

# SHIELDED SMT POWER INDUCTORS—VERHD Series



## Applications:

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

## Features :

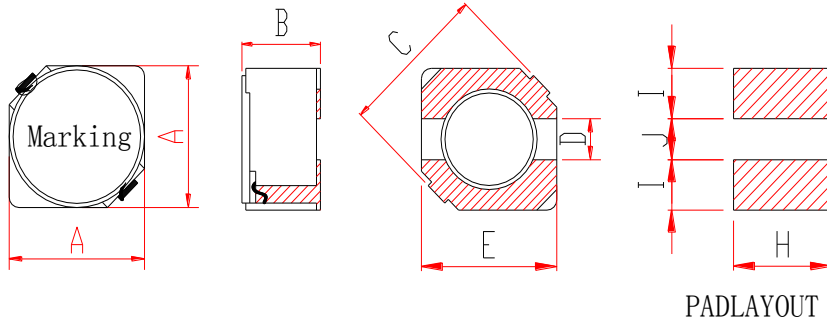
- High power , high saturation inductors.
- with magnetic shield against radiation.
- Directly connected electrode on ferrite core.
- Highly accurate dimensions for automatic mounting.

## Product Identification :

VERH 4D28 - 100 M  
(1) (2) (3) (4)

- (1) Product symbol.
- (2) Dimensions code.
- (3) Inductance: “100” for 10uH.
- (4) Tolerance: K:  $\pm 10\%$ ; M:  $\pm 20\%$ ; N:  $\pm 30\%$ .

## Dimensions in (mm)



Item	A	B	C	D	E	H	I	J
VERH3D16	$3.8 \pm 0.3$	1.9Max	5.5Max	1.0	3.8	4.6	1.6	1.4
VERH4D18	$4.7 \pm 0.3$	2.0Max	6.9Max	1.5	4.5	5.3	1.9	1.5
VERH4D28	$4.7 \pm 0.3$	3.0Max	6.9Max	1.5	4.5	5.3	1.9	1.5
VERH5D18	$5.7 \pm 0.3$	2.0Max	8.2Max	2.0	5.5	6.3	2.15	2.0
VERH5D28	$5.7 \pm 0.3$	3.0Max	8.2Max	2.0	5.5	6.3	2.15	2.0
VERH6D28	$6.7 \pm 0.3$	3.0Max	9.5Max	2.0	6.5	7.3	2.6	2.0
VERH6D38	$6.7 \pm 0.3$	4.0Max	9.5Max	2.0	6.5	7.3	2.6	2.0

## Characteristics :

- Saturation Current ( $I_{sat}$ ): The current when the inductance becomes 30% lower than its initial value. ( $T_a = 20^\circ\text{C}$ ).
- Temperature Rise Current ( $I_{rms}$ ): The current when the temperature of coil increases up to max.  $\Delta T = 40^\circ\text{C}$ . ( $T_a = 20^\circ\text{C}$ )
- 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/VR7210.
- DCR: Milli-ohm meter, VR131.
- Electrical specifications at  $25^\circ\text{C}$ .

## Electrical Characteristics

### VERH3D16 Series

Part No.	L ( uH )	Test Frequency	DCR (mΩ )	Isat (A)	Irms (A)	Marking
			Max.	Max.	Max.	
VERH3D16-3R3N	3.3 ± 30%	100kHz/0.25V	85	1.2	1.25	3R3
VERH3D16-4R7N	4.7 ± 30%	100kHz/0.25V	115	0.95	1.10	4R7
VERH3D16-5R6N	5.6 ± 30%	100kHz/0.25V	130	0.89	1.05	5R6
VERH3D16-6R8N	6.8 ± 30%	100kHz/0.25V	175	0.83	0.96	6R8
VERH3D16-8R2N	8.2 ± 30%	100kHz/0.25V	190	0.77	0.89	8R2
VERH3D16-100M	10 ± 20%	1kHz/0.25V	210	0.67	0.86	100
VERH3D16-120M	12 ± 20%	1kHz/0.25V	280	0.60	0.75	120
VERH3D16-150M	15 ± 20%	1kHz/0.25V	330	0.58	0.71	150
VERH3D16-180M	18 ± 20%	1kHz/0.25V	360	0.52	0.67	180
VERH3D16-220M	22 ± 20%	1kHz/0.25V	660	0.35	0.60	220
VERH3D16-270M	27 ± 20%	1kHz/0.25V	560	0.39	0.54	270
VERH3D16-330M	33 ± 20%	1kHz/0.25V	620	0.38	0.50	330
VERH3D16-390M	39 ± 20%	1kHz/0.25V	820	0.36	0.44	390
VERH3D16-470M	47 ± 20%	1kHz/0.25V	930	0.31	0.42	470
VERH3D16-560M	56 ± 20%	1kHz/0.25V	1200	0.29	0.35	560
VERH3D16-680M	68 ± 20%	1kHz/0.25V	1330	0.26	0.32	680
VERH3D16-820M	82 ± 20%	1kHz/0.25V	1500	0.23	0.30	820
VERH3D16-101M	100 ± 20%	1kHz/0.25V	2100	0.20	0.27	101

### VERH4D18 Series

Part No.	L ( uH )	Test Frequency	DCR (mΩ )	Isat (A)	Irms (A)	Marking
			Max.	Max.	Max.	
VERH4D18-1R0N	1.0 ± 30%	100kHz/0.25V	45	1.72	1.72	1R0
VERH4D18-2R2N	2.2 ± 30%	100kHz/0.25V	75	1.32	1.32	2R2
VERH4D18-2R7N	2.7 ± 30%	100kHz/0.25V	105	1.28	1.28	2R7
VERH4D18-3R3N	3.3 ± 30%	100kHz/0.25V	110	1.04	1.04	3R3
VERH4D18-3R9N	3.9 ± 30%	100kHz/0.25V	155	0.88	0.88	3R9
VERH4D18-4R7N	4.7 ± 30%	100kHz/0.25V	162	0.84	0.84	4R7
VERH4D18-5R6N	5.6 ± 30%	100kHz/0.25V	170	0.80	0.80	5R6
VERH4D18-6R8N	6.8 ± 30%	100kHz/0.25V	200	0.76	0.76	6R8
VERH4D18-8R2N	8.2 ± 30%	100kHz/0.25V	245	0.68	0.68	8R2
VERH4D18-100M	10 ± 20%	1kHz/0.25V	200	0.8	0.61	100
VERH4D18-120M	12 ± 20%	1kHz/0.25V	210	0.56	0.56	120
VERH4D18-150M	15 ± 20%	1kHz/0.25V	240	0.50	0.50	150
VERH4D18-180M	18 ± 20%	1kHz/0.25V	338	0.48	0.48	180
VERH4D18-220M	22 ± 20%	1kHz/0.25V	390	0.5	0.41	220
VERH4D18-270M	27 ± 20%	1kHz/0.25V	441	0.35	0.35	270
VERH4D18-330M	33 ± 20%	1kHz/0.25V	694	0.32	0.32	330
VERH4D18-390M	39 ± 20%	1kHz/0.25V	709	0.30	0.30	390
VERH4D18-470M	47 ± 20%	1kHz/0.25V	720	0.29	0.29	470

# Electrical Characteristics

## VERH4D28 Series

Part No.	L( uH )	Test Frequency	DCR(mΩ)	Isat (A)	Irms (A)	Marking
			Max.	Max.	Max.	
VERH4D28-1R2N	1.2 ± 30%	100kHz/0.25V	23.6	2.56	2.56	1R2
VERH4D28-1R8N	1.8 ± 30%	100kHz/0.25V	27.5	2.20	2.20	1R8
VERH4D28-2R2N	2.2 ± 30%	100kHz/0.25V	31.3	2.04	2.04	2R2
VERH4D28-2R7N	2.7 ± 30%	100kHz/0.25V	43.3	1.60	1.60	2R7
VERH4D28-3R3N	3.3 ± 30%	100kHz/0.25V	49.2	1.57	1.57	3R3
VERH4D28-3R9N	3.9 ± 30%	100kHz/0.25V	64.8	1.44	1.44	3R9
VERH4D28-4R7N	4.7 ± 30%	100kHz/0.25V	72.0	1.32	1.32	4R7
VERH4D28-5R6N	5.6 ± 30%	100kHz/0.25V	100.9	1.17	1.17	5R6
VERH4D28-6R8N	6.8 ± 30%	100kHz/0.25V	108.9	1.12	1.12	6R8
VERH4D28-8R2N	8.2 ± 30%	100kHz/0.25V	117.5	1.04	1.04	8R2
VERH4D28-100M	10 ± 20%	1kHz/0.25V	128.3	1.00	1.00	100
VERH4D28-120M	12 ± 20%	1kHz/0.25V	131.6	0.84	0.84	120
VERH4D28-150M	15 ± 20%	1kHz/0.25V	149.0	0.76	0.76	150
VERH4D28-180M	18 ± 20%	1kHz/0.25V	166.0	0.72	0.72	180
VERH4D28-220M	22 ± 20%	1kHz/0.25V	235.0	0.70	0.70	220
VERH4D28-270M	27 ± 20%	1kHz/0.25V	261.0	0.58	0.58	270
VERH4D28-330M	33 ± 20%	1kHz/0.25V	378.0	0.56	0.56	330
VERH4D28-390M	39 ± 20%	1kHz/0.25V	383.7	0.50	0.50	390
VERH4D28-470M	47 ± 20%	1kHz/0.25V	587.0	0.48	0.48	470
VERH4D28-560M	56 ± 20%	1kHz/0.25V	624.5	0.41	0.41	560
VERH4D28-680M	68 ± 20%	1kHz/0.25V	699.0	0.35	0.35	680
VERH4D28-820M	82 ± 20%	1kHz/0.25V	914.8	0.32	0.32	820
VERH4D28-101M	100 ± 20%	1kHz/0.25V	1020	0.29	0.29	101
VERH4D28-121M	120 ± 20%	1kHz/0.25V	1270	0.27	0.27	121
VERH4D28-151M	150 ± 20%	1kHz/0.25V	1350	0.24	0.24	151
VERH4D28-181M	180 ± 20%	1kHz/0.25V	1540	0.22	0.22	181

## Electrical Characteristics

### VERH5D18 Series

Part No.	L ( uH )	Test Frequency	DCR (mΩ )	Isat (A)	Irms (A)	Marking
			Max.	Max.	Max.	
VERH5D18-3R3M	3.3 ± 20%	100kHz/0.25V	55	2.00	2.00	3R3
VERH5D18-4R7M	4.7 ± 20%	100kHz/0.25V	75	1.60	1.60	4R7
VERH5D18-5R6N	5.6 ± 30%	100kHz/0.25V	80	1.60	1.60	5R6
VERH5D18-6R8N	6.8 ± 30%	100kHz/0.25V	96	1.40	1.40	6R8
VERH5D18-8R2N	8.2 ± 30%	100kHz/0.25V	116	1.25	1.25	8R2
VERH5D18-100M	10 ± 20%	1kHz/0.25V	124	1.20	1.20	100
VERH5D18-120M	12 ± 20%	1kHz/0.25V	153	1.10	1.10	120
VERH5D18-150M	15 ± 20%	1kHz/0.25V	196	0.97	0.97	150
VERH5D18-180M	18 ± 20%	1kHz/0.25V	210	0.85	0.85	180
VERH5D18-220M	22 ± 20%	1kHz/0.25V	290	0.80	0.80	220
VERH5D18-270M	27 ± 20%	1kHz/0.25V	330	0.75	0.75	270
VERH5D18-330M	33 ± 20%	1kHz/0.25V	386	0.65	0.65	330
VERH5D18-390M	39 ± 20%	1kHz/0.25V	520	0.57	0.57	390
VERH5D18-470M	47 ± 20%	1kHz/0.25V	595	0.54	0.54	470
VERH5D18-560M	56 ± 20%	1kHz/0.25V	665	0.50	0.50	560
VERH5D18-680M	68 ± 20%	1kHz/0.25V	840	0.43	0.43	680
VERH5D18-820M	82 ± 20%	1kHz/0.25V	978	0.41	0.41	820
VERH5D18-101M	100 ± 20%	1kHz/0.25V	1200	0.36	0.36	101

### VERH5D28 Series

Part No.	L ( uH )	Test Frequency	DCR (mΩ )	Isat (A)	Irms (A)	Marking
			Max.	Max.	Max.	
VERH5D28-2R2N	2.2 ± 30%	100kHz/0.25V	18	2.60	2.60	2R2
VERH5D28-3R3N	3.3 ± 30%	100kHz/0.25V	24	2.40	2.40	3R3
VERH5D28-4R7N	4.7 ± 30%	100kHz/0.25V	31	2.20	2.20	4R7
VERH5D28-5R6N	5.6 ± 30%	100kHz/0.25V	38	1.90	1.90	5R6
VERH5D28-6R8N	6.8 ± 30%	100kHz/0.25V	45	1.80	1.80	6R8
VERH5D28-8R2N	8.2 ± 30%	100kHz/0.25V	53	1.60	1.60	8R2
VERH5D28-100M	10 ± 20%	1kHz/0.25V	65	1.30	1.30	100
VERH5D28-120M	12 ± 20%	1kHz/0.25V	76	1.20	1.20	120
VERH5D28-150M	15 ± 20%	1kHz/0.25V	103	1.10	1.10	150
VERH5D28-180M	18 ± 20%	1kHz/0.25V	110	1.00	1.00	180
VERH5D28-220M	22 ± 20%	1kHz/0.25V	122	0.90	0.90	220
VERH5D28-270M	27 ± 20%	1kHz/0.25V	175	0.85	0.85	270
VERH5D28-330M	33 ± 20%	1kHz/0.25V	189	0.75	0.75	330
VERH5D28-390M	39 ± 20%	1kHz/0.25V	212	0.70	0.70	390
VERH5D28-470M	47 ± 20%	1kHz/0.25V	260	0.62	0.62	470
VERH5D28-560M	56 ± 20%	1kHz/0.25V	305	0.58	0.58	560
VERH5D28-151M	150 ± 20%	1kHz/0.25V	750	0.3	0.3	151
VERH5D28-331M	330 ± 20%	1kHz/0.25V	2300	0.18	0.18	331

## Electrical Characteristics

### VERH6D28 Series

Part No.	L ( uH )	Test Frequency	DCR (mΩ )	Isat (A)	Irms (A)	Marking
			Max.	Max.	Max.	
VERH6D28-3R3N	3.3 ± 30%	100kHz/0.25V	24	3.00	3.00	3R3
VERH6D28-3R9N	3.9 ± 30%	100kHz/0.25V	27	2.60	2.60	3R9
VERH6D28-4R7N	4.7 ± 30%	100kHz/0.25V	31	2.40	2.40	4R7
VERH6D28-5R6N	5.6 ± 30%	100kHz/0.25V	35	2.25	2.25	5R6
VERH6D28-6R8N	6.8 ± 30%	100kHz/0.25V	54	2.10	2.10	6R8
VERH6D28-8R2N	8.2 ± 30%	100kHz/0.25V	58	1.85	1.85	8R2
VERH6D28-100M	10 ± 20%	1kHz/0.25V	65	1.70	1.70	100
VERH6D28-120M	12 ± 20%	1kHz/0.25V	70	1.55	1.55	120
VERH6D28-150M	15 ± 20%	1kHz/0.25V	84	1.40	1.40	150
VERH6D28-180M	18 ± 20%	1kHz/0.25V	95	1.32	1.32	180
VERH6D28-220M	22 ± 20%	1kHz/0.25V	128	1.20	1.20	220
VERH6D28-270M	27 ± 20%	1kHz/0.25V	142	1.05	1.05	270
VERH6D28-330M	33 ± 20%	1kHz/0.25V	165	0.97	0.97	330
VERH6D28-390M	39 ± 20%	1kHz/0.25V	210	0.86	0.86	390
VERH6D28-470M	47 ± 20%	1kHz/0.25V	238	0.80	0.80	470
VERH6D28-560M	56 ± 20%	1kHz/0.25V	277	0.73	0.73	560
VERH6D28-680M	68 ± 20%	1kHz/0.25V	304	0.65	0.65	680
VERH6D28-820M	82 ± 20%	1kHz/0.25V	390	0.60	0.60	820
VERH6D28-101M	100 ± 20%	1kHz/0.25V	535	0.54	0.54	101

### VERH6D38 Series

Part No.	L ( uH )	Test Frequency	DCR (mΩ )	Isat (A)	Irms (A)	Marking
			Max.	Max.	Max.	
VERH6D38-3R3N	3.3 ± 30%	100kHz/0.25V	20	3.50	3.50	3R3
VERH6D38-4R7N	4.7 ± 30%	100kHz/0.25V	24	2.90	2.90	4R7
VERH6D38-5R6N	5.6 ± 30%	100kHz/0.25V	27	2.40	2.40	5R6
VERH6D38-6R8N	6.8 ± 30%	100kHz/0.25V	31	2.30	2.30	6R8
VERH6D38-8R2N	8.2 ± 30%	100kHz/0.25V	34	2.20	2.20	8R2
VERH6D38-100M	10 ± 20%	1kHz/0.25V	38	2.00	2.00	100
VERH6D38-120M	12 ± 20%	1kHz/0.25V	53	1.70	1.70	120
VERH6D38-150M	15 ± 20%	1kHz/0.25V	57	1.60	1.60	150
VERH6D38-180M	18 ± 20%	1kHz/0.25V	92	1.50	1.50	180
VERH6D38-220M	22 ± 20%	1kHz/0.25V	105	1.10	1.10	220
VERH6D38-270M	27 ± 20%	1kHz/0.25V	109	1.10	1.10	270
VERH6D38-330M	33 ± 20%	1kHz/0.25V	124	1.10	1.10	330
VERH6D38-390M	39 ± 20%	1kHz/0.25V	138	1.00	1.00	390
VERH6D38-470M	47 ± 20%	1kHz/0.25V	155	0.95	0.95	470
VERH6D38-560M	56 ± 20%	1kHz/0.25V	202	0.85	0.85	560
VERH6D38-680M	68 ± 20%	1kHz/0.25V	234	0.75	0.75	680
VERH6D38-820M	82 ± 20%	1kHz/0.25V	324	0.70	0.70	820
VERH6D38-101M	100 ± 20%	1kHz/0.25V	358	0.65	0.65	101

## Supplier Information

### Supplier:

Shenzhen Volume Source Electronics Co., Ltd.

### Manufacturer:


ShenzhenVolume Source Electronics Co., Ltd.


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