical specifications at 25°C

CS1608	1.0μH ~ 10000μH	1.4 ~ 0.02A
CS3316	1.0μH ~ 10000μH	5.6 ~ 0.32A
CS5022	1.0μH ~ 10000μH	20.0 ~ 0.80A

PART NUMBERING

CS	1608	M	101	T
PRODUCT TYPE	DIMENSIONS (AxBxC)	INDUCTOR TOLERANCE	PACKAGING STYLE	INDUCTANCE
	1608: 6.60x4.45x2.92 3316: 12.95x9.40x5.21 5022: 18.54x15.24x7.62	K: ±10% M: ±20%	1R1: 1.1μH 470: 47μH 101: 100μH	T: Tape & Reel

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ELECTRICAL CHARACTERISTICS

- CS1608 TYPE

CODES	L (μH)	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	100vKHz, 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	0.06
472	4700	M	100KHz, 0.1V	100KHz, 0.1V	13.9	1	50	0.02	0.04
682	6800	M	100KHz, 0.1V	100KHz, 0.1V	25.0	1	50	0.02	0.02
103	10000	M	100KHz, 0.1V	100KHz, 0.1V	32.8	0.8	50	0.02	0.08

ELECTRICAL CHARACTERISTICS

- CS5022 TYPE

CODES	L (µH)	TOLERANCE	TEST CONDITION	DCR (Ω) MAX	IDC (A) MAX.
1R0	1.0	M	100KHz, 0.1V	0.021	5.6
1R5	1.5	M	100KHz, 0.1V	0.022	5.2
2R2	2.2	M	100KHz, 0.1V	0.032	5.0
3R3	3.3	M	100KHz, 0.1V	0.039	3.9
4R7	4.7	M	100KHz, 0.1V	0.054	3.2
6R8	6.8	M	100KHz, 0.1V	0.075	2.8
100	10	M	100KHz, 0.1V	0.101	2.4
150	15	M	100KHz, 0.1V	0.150	2.0
220	22	M	100KHz, 0.1V	0.207	1.6
330	33	M	100KHz, 0.1V	0.334	1.4
470	47	M	100KHz, 0.1V	0.472	1.0
680	68	M	100KHz, 0.1V	0.660	0.9
101	100	M	100KHz, 0.1V	1.110	0.8
151	150	M	100KHz, 0.1V	1.550	0.6
221	220	M	100KHz, 0.1V	2.000	0.5
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, K	100KHz, 0.1V	9.000	0.31
102	1000	M	100KHz, 0.1V	8.300	0.32

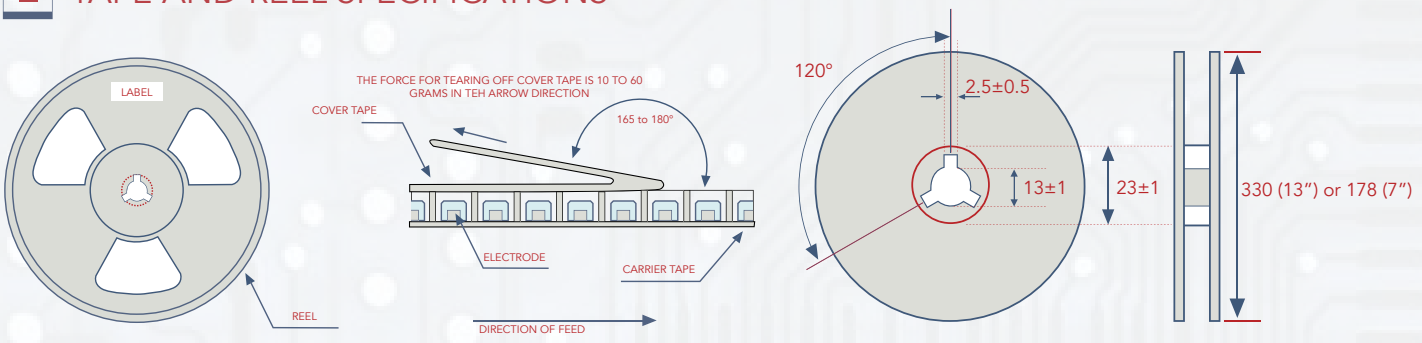
ELECTRICAL CHARACTERISTICS

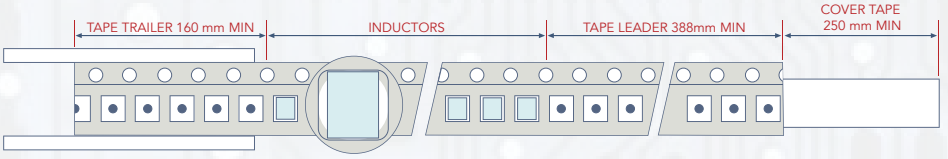
- CS3316 TYPE

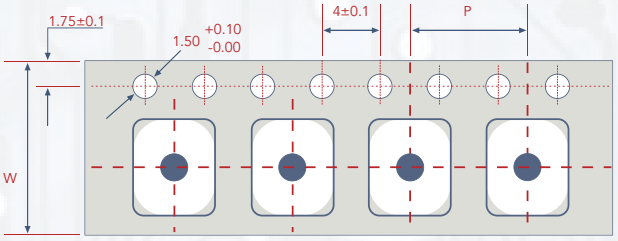
CODES	L (µH)	TOLERANCE	TEST CONDITION	DCR (Ω) MAX	IDC (A) MAX.
1R0	1.0	M	100KHz, 0.1V	20.00	0.024
2R2	2.2	M	100KHz, 0.1V	11.00	0.026
3R3	3.3	M	100KHz, 0.1V	10.00	0.029
3R9	3.9	M	100KHz, 0.1V	8.50	0.030
4R7	4.7	M	100KHz, 0.1V	8.40	0.032
5R6	5.6	M	100KHz, 0.1V	8.30	0.034
6R8	6.8	M	100KHz, 0.1V	8.20	0.036
8R2	8.2	M	100KHz, 0.1V	8.10	0.038
100	10	M	100KHz, 0.1V	8.00	0.040
120	12	M	100KHz, 0.1V	7.10	0.046
150	15	M	100KHz, 0.1V	7.00	0.048
180	18	M	100KHz, 0.1V	6.10	0.056
220	22	M	100KHz, 0.1V	6.00	0.059
330	33	M	100KHz, 0.1V	5.00	0.075
390	39	M	100KHz, 0.1V	4.10	0.092
470	47	M	100KHz, 0.1V	4.00	0.097
560	56	M	100KHz, 0.1V	3.10	0.132
680	68	M	100KHz, 0.1V	3.00	0.138
820	82	M	100KHz, 0.1V	2.50	0.202
101	100	M	100KHz, 0.1V	2.40	0.207
121	120	M	100KHz, 0.1V	2.20	0.286
151	150	M	100KHz, 0.1V	2.10	0.293
180	181	M	100KHz, 0.1V	1.91	0.420
221	220	M	100KHz, 0.1V	1.90	0.470
271	270	M	100KHz, 0.1V	1.12	0.720
331	330	M	100KHz, 0.1V	1.10	0.780
391	390	M	100KHz, 0.1V	1.10	1.020
471	470	M	100KHz, 0.1V	1.10	1.080
561	560	M	100KHz, 0.1V	0.97	1.320
681	680	M	100KHz, 0.1V	0.96	1.400
821	820	M	100KHz, 0.1V	0.81	1.960
102	1000	M	100KHz, 0.1V	0.80	2.010

RoHS

TAPE AND REEL SPECIFICATIONS







UNIT: mm

TYPE	TAPE SIZE		PARTS PER REEL
	W	P	13"
CS1608	16	8	2000
CS3316	24	12	1000
CS5022	32	20	250

SMT POWER INDUCTOR ENVIRONMENTAL SPECIFICATIONS

- General

ITEMS	SPECIFICATIONS
Shelf Storage Conditions	Temperature range: 15 ~28°C; Humidity: <80% relative 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. Δ L/L ≤ 10%	Temperature 85±2°C Time: 48±2 hours, Tested after 1 hour at room temperature.
Low Temperature Storage Test		Temperature -25±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 30 minutes then 25°C 10 minutes last 85°C 30 minutes, as 1 cycle. Go through 5 cycles. Tested after 1 hour at room temperature.

SMT POWER INDUCTOR ENVIRONMENTAL SPECIFICATIONS

- 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 preh eated for about 2 minutes over temperature of 130~150°C. Immersing to 260 ±5°C for 10 seconds.
Vibration Test		Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.
Shock Resistance	No case deformation or change in appearance. Δ L/L ≤ 10%	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):