

Unshielded Power Inductor-ZSM Series

FEATURES

- ROHS, Halogen free and REACH Compliance.
- Unshielded power inductor.
- High current rating, Large terminal surface for good PCB bonding.
- Various package size and wide inductance range.



APPLICATIONS

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

PRODUCT IDENTIFICATION

01

ZSM

02

5845

03

3R3

04

K

01

TyPe	
ZSM	Unshielded Power Inductor

05

Tolerance	
J	±5%
K	±10%
M	±20%

02

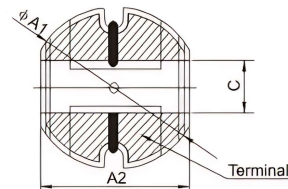
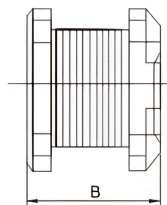
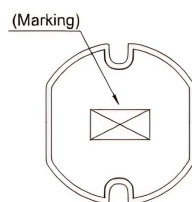
External Dimensions (LxW)(mm)	
3511	3.5x 1.1
3516	3.5x 1.6
3521	3.5x 2.1
4520	4.5x 2.0
4532	4.5x 3.2
5830	5.8x 3.0
5845	5.8x 4.5
7835	7.8x 3.5
7850	7.8x 5.0
1040	10.0x 4.0
1054	10.0x 5.4
1070	10.0x 7.0
1082	10.0x 8.2

04

Nominal Inductance	
Example	Nominal value
3R3	3.3uH
330	33uH
331	330uH
332	3300uH

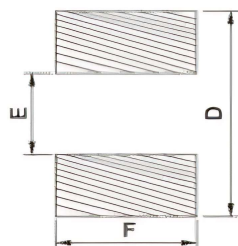
SHADE AND DIMENSIONS

SHAPE AND DIMENSIONS



Part Number	Dimensions(mm)			
	$\Phi A1$	A2	B	C(REF)
ZSM3511	3.5±0.2	3.0±0.2	1.1±0.3	0.8
ZSM3516	3.5±0.2	3.0±0.2	1.6±0.3	0.8
ZSM3521	3.5±0.2	3.0±0.2	2.1±0.3	0.8
ZSM4520	4.5±0.2	4.0±0.2	2.0±0.3	1.2
ZSM4532	4.5±0.2	4.0±0.2	3.2±0.3	1.2
ZSM5830	5.8±0.2	5.2±0.2	3.0±0.3	1.5
ZSM5845	5.8±0.2	5.2±0.2	4.5±0.3	1.5
ZSM7835	7.8±0.2	7.0±0.2	3.5±0.3	2.1
ZSM7850	7.8±0.2	7.0±0.2	5.0±0.3	2.1
ZSM1040	10.0±0.2	9.0±0.2	4.0±0.3	2.5
ZSM1054	10.0±0.2	9.0±0.2	5.4±0.3	2.5
ZSM1070	10.0±0.2	9.0±0.2	7.0±0.3	2.5
ZSM1082	10.0±0.2	9.0±0.2	8.2±0.3	2.5

RECOMMENDED PC BOARD PATTERN



Part Number	Dimensions(mm)		
	D	E	F
ZSM3511	3.9±0.2	1.0±0.2	3.4±0.2
ZSM3516	3.9±0.2	1.0±0.2	3.4±0.2
ZSM3521	3.9±0.2	1.0±0.2	3.4±0.2
ZSM4520	4.9±0.2	1.0±0.2	4.4±0.2
ZSM4532	4.9±0.2	1.0±0.2	4.4±0.2
ZSM5830	6.2±0.2	1.2±0.2	5.4±0.2
ZSM5845	6.2±0.2	1.2±0.2	5.4±0.2
ZSM7835	8.2±0.2	1.8±0.2	7.2±0.2
ZSM7850	8.2±0.2	1.8±0.2	7.2±0.2
ZSM1040	10.4±0.2	2.3±0.2	9.2±0.2
ZSM1054	10.4±0.2	2.3±0.2	9.2±0.2
ZSM1070	10.4±0.2	2.3±0.2	9.2±0.2
ZSM1082	10.4±0.2	2.3±0.2	9.2±0.2

● ZSM7835 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSM7835-1R0	1.0	K、M	100/0.25	0.015	6500
ZSM7835-2R7	2.7		100/0.25	0.025	3800
ZSM7835-3R3	3.3		100/0.25	0.030	3500
ZSM7835-3R9	3.9		100/0.25	0.032	3000
ZSM7835-4R7	4.7		100/0.25	0.040	2800
ZSM7835-5R6	5.6		100/0.25	0.055	2600
ZSM7835-6R8	6.8		100/0.25	0.065	2400
ZSM7835-8R2	8.2		100/0.25	0.075	2000
ZSM7835-100	10		100/0.25	0.080	1900
ZSM7835-120	12		100/0.25	0.090	1700
ZSM7835-150	15		100/0.25	0.095	1500
ZSM7835-180	18		100/0.25	0.100	1400
ZSM7835-220	22		100/0.25	0.13	1200
ZSM7835-270	27		100/0.25	0.15	1100
ZSM7835-330	33		100/0.25	0.18	1000
ZSM7835-390	39		100/0.25	0.22	900
ZSM7835-470	47		100/0.25	0.25	850
ZSM7835-560	56		100/0.25	0.30	800
ZSM7835-680	68		100/0.25	0.33	700
ZSM7835-820	82		100/0.25	0.41	650
ZSM7835-101	100		100/0.25	0.48	600
ZSM7835-120	120		100/0.25	0.60	550
ZSM7835-151	150		100/0.25	0.75	500
ZSM7835-181	180		100/0.25	1.02	450
ZSM7835-221	220		100/0.25	1.2	400
ZSM7835-271	270		100/0.25	1.4	320
ZSM7835-331	330		100/0.25	1.7	280
ZSM7835-471	470		100/0.25	2.5	250
ZSM7835-561	560		100/0.25	3.0	240
ZSM7835-681	680		100/0.25	3.7	220
ZSM7835-821	820		100/0.25	4.3	200

● ZSM7850 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSM7850-1R0	1.0	K、M	100/0.25	0.030	6800
ZSM7850-1R8	1.8		100/0.25	0.035	5260
ZSM7850-2R7	2.7		100/0.25	0.040	4020
ZSM7850-3R3	3.3		100/0.25	0.045	3600
ZSM7850-3R9	3.9		100/0.25	0.050	3260
ZSM7850-4R7	4.7		100/0.25	0.055	2970
ZSM7850-5R6	5.6		100/0.25	0.060	2740
ZSM7850-6R8	6.8		100/0.25	0.065	2530
ZSM7850-8R2	8.2		100/0.25	0.070	2360
ZSM7850-100	10		100/0.25	0.075	2070
ZSM7850-120	12		100/0.25	0.080	1850
ZSM7850-150	15		100/0.25	0.090	1670
ZSM7850-180	18		100/0.25	0.100	1520
ZSM7850-220	22		100/0.25	0.110	1400
ZSM7850-270	27		100/0.25	0.120	1240
ZSM7850-330	33		100/0.25	0.130	1160
ZSM7850-390	39		100/0.25	0.160	1050
ZSM7850-470	47		100/0.25	0.196	960
ZSM7850-560	56		100/0.25	0.240	870
ZSM7850-680	68		100/0.25	0.280	790
ZSM7850-820	82		100/0.25	0.370	720
ZSM7850-101	100		100/0.25	0.430	650
ZSM7850-121	120		100/0.25	0.470	590
ZSM7850-151	150		100/0.25	0.640	530
ZSM7850-181	180		100/0.25	0.710	490
ZSM7850-221	220		100/0.25	0.960	440
ZSM7850-271	270		100/0.25	1.15	400
ZSM7850-331	330		100/0.25	1.30	360
ZSM7850-391	390		100/0.25	1.80	330
ZSM7850-471	470		100/0.25	2.00	300
ZSM7850-561	560		100/0.25	2.20	280

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSM7850-681	680	K	100/0.25	2.75	250
ZSM7850-821	820		100/0.25	3.10	230
ZSM7850-102	1000		100/0.25	3.85	200
ZSM7850-152	1500		100/0.25	5.20	180
ZSM7850-182	1800		100/0.25	7.00	160
ZSM7850-202	2000		100/0.25	7.00	160
ZSM7850-222	2200		100/0.25	8.30	150
ZSM7850-302	3000		100/0.25	8.90	150

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

● ZSM1040 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Rated Current Max (mA)
ZSM1040-1R0	1.0	K、M	100/0.25	0.015	7200
ZSM1040-1R8	1.8		100/0.25	0.020	4900
ZSM1040-2R7	2.7		100/0.25	0.025	4200
ZSM1040-3R3	3.3		100/0.25	0.030	3500
ZSM1040-3R9	3.9		100/0.25	0.032	3300
ZSM1040-4R7	4.7		100/0.25	0.035	3200
ZSM1040-5R6	5.6		100/0.25	0.040	2800
ZSM1040-6R8	6.8		100/0.25	0.046	2600
ZSM1040-8R2	8.2		100/0.25	0.052	2350
ZSM1040-100	10		100/0.25	0.071	2150
ZSM1040-120	12		100/0.25	0.076	2000
ZSM1040-150	15		100/0.25	0.090	1700
ZSM1040-180	18		100/0.25	0.089	1650
ZSM1040-220	22		100/0.25	0.10	1450
ZSM1040-270	27		100/0.25	0.12	1350
ZSM1040-330	33		100/0.25	0.13	1200
ZSM1040-390	39		100/0.25	0.16	1100
ZSM1040-470	47		100/0.25	0.19	1000

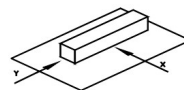


Specifications subject to change without notice. Please check our website for latest information.

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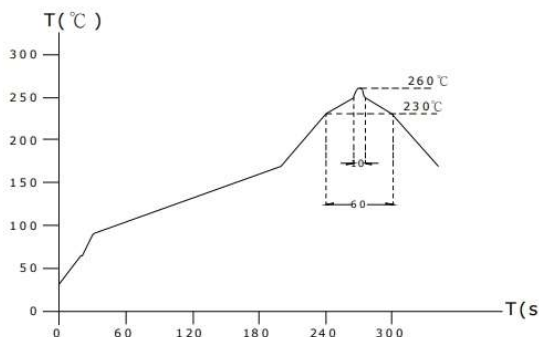
DETAIL ELECTRICAL CHARACTERISTICS

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

