

Unshielded and Shielded Power Inductor-SD Series



FEATURES

- ROHS, Halogen free and REACH Compliance.
- Magnetic shielded and unshielded, Miniature surface mount design.
- High current rating, low D.C Resistance.
- Various package size and wide inductance range.

APPLICATIONS

Portable computers, LED televisions, DC/DC converter and power supply for VTRs.

PRODUCT IDENTIFICATION



01 Type	
ZSD	SMD Power Inductor

02 External Dimensions (LxW)(mm)	
0402	6.6x 4.45
0804	12.95x 9.40
1306	18.54x 15.24

03 Shape	
D	Unshielded
T	Shielded

04 Nominal Inductance	
Example	Nominal value
4R7	4.7uH
470	47uH
471	470uH

05 Tolerance	
J	±5%
K	±10%
M	±20%

SHAPE AND DIMENSIONS

Fig 1(ZSD0402D)

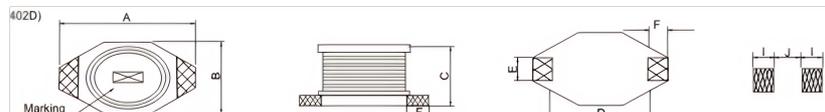


Fig 2(ZSD0402T)

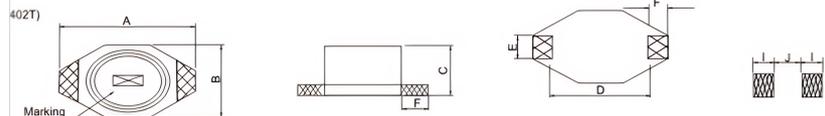


Fig 3(ZSD0804D)

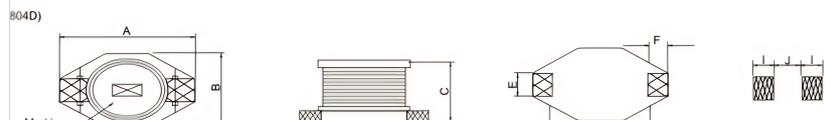


Fig 4(ZSD0804T)

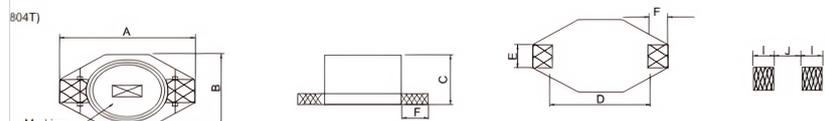


Fig 5(ZSD1306D)

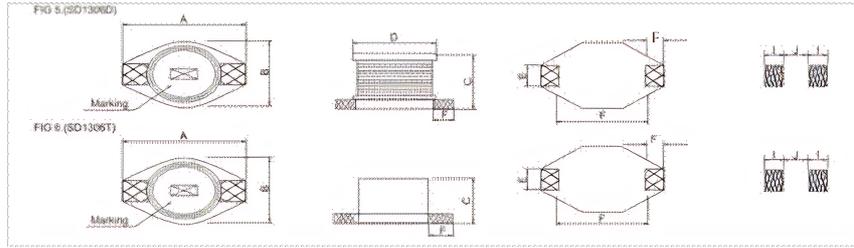
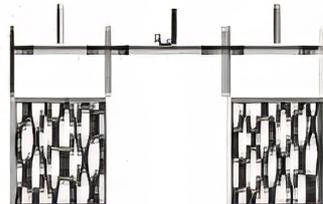


Fig 6(ZSD1306T)

Part Number	Dimensions(mm)								
	A(Max)	B(Max)	C(Max)	D	E	F	I	J	Fig
ZSD0402D	6.6	4.45	2.92	4.32	1.27	1.02	1.40	4.08	1
ZSD0402T	6.6	4.45	2.92	4.32	1.27	1.02	1.40	4.08	2
ZSD0804D	12.95	9.40	5.21	7.62	2.54	2.54	2.92	7.37	3
ZSD0804T	12.95	9.40	5.21	7.62	2.54	2.54	2.92	7.37	4
ZSD1306D	18.54	15.24	7.11	12.7	2.54	2.54	2.92	12.45	5
ZSD1306T	18.54	15.24	7.11	12.70	2.54	2.54	2.92	12.45	6

RECOMMENDED PC BOARD PATTERN



Part Number	Dimensions(mm)	
	G	H
ZSD0402D	1.40	4.08
ZSD0402T	1.40	4.08
ZSD0804D	2.92	7.37
ZSD0804T	2.92	7.37
ZSD1306D	2.92	12.45
ZSD1306T	2.92	12.45

SPECIFICATIONS

● ZSD0402D TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSD0402D-1R0	1.0	K、M	100/0.25	0.050	2900
ZSD0402D-1R5	1.5		100/0.25	0.055	2600
ZSD0402D-2R2	2.2		100/0.25	0.070	2300
ZSD0402D-3R3	3.3		100/0.25	0.080	2000
ZSD0402D-4R7	4.7		100/0.25	0.090	1500
ZSD0402D-6R8	6.8		100/0.25	0.130	1200
ZSD0402D-100	10		100/0.25	0.160	1100
ZSD0402D-150	15		100/0.25	0.230	900
ZSD0402D-220	22		100/0.25	0.370	700
ZSD0402D-330	33		100/0.25	0.510	580
ZSD0402D-470	47		100/0.25	0.760	500
ZSD0402D-680	68		100/0.25	1.10	400
ZSD0402D-101	100		100/0.25	2.00	310
ZSD0402D-151	150		100/0.25	3.50	270
ZSD0402D-221	220		100/0.25	4.00	220
ZSD0402D-331	330		100/0.25	5.50	180
ZSD0402D-471	470		100/0.25	7.50	160
ZSD0402D-681	680		100/0.25	15.0	140
ZSD0402D-102	1000		100/0.25	20.0	100

Note: When ordering, please specify tolerance code. Tolerance: K: $\pm 10\%$, M: $\pm 20\%$;

1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current

● ZSD0402T TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSD0402T-1R0	1.0	K、M	100/0.25	0.040	1400
ZSD0402T-1R5	1.5		100/0.25	0.045	1300
ZSD0402T-2R2	2.2		100/0.25	0.050	1100



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Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSD0402T-3R3	3.3	K、M	100/0.25	0.055	1000
ZSD0402T-4R7	4.7		100/0.25	0.065	760
ZSD0402T-6R8	6.8		100/0.25	0.090	630
ZSD0402T-100	10		100/0.25	0.110	580
ZSD0402T-150	15		100/0.25	0.150	500
ZSD0402T-220	22		100/0.25	0.250	450
ZSD0402T-330	33		100/0.25	0.350	340
ZSD0402T-470	47		100/0.25	0.450	300
ZSD0402T-680	68		100/0.25	0.550	250
ZSD0402T-101	100		100/0.25	0.765	230
ZSD0402T-151	150		100/0.25	6.00	200
ZSD0402T-221	220		100/0.25	7.00	170
ZSD0402T-331	330		100/0.25	10.0	150
ZSD0402T-471	470		100/0.25	15.0	120
ZSD0402T-681	680		100/0.25	20.0	100
ZSD0402T-102	1000		100/0.25	25.0	70

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%, M: ±20%;

1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current

● ZSD0804D TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSD0804D-1R0	1.0	K、M	100/0.25	0.009	9000
ZSD0804D-1R5	1.5		100/0.25	0.010	8000
ZSD0804D-2R2	2.2		100/0.25	0.012	7000
ZSD0804D-3R3	3.3		100/0.25	0.015	6400
ZSD0804D-4R7	4.7		100/0.25	0.018	5400
ZSD0804D-6R8	6.8		100/0.25	0.027	4600
ZSD0804D-100	10		100/0.25	0.038	3800
ZSD0804D-150	15		100/0.25	0.060	3000



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Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSD0804D-220	22	K、M	100/0.25	0.085	2600
ZSD0804D-330	33		100/0.25	0.100	2000
ZSD0804D-470	47		100/0.25	0.140	1600
ZSD0804D-680	68		100/0.25	0.200	1400
ZSD0804D-101	100		100/0.25	0.280	1200
ZSD0804D-151	150		100/0.25	0.500	1000
ZSD0804D-221	220		100/0.25	0.610	800
ZSD0804D-331	330		100/0.25	1.02	600
ZSD0804D-471	470		100/0.25	1.27	500
ZSD0804D-681	680		100/0.25	2.02	400
ZSD0804D-102	1000		100/0.25	3.00	300

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%, M: ±20%;

1. Operating temperature range -40 -125°C
2. Isat for Inductance drop 30% from its value without current

● ZSD0804T TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSD0804T-1R0	1.0	K、M	100/0.25	0.021	5600
ZSD0804T-1R5	1.5		100/0.25	0.022	5200
ZSD0804T-2R2	2.2		100/0.25	0.032	5000
ZSD0804T-3R3	3.3		100/0.25	0.039	3900
ZSD0804T-4R7	4.7		100/0.25	0.054	3200
ZSD0804T-6R8	6.8		100/0.25	0.075	2800
ZSD0804T-100	10		100/0.25	0.101	2400
ZSD0804T-150	15		100/0.25	0.150	2000
ZSD0804T-220	22		100/0.25	0.207	1600
ZSD0804T-330	33		100/0.25	0.334	1400
ZSD0804T-470	47		100/0.25	0.472	1000

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%, M: ±20%;

1. Operating temperature range -40 -125°C
2. Isat for Inductance drop 30% from its value without current



● ZSD1306D TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSD1306D-1R0	1.0	K、M	100/0.25	0.009	20000
ZSD1306D-2R2	2.2		100/0.25	0.014	16000
ZSD1306D-3R3	3.3		100/0.25	0.015	14000
ZSD1306D-5R6	5.6		100/0.25	0.020	12000
ZSD1306D-100	10		100/0.25	0.031	10000
ZSD1306D-150	15		100/0.25	0.036	8000
ZSD1306D-220	22		100/0.25	0.047	7000
ZSD1306D-330	33		100/0.25	0.066	5500
ZSD1306D-470	47		100/0.25	0.086	4500
ZSD1306D-680	68		100/0.25	0.130	3500
ZSD1306D-101	100		100/0.25	0.190	3000
ZSD1306D-151	150		100/0.25	0.320	2600
ZSD1306D-221	220		100/0.25	0.380	2400
ZSD1306D-331	330		100/0.25	0.560	1900
ZSD1306D-471	470		100/0.25	0.850	1400
ZSD1306D-681	680		100/0.25	1.10	1200
ZSD1306D-102	1000		100/0.25	1.80	1000
ZSD1306D-202	2000		100/0.25	4.50	300

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%、M: ±20%;

1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current

● ZSD1306T TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSD1306T-100	10	K、M	100/0.25	0.040	8000
ZSD1306T-150	15		100/0.25	0.048	7000
ZSD1306T-220	22		100/0.25	0.059	6000
ZSD1306T-330	33		100/0.25	0.075	5000
ZSD1306T-470	47		100/0.25	0.097	4000
ZSD1306T-680	68		100/0.25	0.138	3000



Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSD1306T-101	100	K、M	100/0.25	0.207	2400
ZSD1306T-151	150		100/0.25	0.293	2100
ZSD1306T-221	220		100/0.25	0.470	1900
ZSD1306T-331	330		100/0.25	0.780	1100
ZSD1306T-471	470		100/0.25	1.08	1000
ZSD1306T-681	680		100/0.25	1.40	960
ZSD1306T-102	1000		100/0.25	2.01	800

Note: When ordering, please specify tolerance code. Tolerance: K: ±10%, M: ±20%;

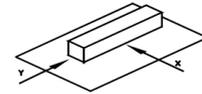
1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current

DETAIL ELECTRICAL CHARACTERISTICS

1. Operating temperature range: -40 to + 105°C(Includes temperature when the coil is heated) .
2. External appearance: On visual inspection, the coil has no external defects.
3. Terminal strength: After soldering. Between copper plate and terminals of coil. Push in two directions of X.Y

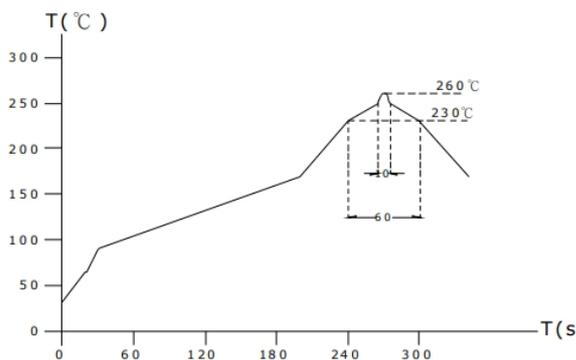
withstanding at below conditions.



Terminal should not peel off. (refer to figure at right) 5. 0N 60 sec.

4. Insulating resistance: Over 100MΩ at 100V D.C. between coil and core.
5. Dielectric strength: No dielectric breakdown at 100V D.C. for 1 minute between coil and core.
6. Temperature characteristics: Inductance coefficient $(0\sim 2,000)\times 10^{-6}/^{\circ}\text{C}$ (-25~+80°C degree Celsius), inductance deviation within $\pm 5.0\%$, after 96 hours.
7. Humidity characteristics(Moisture Resistance): Inductance deviation within $\pm 5\%$, after 96 hours in 90~95% relative humidity at $40 \pm 2^{\circ}\text{C}$ and 1 hour drying under normal condition.
8. Vibration resistance: Inductance deviation within $\pm 5\%$, after vibration for 1 hour. In each of three orientations at sweep vibration (10~55~10 Hz) with 1.5mm P-P amplitudes.
9. Shock resistance: Inductance deviation within $\pm 5\%$, after being dropped once with 981m/s² (100G) shock attitude upon a rubber block method shock testing machine, in three different orientations.
10. Resistance to Soldering Heat: 260°C, 10 seconds(See attached recommend reflow) .
11. Storage condition: Temperature Range: 0°C ~ 35°C; -40°C ~ 105°C (after PCB), Humidity Range: 50% ~ 70% RH.
12. Use components within 12 months. If 12 months or more have elapsed, check solderability before use.
13. Reflow profile recommend:

Lead-free heat endurance test



Lead-free the recommended reflow condition

