

## Inductors for power circuits

## Wound metal

## SPM-VT-D series (for automotive)



AEC-Q200

## SPM7054VT-D type



## FEATURES

- Metal composite type wound inductor for power circuits using a metallic magnetic material.
- Compared to ferrite wound type inductors, low Rdc and miniaturization can be realized due to superior DC superimposition characteristics of metallic magnetic materials.
- Vibration resistance of 30 G due to vibration resistance structure
- Operating temperature range: -55 to +155°C (including self-temperature rise)
- Compliant with AEC-Q200

## APPLICATION

- Automotive-related equipment (LED, ECM, ADAS, BCM etc.)
- Application guides: [Automotive \(xEV\)](#)

## PART NUMBER CONSTRUCTION

SPM7054VT	-	1R0	M	-	D
Series name		Inductance (μH)	Inductance tolerance		Internal code

## CHARACTERISTICS SPECIFICATION TABLE

L (μH)	Tolerance	Measuring frequency (kHz)	DC resistance		Part No.			
			(mΩ)typ.	Tolerance	Isat (A)typ. (ΔL=-20%)	(ΔL=-30%)	Itemp (A)typ. (ΔT=40deg.C)	
1.0	±20%	100	4.6	±10%	19.3	25.7	14.9	<a href="#">SPM7054VT-1R0M-D</a>
6.8	±20%	100	23.9	±10%	11.0	14.9	6.8	<a href="#">SPM7054VT-6R8M-D</a>
22	±20%	100	71.9	±10%	4.2	5.7	3.9	<a href="#">SPM7054VT-220M-D</a>
100	±20%	100	348	±10%	2.4	3.3	1.8	<a href="#">SPM7054VT-101M-D</a>

Isat: Based on the rate of change from the initial value of the inductance with DC current

Itemp: Based on self-temperature rise due to DC current (rated current)

## Measurement equipment

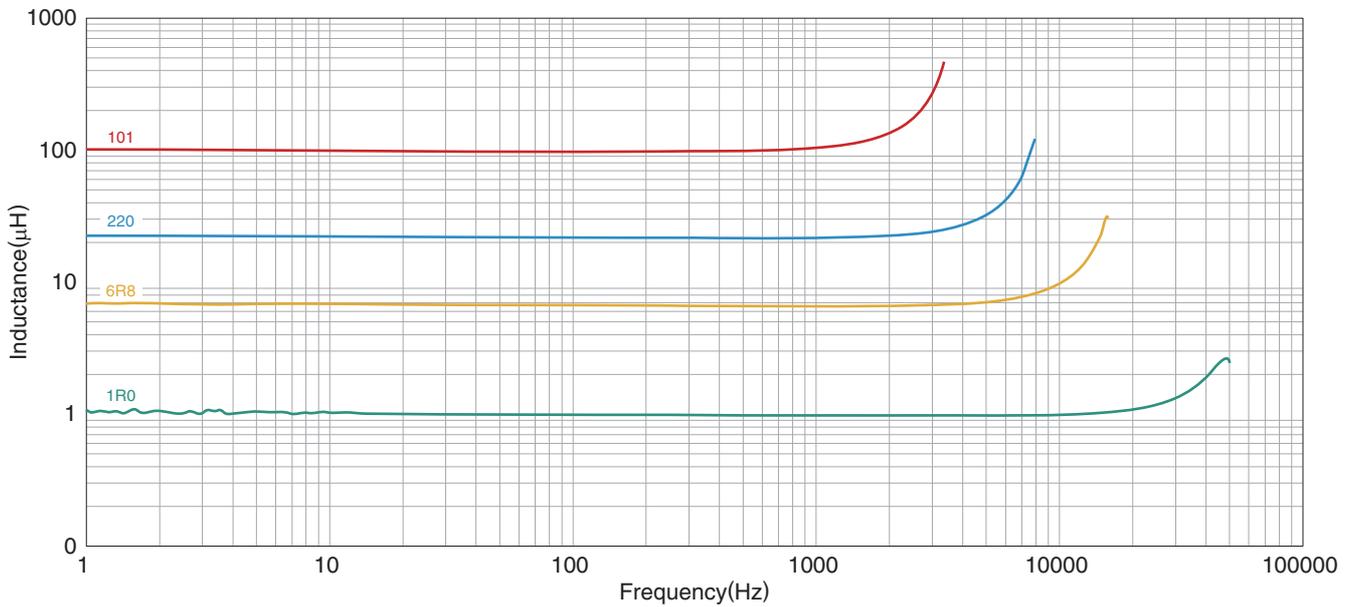
Measurement item	Product No.	Manufacturer
L	4285A	Keysight Technologies
DC resistance	AX-114N	ADEX

\* Equivalent measurement equipment may be used.



# SPM7054VT-D type

## L FREQUENCY CHARACTERISTICS

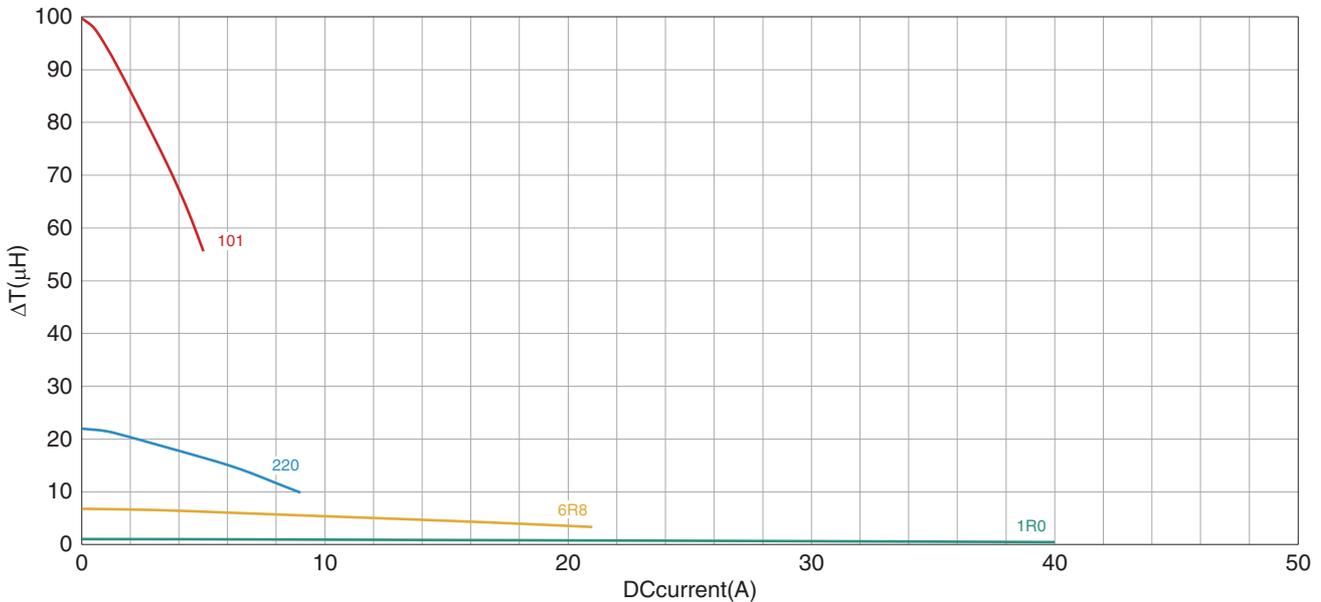


Measurement equipment

Product No.	Manufacturer
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\* Equivalent measurement equipment may be used.

## L VS. DC BIAS CHARACTERISTICS



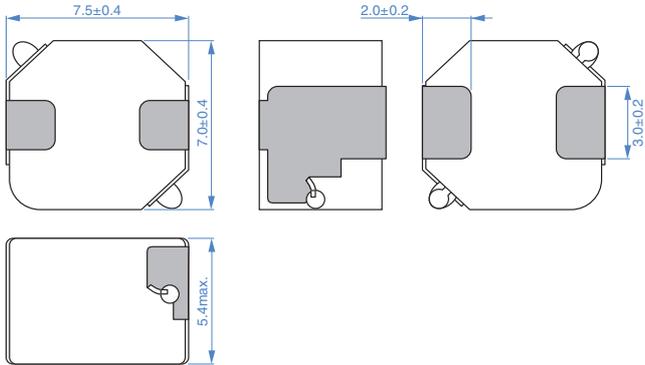
Measurement equipment

Product No.	Manufacturer
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\* Equivalent measurement equipment may be used.

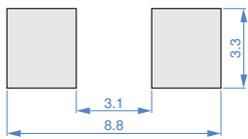
# SPM7054VT-D type

## SHAPE & DIMENSIONS



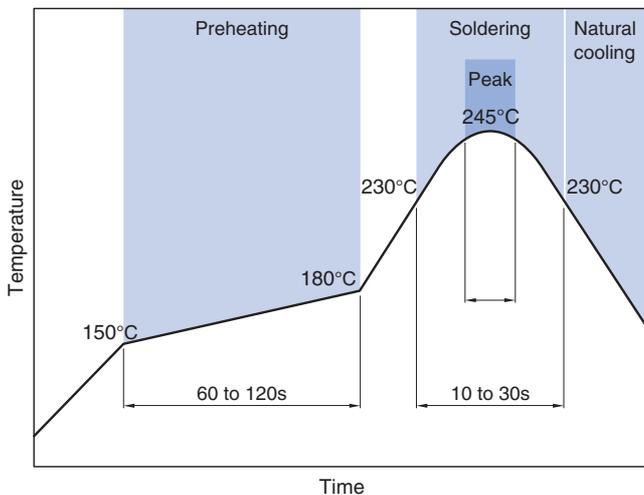
Dimensions in mm

## RECOMMENDED LAND PATTERN



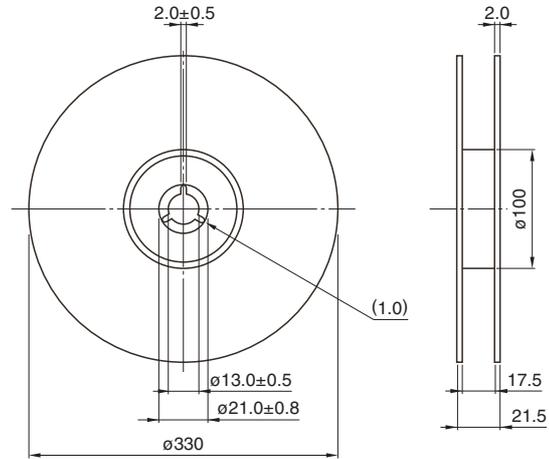
Dimensions in mm

## RECOMMENDED REFLOW PROFILE



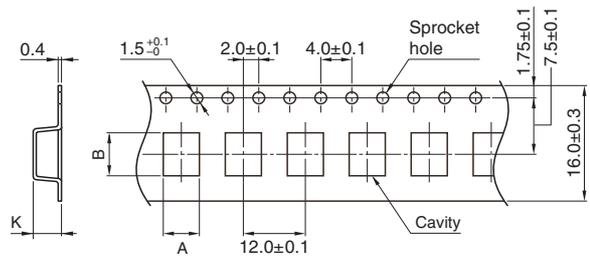
## PACKAGING STYLE

### REEL DIMENSIONS



Dimensions in mm

### TAPE DIMENSIONS



Dimensions in mm

Type	A	B	K
SPM7054VT-D	7.35	7.85	6.0

### PACKAGE QUANTITY

Package quantity	1000 pcs/reel
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## TEMPERATURE RANGE, INDIVIDUAL WEIGHT

Operating temperature range*	Storage temperature range**	Individual weight
-55 to +155 °C	-55 to +155 °C	1.4 g

\* Operating temperature range includes self-temperature rise.

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

## 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.

#### REMINDERS

- The storage period is less than 12 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.
- 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.
- Do not use products that have received any excessive mechanical shock such as by being dropped.
- 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 turned ON, so the tolerance should be sufficient for the set thermal design.
- Do not expose the products to magnets or magnetic fields.
- The performance of the product may deteriorate if coating materials are used, thus please assess the situation beforehand by taking this factor into consideration.
- Do not use for a purpose outside of the contents regulated in the delivery specifications.
- The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.  
The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.  
If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact us.

- (1) Aerospace/aviation equipment
- (2) Transportation equipment (electric trains, ships, etc.)
- (3) Medical equipment
- (4) Power-generation control equipment
- (5) Atomic energy-related equipment
- (6) Seabed equipment
- (7) Transportation control equipment

- (8) Public information-processing equipment
- (9) Military equipment
- (10) Electric heating apparatus, burning equipment
- (11) Disaster prevention/crime prevention equipment
- (12) Safety equipment
- (13) Other applications that are not considered general-purpose applications

When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuits in your equipment.

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[SPM7054VT-2R2M-D](#) [SPM7054VT-330M-D](#)