INDUCTORS

⊗TDK

Inductors for power circuits Wound ferrite VLCF series



VLCF5028-2 type



FEATURES

O Magnetic shield type wound inductor for power circuits.

O Low-profile product.

O Magnetic shield construction with ferrite core.

○ Operating temperature range: -40 to +105°C (including self-temperature rise)

APPLICATION

Power source inductor for mobile devices such as HDDs, DVCs, and DSCs
 LCDs, other DC to DC converters

PART NUMBER CONSTRUCTION

VLCF	5028	T -	1R3	Ν	2R5	- 2
Series name	L×W×H dimensions 5.0×5.0×2.8 mm	Packaging style	Inductance (µH)	Inductance tolerance	Rated current (A)	Internal code

CHARACTERISTICS SPECIFICATION TABLE

L		Measuring frequency	DC resistance		Rated curre	ent*	Part No.
					Isat	Itemp	
(µH)	Tolerance	(kHz)	(Ω)max.	(Ω)typ.	(A)max.	(A)typ.	
1.3	±30%	100	0.022	0.019	2.56	4.32	VLCF5028T-1R3N2R5-2
1.8	±30%	100	0.028	0.023	2.22	3.88	VLCF5028T-1R8N2R2-2
2.7	±30%	100	0.033	0.028	1.82	3.53	VLCF5028T-2R7N1R8-2
3.3	±30%	100	0.037	0.032	1.74	3.26	VLCF5028T-3R3N1R7-2
4.7	±30%	100	0.043	0.038	1.58	3.03	VLCF5028T-4R7N1R5-2
6.8	±30%	100	0.056	0.048	1.32	2.67	VLCF5028T-6R8N1R3-2
10	±20%	100	0.083	0.072	1.05	2.19	VLCF5028T-100M1R0-2
15	±20%	100	0.12	0.1	0.85	1.85	VLCF5028T-150MR85-2
22	±20%	100	0.14	0.13	0.71	1.66	VLCF5028T-220MR71-2
33	±20%	100	0.24	0.21	0.62	1.3	VLCF5028T-330MR62-2
47	±20%	100	0.33	0.29	0.49	1.1	VLCF5028T-470MR49-2
56	±20%	100	0.41	0.36	0.43	0.98	VLCF5028T-560MR43-2
68	±20%	100	0.46	0.4	0.4	0.93	VLCF5028T-680MR40-2
100	±20%	100	0.67	0.58	0.33	0.77	VLCF5028T-101MR33-2
220	±20%	100	1.38	1.2	0.22	0.54	VLCF5028T-221MR22-2
470	±20%	100	3.12	2.71	0.14	0.35	VLCF5028T-471MR14-2

* Rated current: smaller value of either lsat or Itemp.

Isat: When based on the inductance change rate (30% below the initial value)

Itemp: When based on the temperature increase (temperature increase of 40°C by self heating)

Measurement equipment

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Rated current Isat	4285A+42841A+42842C	Keysight Technologies	
DC resistance	VP-2941A	Panasonic	
L	4194A	Keysight Technologies	
Measurement item	Product No.	Manufacturer	

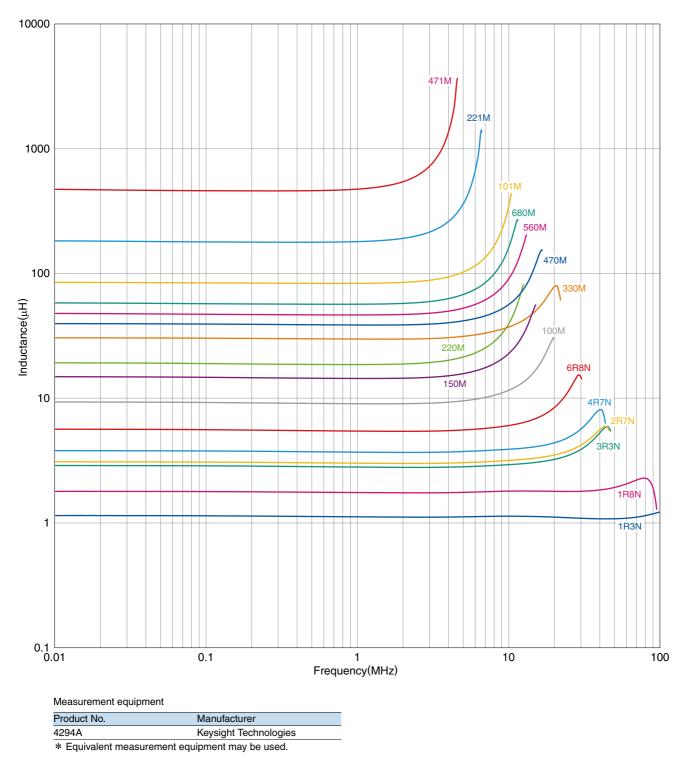
* Equivalent measurement equipment may be used.



A Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. (1/5) Please note that the contents may change without any prior notice due to reasons such as upgrading.

VLCF5028-2 type

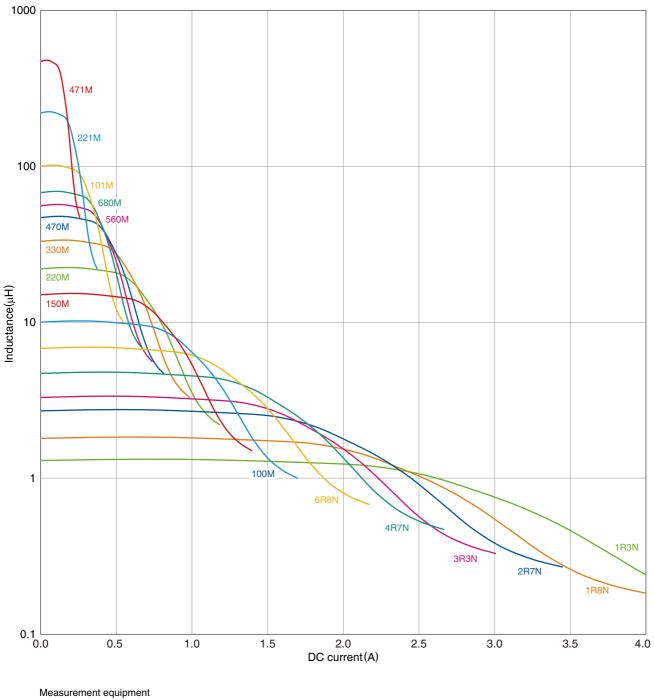
L FREQUENCY CHARACTERISTICS



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VLCF5028-2 type

■ INDUCTANCE VS. DC BIAS CHARACTERISTICS



Product No. Manufacturer

4285A+42841A+42842C Keysight Technologies

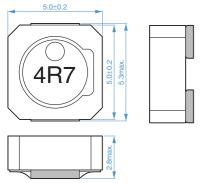
* Equivalent measurement equipment may be used.

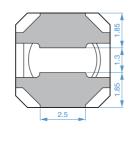
A Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. (3/5) Please note that the contents may change without any prior notice due to reasons such as upgrading.

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VLCF5028-2 type

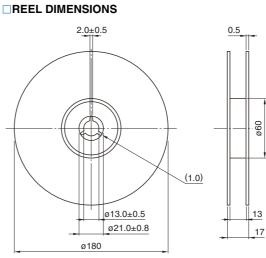
SHAPE & DIMENSIONS





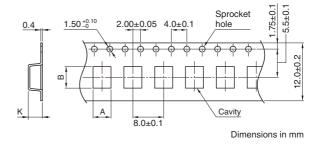
Dimensions in mm

PACKAGING STYLE



Dimensions in mm

TAPE DIMENSIONS



Туре	А	В	К
VLCF5028-2	5.45	5.3	3

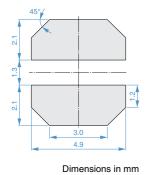
PACKAGE QUANTITY

Package quantity	500 pcs/reel

TEMPERATURE RANGE, INDIVIDUAL WEIGHT

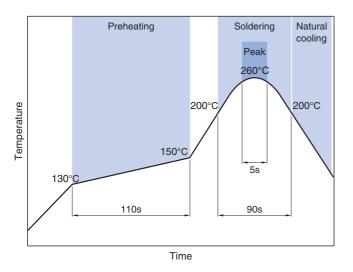
	Operating temperature range*	Storage temperature range**	Individual weight
	–40 to 105 °C	–40 to 105 °C	258 mg
*	Operating temperature range includes self-temperature rise.		

** The storage temperature range is for after the assembly.



RECOMMENDED REFLOW PROFILE

RECOMMENDED LAND PATTERN



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REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using this products.

The storage period is less than 6 months. Be sure to follow the storage conditions (temperature: 5 to 40°C, humidity: 10 to 75% RH or less).					
If the storage period elapses, the soldering of the terminal electrodes may deteriorate.					
\bigcirc Do not use or store in locations where there are conditions such as	s gas corrosion (salt, acid, alkali, etc.).				
Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and chip temperature does not exceed 150°C.					
	Soldering corrections after mounting should be within the range of the conditions determined in the specifications. If overheated, a short circuit, performance deterioration, or lifespan shortening may occur.				
When embedding a printed circuit board where a chip is mounted to a set, be sure that residual stress is not given to the chip due to the overall distortion of the printed circuit board and partial distortion such as at screw tightening portions.					
 Self heating (temperature increase) occurs when the power is tu design. 	Self heating (temperature increase) occurs when the power is turned ON, so the tolerance should be sufficient for the set therma design.				
 Carefully lay out the coil for the circuit board design of the non-magnetic shield type. A malfunction may occur due to magnetic interference. 					
○ Use a wrist band to discharge static electricity in your body through	n the grounding wire.				
O Do not expose the products to magnets or magnetic fields.					
O Do not use for a purpose outside of the contents regulated in the d	lelivery specifications.				
ment, industrial robots) under a normal operation and use conditio The products are not designed or warranted to meet the requirement ity require a more stringent level of safety or reliability, or whose far person or property.	ment, personal equipment, office equipment, measurement equip-				
(1) Aerospace/aviation equipment(8) Public information-processing equipment(2) Transportation equipment (cars, electric trains, ships, etc.)(9) Military equipment(3) Medical equipment(10) Electric heating apparatus, burning equipment(4) Power-generation control equipment(11) Disaster prevention/crime prevention equipment(5) Atomic energy-related equipment(12) Safety equipment(6) Seabed equipment(13) Other applications that are not considered general-purpose applications(7) Transportation control equipment even for general-purpose applications, you are kindly requested to take into consideration securing pro- ection circuit/device or providing backup circuits in your equipment.					

A Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. (5/5) Please note that the contents may change without any prior notice due to reasons such as upgrading.