

SPECIFICATIONS

Customer	
Product Name	Wire Wound SMD Power Inductor
Volume Part Number	VERH74 Series
Customer Part Number	H286

☒ New Released, ☐ Revised]

【This SPEC is total 8 pages.】

【ROHS Compliant Parts】

SPEC No: VERH74-2R2M

PART NO: FIA07400-05

Approved By	Checked By	Issued By

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【For Customer approval Only】

Date: _____

Qualification Status: ☐ Full ☐ Restricted ☐ Rejected

Approved By	Verified By	Re-checked By	Checked By

Comments: _____



【Version change history】

Rev.	Effective Date	Changed Contents	Change Reasons	Approved By
01	2022/11/21	New released	/	Luyong Han

Applications:

- Power supply for VTRs. LCD televisions.
- Notebook PCs, Portable communication equipment
- DC/DC converters, etc

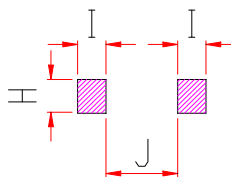
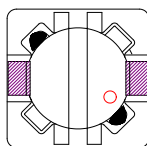
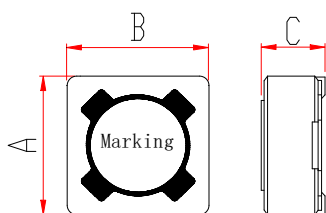
Features :

- High power , high saturation inductors
- with magnetic shield against radiation
- Directly connected electrode on ferrite core.
- Highly accurate dimensions for automatic mounting

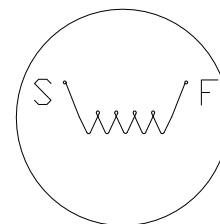
1. Product physical map



2. Dimension (mm)



PADLAYOUT



A	B	C	H	I	J
7.3 ± 0.3	7.3 ± 0.3	4.5Max	2.2	1.6	4.8

Characteristics :

- Saturation Current(Isat):The current when the inductance Becomes 25% lower than is initial value. (Ta=20℃).
- Temperature Rise Current(Irms):The current when the temperature of coil increases up to max. $\Delta T=40^{\circ}\text{C}$. (Ta=20℃)
- Operating temperature : $-30^{\circ}\text{C} \sim +105^{\circ}\text{C}$.
- Storage temperature range (packaging conditions): $-5^{\circ}\text{C} \sim +30^{\circ}\text{C}$ and RH 70% (Max.)

Test equipments :

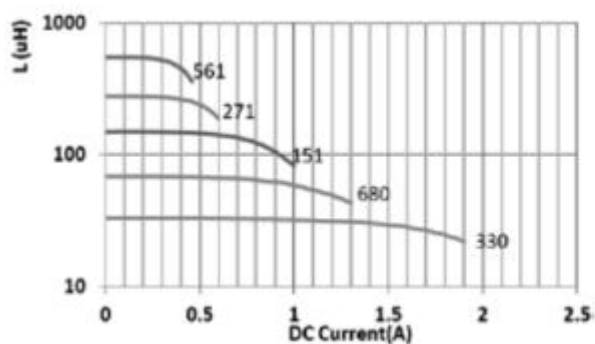
- L&Q: HP 4285A or HP 4284A, VR116/VR7220.
- DCR: Milli-ohm meter, VR131.
- Electrical specifications at 25℃.

Electrical Characteristics

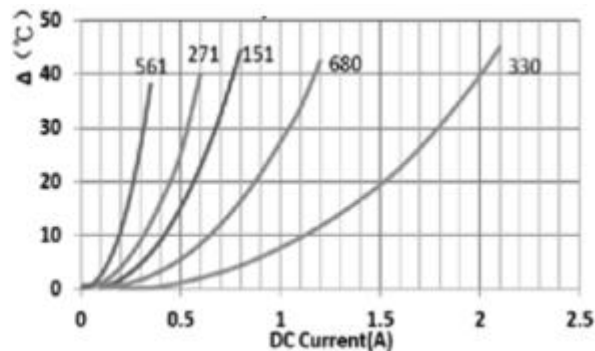
Part No.	L(uH)	Test Frequency	DCR(Ω)		I sat (A)		I rms (A)		Marking
			Max.	Typ.	Max.	Typ.	Max.	Typ.	
VERH74-2R2M	2.2±20%	100KHz/0.25V	25m	18m	6.00	6.50	6.10	6.32	2R2
VERH74-4R7M	4.7±20%	100KHz/0.25V	30m	24m	3.00	3.20	2.81	3.45	4R7
VERH74-100M	10±20%	1KHz/0.25V	49m	44m	2.35	2.95	2.52	3.24	100
VERH74-120M	12±20%	1KHz/0.25V	58m	50m	2.28	2.85	2.25	2.75	120
VERH74-150M	15±20%	1KHz/0.25V	81m	65m	2.25	2.80	2.00	2.50	150
VERH74-180M	18±20%	1KHz/0.25V	91m	79m	2.00	2.50	1.90	2.38	180
VERH74-220M	22±20%	1KHz/0.25V	110m	83m	1.70	2.10	1.80	2.22	220
VERH74-270M	27±20%	1KHz/0.25V	0.15	0.10	1.45	1.90	1.70	2.10	270
VERH74-330M	33±20%	1KHz/0.25V	0.17	0.12	1.45	1.80	1.64	2.00	330
VERH74-390M	39±20%	1KHz/0.25V	0.23	0.18	1.36	1.70	1.18	1.44	390
VERH74-470M	47±20%	1KHz/0.25V	0.26	0.21	1.21	1.52	1.15	1.40	470
VERH74-560M	56±20%	1KHz/0.25V	0.35	0.27	1.05	1.32	1.08	1.28	560
VERH74-680M	68±20%	1KHz/0.25V	0.38	0.31	0.86	1.08	0.98	1.18	680
VERH74-820M	82±20%	1KHz/0.25V	0.43	0.33	0.84	1.05	0.89	1.09	820
VERH74-101M	100±20%	1KHz/0.25V	0.61	0.50	0.81	1.02	0.78	0.95	101
VERH74-121M	120±20%	1KHz/0.25V	0.66	0.55	0.78	0.98	0.71	0.86	121
VERH74-151M	150±20%	1KHz/0.25V	0.88	0.71	0.76	0.95	0.62	0.78	151
VERH74-181M	180±20%	1KHz/0.25V	0.98	0.81	0.59	0.74	0.61	0.74	181
VERH74-221M	220±20%	1KHz/0.25V	1.17	0.92	0.56	0.70	0.60	0.72	221
VERH74-271M	270±20%	1KHz/0.25V	1.64	1.39	0.45	0.57	0.50	0.60	271
VERH74-331M	330±20%	1KHz/0.25V	1.86	1.58	0.44	0.56	0.41	0.51	331
VERH74-391M	390±20%	1KHz/0.25V	2.85	2.37	0.36	0.45	0.35	0.42	391
VERH74-471M	470±20%	1KHz/0.25V	3.01	2.77	0.36	0.45	0.34	0.41	471
VERH74-561M	560±20%	1KHz/0.25V	3.62	3.07	0.34	0.43	0.29	0.37	561
VERH74-681M	680±20%	1KHz/0.25V	4.63	3.47	0.29	0.37	0.29	0.35	681
VERH74-821M	820±20%	1KHz/0.25V	5.20	3.90	0.28	0.35	0.28	0.34	821
VERH74-102M	1000±20%	1KHz/0.25V	6.00	4.33	0.26	0.33	0.27	0.33	102

Typical Performance curves:

VERH74 Inductance vs DC Current Curve



VERH74 Temperature rise vs DC Current Curve



Packing method

1. Packing quantity of each reel: 1000PCS/R (18-36PCS not packed at the beginning and end), affixed with the correct label, and then placed into a plastic bag (plastic bag size: 360x460mm), with a package of desiccant, sealing, reel and carrying tape dimensions. Fig. 1-1

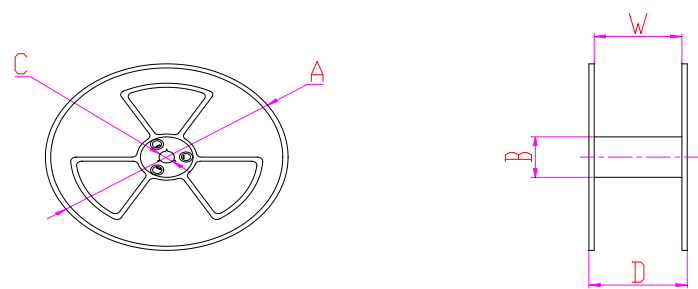
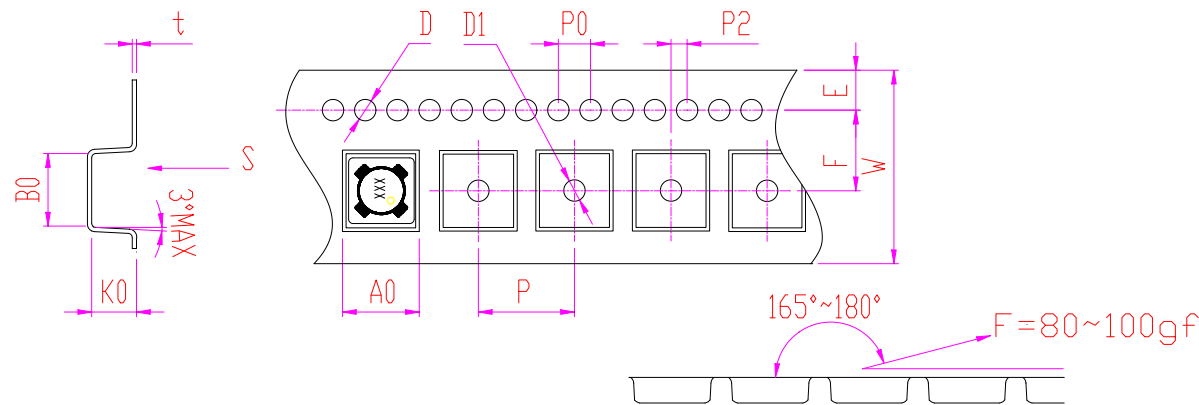


Fig .1-1

Reel dimensions , general tolerance ($\pm 0.5\text{mm}$)

A	B	C	W	D
$\Phi 330$	$\Phi 100$	$\Phi 13.5$	16.5	22.5



The general tolerance, of carrier size is $\pm < 0.2\text{mm}$.

W	A0	B0	K0	P	F	E	D	P0	P2	t
16.00	7.65	7.65	4.65	12.0	7.50	1.75	1.50	4.00	2.00	0.40

2. 3000PCS(3volumes) per beer carton. (Beer carton size:338x338x78mm)
3. Each case is packed with 9000PCS(3boxes), sealed, labeled, and the shape and size of cartons. Fig. 2-1

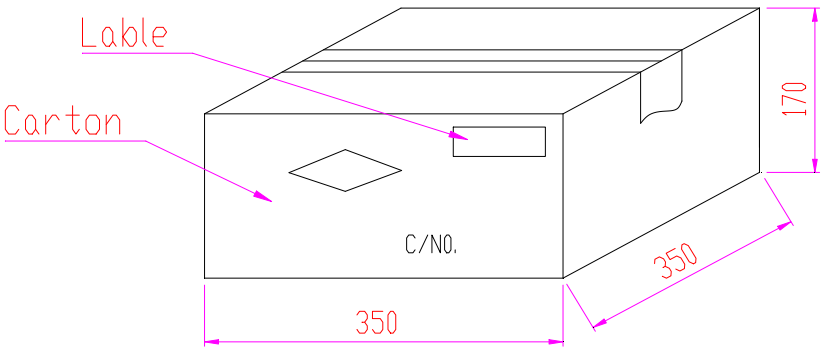
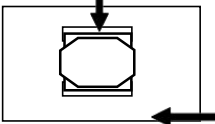
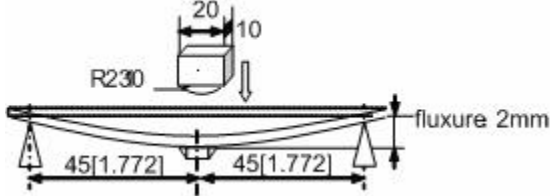
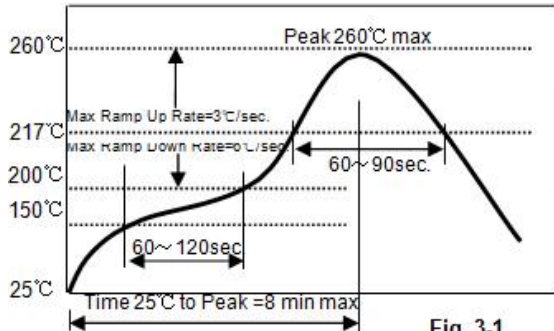
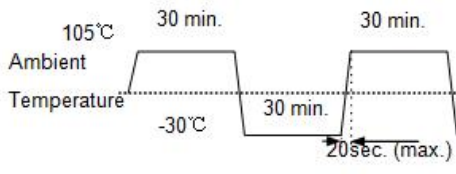


Fig. 2-1

Reliability Test:

Items	Requirements	Test Methods and Remarks
1.Terminal Strength	No removal or split of the termination or other defects shall occur.  Fig.1-1	① Solder the inductor to the testing jig (glass epoxy board shown in Fig.1-1) using eutectic solder. Then apply a force in the direction of the arrow. ② 10N force. ③ Keep time: 5s
2.Resistance to Flexure	No visible mechanical damage.  Fig.2-1	① Solder the chip to the test jig (glass epoxy board) using eutectic solder. Then apply a force in the direction shown as Fig.2-1. ② Flexure: 2mm ③ Pressurizing Speed: 0.5mm/sec ④ Keep time: 30±1s ⑤ Test board size: 100X40X1.0 ⑥ Land dimension: Please see
3.Vibration	① No visible mechanical damage. ② Inductance change: Within ±10%	① Solder the chip to the testing jig (glass epoxy board shown as the following figure) using eutectic solder. ② The chip shall be subjected to a simple harmonic motion having total amplitude of 1.5mm, the frequency being varied uniformly between the approximate limits of 10 and 55 Hz. ③ The frequency range from 10 to 55 Hz and return to 10 Hz shall be traversed in approximately 1 minute. This motion shall be applied for a period of 2 hours in each 3 mutually perpendicular directions (total of 6 hours).
4.Temperature coefficient	Inductance change: Within ±20%	① Temperature: -30℃~+105℃ ② With a reference value of +20℃, change rate shall be calculated
5.Solderability	90% or more of electrode area shall be coated by new solder.	① The test samples shall be dipped in flux, and then immersed in molten solder. ② Solder temperature: 245±5℃ ③ Duration: 5±1 sec. ④ Solder: Sn/3.0Ag/0.5Cu ⑤ Flux: 25% resin and 75% ethanol in weight ⑥ Immersion depth: all sides of mounting terminal shall be immersed
6.Resistance to Soldering Heat	① No visible mechanical damage. ② Inductance change: Within ±10%	① Re-flowing Profile: Please refer to Fig. 3-1. ② Test board thickness: 1.0mm ③ Test board material: glass epoxy resin ④ The chip shall be stabilized at normal condition for 1~2 hours before measuring  Fig. 3-1

7.Thermal Shock	① No visible mechanical damage. ② Inductance change: Within $\pm 10\%$  Fig.4-1	① Temperature and time: $-30\pm 3^{\circ}\text{C}$ for 30 ± 3 min→ 105°C for 30 ± 3 min, please refer to Fig. 4-1 . ② Transforming interval: Max. 20 sec ③ Tested cycle: 100 cycles ④ The chip shall be stabilized at normal condition for 1~2 hours before measuring
8.Resistance to Low Temperature	① No visible mechanical damage ② Inductance change: Within $\pm 10\%$	① Temperature: $-30\pm 3^{\circ}\text{C}$ ② Duration: $1000^{\pm 24}$ hours ③ The chip shall be stabilized at normal condition for 1~2 hours before measuring
9.Resistance to High Temperature	① No mechanical damage. ② Inductance change: Within $\pm 10\%$	① Temperature: $105\pm 2^{\circ}\text{C}$ ② Duration: $1000^{\pm 24}$ hours ③ The chip shall be stabilized at normal condition for 1~2 hours before measuring.
10.Damp Heat	① No mechanical damage. ② Inductance change: Within $\pm 10\%$	① Temperature: $60\pm 2^{\circ}\text{C}$ ② Humidity: 90% to 95%RH ③ Duration: $1000^{\pm 24}$ hours ④ The chip shall be stabilized at normal condition for 1~2 hours before measuring
11.Loading Under Damp Heat	① No mechanical damage. ② Inductance change: Within $\pm 10\%$	① Temperature: $60\pm 2^{\circ}\text{C}$ ② Humidity: 90% to 95% RH ③ Applied current: Rated current ④ Duration: $1000^{\pm 24}$ hours ⑤ The chip shall be stabilized at normal condition for 1~2 hours before measuring
12.Loading at High Temperature	① No mechanical damage. ② Inductance change: Within $\pm 10\%$	① Temperature: $85\pm 2^{\circ}\text{C}$ ② Applied current: Rated current ③ Duration: $1000^{\pm 24}$ hours ④ The chip shall be stabilized at normal condition for 1~2 hours before measuring

Recommended Soldering Technologies:

1. Re-flowing Profile:

- △ Preheat condition: 150 ~200°C/60~120sec.
- △ Allowed time above 217°C: 60~90sec.
- △ Max temp: 260°C
- △ Max time at max temp: 5sec.
- △ Solder paste: Sn/3.0Ag/0.5Cu
- △ Allowed Reflow time: 2x max
- △ Please refer to **Fig. 1-1**.

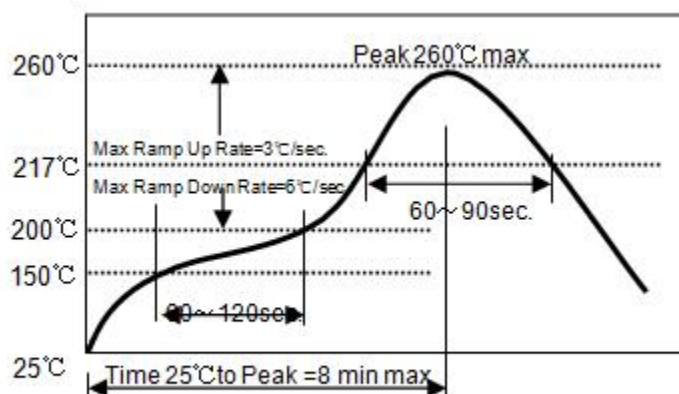


Fig. 1-1

[Note: The reflow profile in the above table is only for qualification and is not meant to specify board assembly profiles. Actual board assembly profiles must be based on the customer's specific board design, solder paste and process, and should not exceed the parameters as the Reflow profile shows.]

2. Iron Soldering Profile:

- △ Iron soldering power: Max. 30W
- △ Pre-heating: 150°C/60sec.
- △ Soldering Tip temperature: 350°C Max.
- △ Soldering time: 3sec. Max.
- △ Solder paste: Sn/3.0Ag/0.5Cu
- △ Max.1 times for iron soldering
- △ Please refer to **Fig. 2-1**.

[Note: Take care not to apply the tip of the soldering iron to the terminal electrodes.]

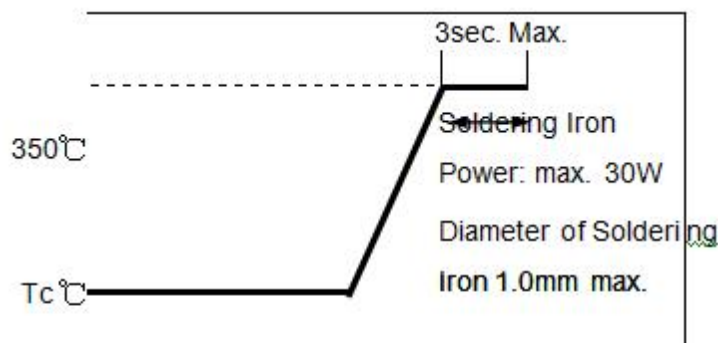


Fig. 2-1

Supplier Information

Supplier:

SHEN ZHEN VOLUME SOURCE CO.,LTD

Manufacturer:

SHEN ZHEN VOLUME SOURCE CO.,LTD

Manufacturing Address:

Address: F16,N4 Building, Fenggang Tianan Cyber Park, Yantian Village, Fenggang Town, Dong Guan City, GuangDong Province, China.

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