### INDUCTORS

**公TDK** 

Inductors for power circuits Wound ferrite VLS-EX-H series (for automotive)



VLS6045EX-H type



### FEATURES

O Magnetic shield type wound inductor for power circuits.

O High magnetic shield construction achieved by a ferrite magnetic material and compatible with high-density mounting.

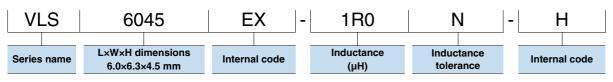
O Larger current and lower Rdc were achieved by optimizing the ferrite core figure.

O Compliant with AEC-Q200

### APPLICATION

O Automotive-related equipment (ECM, airbags, headlights, electronic power steering, meters, ABS, other)

### PART NUMBER CONSTRUCTION



### CHARACTERISTICS SPECIFICATION TABLE

L		Measuring frequency	DC resistance	Rated current*		Part No.
				Isat	Itemp	
(µH)	Tolerance	(kHz)	<b>(</b> Ω <b>)±30%</b>	(A)max.	(A)typ.	
1.0	±30%	100	0.012	12.0	6.0	VLS6045EX-1R0N-H
2.2	±30%	100	0.019	7.5	5.1	VLS6045EX-2R2N-H
4.7	±20%	100	0.027	5.8	4.2	<u>VLS6045EX-4R7M-H</u>
10	±20%	100	0.047	3.9	3.4	VLS6045EX-100M-H
22	±20%	100	0.105	2.4	1.9	VLS6045EX-220M-H
47	±20%	100	0.23	1.8	1.3	VLS6045EX-470M-H
100	±20%	100	0.47	1.1	0.9	VLS6045EX-101M-H
220	±20%	100	1.15	0.8	0.5	VLS6045EX-221M-H

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

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

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

#### Measurement equipment

Measurement item	Product No.	Manufacturer	
L	4294A	Keysight Technologies, Inc. (formerly Hewlett-Packard)	
DC resistance	34420A	Keysight Technologies, Inc. (formerly Hewlett-Packard)	
Rated current Isat	4284A+42841A+42842A	Keysight Technologies, Inc. (formerly Hewlett-Packard)	
A Envirolent measurement environment may be used			

\* Equivalent measurement equipment may be used.

### TEMPERATURE RANGE, INDIVIDUAL WEIGHT

Operating temperature range*	Storage temperature range**	Individual weight
–40 to 125 °C	–40 to 125 °C	0.6 g

\* Operating temperature range includes self-temperature rise.

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



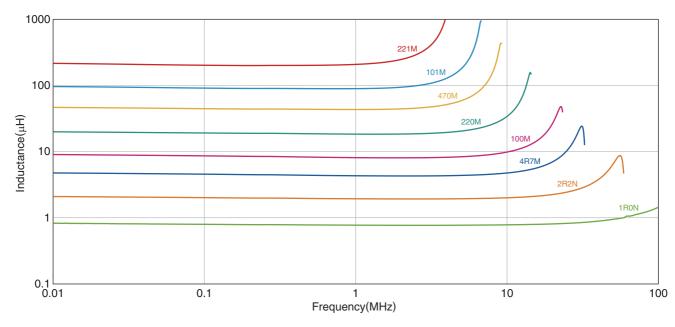
A Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. (1/4) Please note that the contents may change without any prior notice due to reasons such as upgrading.

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### INDUCTORS

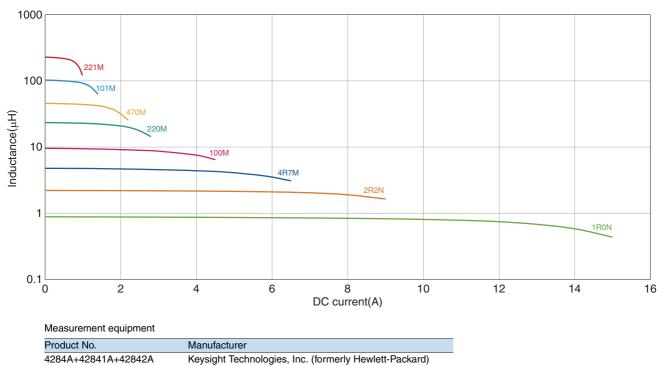
## VLS6045EX-H type

### L FREQUENCY CHARACTERISTICS



# Measurement equipment Product No. Manufacturer 4294A Keysight Technologies, Inc. (formerly Hewlett-Packard) \* Equivalent measurement equipment may be used.

### ■INDUCTANCE VS. DC BIAS CHARACTERISTICS



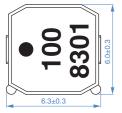
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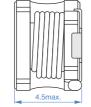
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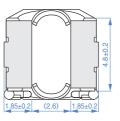
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# VLS6045EX-H type

### SHAPE & DIMENSIONS

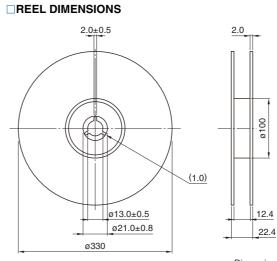






Dimensions in mm

### PACKAGING STYLE

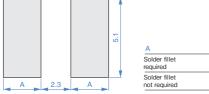


Dimensions in mm

### **TAPE DIMENSIONS**



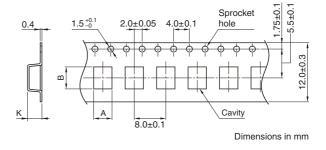
RECOMMENDED REFLOW PROFILE



Dimensions in mm

2.4

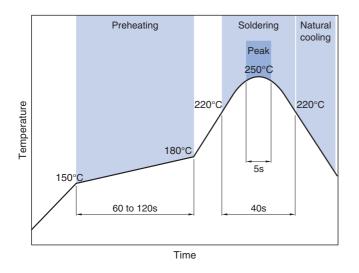
2.1



Туре	А	В	К
VLS6045EX-H	6.35	6.65	4.7

### **PACKAGE QUANTITY**

Package quantity	1500 pcs/reel



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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.

A REM	INDERS	
<ul> <li>The storage period is within 12 months. Be sure to follow the stor less).</li> <li>If the storage period elapses, the soldering of the terminal electrod</li> </ul>		
O Do not use or store in locations where there are conditions such as	gas corrosion (sait, acid, aikali, etc.).	
<ul> <li>Before soldering, be sure to preheat components.</li> <li>The preheating temperature should be set so that the temperature does not exceed 150°C.</li> </ul>	e difference between the solder temperature and chip temperature	
<ul> <li>Soldering corrections after mounting should be within the range of If overheated, a short circuit, performance deterioration, or lifespan</li> </ul>	-	
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.		
<ul> <li>Self heating (temperature increase) occurs when the power is tur design.</li> </ul>	rned ON, so the tolerance should be sufficient for the set thermal	
<ul> <li>Carefully lay out the coil for the circuit board design of the non-mag A malfunction may occur due to magnetic interference.</li> </ul>	netic shield type.	
$\bigcirc$ Use a wrist band to discharge static electricity in your body through	the grounding wire.	
O Do not expose the products to magnets or magnetic fields.		
$\bigcirc$ Do not use for a purpose outside of the contents regulated in the definition of the contents regulated in the definition of the contents regulated in the definition of the content o	elivery specifications.	
<ul> <li>The products listed on this catalog are intended for use in general ment, home appliances, amusement equipment, computer equipment, industrial robots) under a normal operation and use condition. The products are not designed or warranted to meet the requirement ity require a more stringent level of safety or reliability, or whose fail person or property.</li> <li>If you intend to use the products in the applications listed below or set forth in the each catalog, please contact us.</li> </ul>	ment, personal equipment, office equipment, measurement equip- n. hts of the applications listed below, whose performance and/or qual- lure, malfunction or trouble could cause serious damage to society,	
<ol> <li>Aerospace/aviation equipment</li> <li>Transportation equipment (cars, electric trains, ships, etc.)</li> <li>Medical equipment</li> <li>Power-generation control equipment</li> <li>Atomic energy-related equipment</li> <li>Seabed equipment</li> <li>Transportation control equipment</li> <li>Transportation control equipment</li> </ol>	<ul> <li>(8) Public information-processing equipment</li> <li>(9) Military equipment</li> <li>(10) Electric heating apparatus, burning equipment</li> <li>(11) Disaster prevention/crime prevention equipment</li> <li>(12) Safety equipment</li> <li>(13) Other applications that are not considered general-purpose applications</li> </ul>	

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