

Inductors for power circuits  
Wound metal  
SPM-HZ series (for automotive)



AEC-Q200

## SPM6530-HZ type



## FEATURES

- Magnetic shield type wound inductor for power circuits using a metallic magnetic material.
- Compared to ferrite wound type inductors, it is possible to achieve large current, low Rdc, and compactness.
- Low inductance variance in high-temperature environments with good DC superimposition characteristics. -40 to 125°C (including self-temperature rise)
- Metallic magnetic material is used, and the structure has an integrated molded coil, so hum noise is lower than with ferrite core adhesive coils.
- Operating temperature range: -40 to +125 °C (including self-temperature rise)
- Compliant with AEC-Q200

## APPLICATION

- Automotive-related equipment (Car navigation, car audio, electronic power steering, headlights, other)
- Application guides: [Automotive \(xEV\)](#), [Car Infotainment](#)

## PART NUMBER CONSTRUCTION

| SPM         | 6530                               | T               | R47                | M                       | HZ            |
|-------------|------------------------------------|-----------------|--------------------|-------------------------|---------------|
| Series name | L×W×H dimensions<br>7.1×6.5×3.0 mm | Packaging style | Inductance<br>(μH) | Inductance<br>tolerance | Internal code |

## CHARACTERISTICS SPECIFICATION TABLE

| L<br>(μH) | Tolerance | Measuring<br>frequency | DC resistance |          | Rated current*  |                  | Part No.                         |
|-----------|-----------|------------------------|---------------|----------|-----------------|------------------|----------------------------------|
|           |           | (kHz)                  | (mΩ)max.      | (mΩ)typ. | Isat<br>(A)typ. | Itemp<br>(A)typ. |                                  |
| 0.47      | ±20%      | 100                    | 3.63          | 3.30     | 19.7            | 20.5             | <a href="#">SPM6530T-R47M-HZ</a> |
| 0.68      | ±20%      | 100                    | 5.39          | 4.90     | 16.6            | 16.0             | <a href="#">SPM6530T-R68M-HZ</a> |
| 1.0       | ±20%      | 100                    | 7.81          | 7.10     | 13.2            | 14.4             | <a href="#">SPM6530T-1R0M-HZ</a> |
| 1.5       | ±20%      | 100                    | 10.7          | 9.70     | 9.4             | 11.6             | <a href="#">SPM6530T-1R5M-HZ</a> |
| 2.2       | ±20%      | 100                    | 19.1          | 17.3     | 8.4             | 8.4              | <a href="#">SPM6530T-2R2M-HZ</a> |
| 3.3       | ±20%      | 100                    | 29.7          | 27.0     | 6.4             | 6.9              | <a href="#">SPM6530T-3R3M-HZ</a> |
| 4.7       | ±20%      | 100                    | 39.4          | 35.8     | 6.2             | 5.6              | <a href="#">SPM6530T-4R7M-HZ</a> |
| 5.6       | ±20%      | 100                    | 41.3          | 37.5     | 5.4             | 5.4              | <a href="#">SPM6530T-5R6M-HZ</a> |
| 6.8       | ±20%      | 100                    | 60.0          | 54.5     | 4.8             | 4.8              | <a href="#">SPM6530T-6R8M-HZ</a> |
| 10.0      | ±20%      | 100                    | 86.4          | 78.5     | 3.9             | 4.2              | <a href="#">SPM6530T-100M-HZ</a> |
| 15.0      | ±20%      | 100                    | 119.9         | 109.0    | 3.0             | 3.3              | <a href="#">SPM6530T-150M-HZ</a> |
| 22.0      | ±20%      | 100                    | 200.2         | 182.0    | 2.3             | 2.6              | <a href="#">SPM6530T-220M-HZ</a> |

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

Isat: When based on the inductance change rate (20% below the initial value)

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

## Measurement equipment

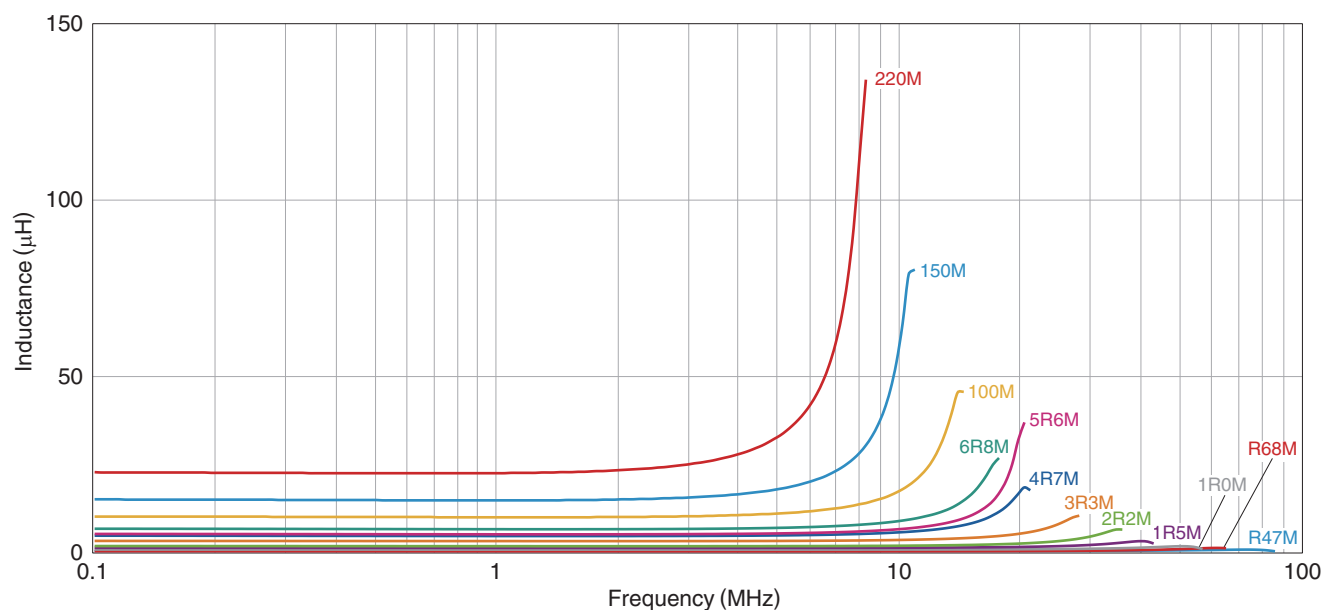
| Measurement item   | Product No.         | Manufacturer          |
|--------------------|---------------------|-----------------------|
| L                  | 4284A               | Keysight Technologies |
| DC resistance      | AX-111A             | ADEX                  |
| Rated current Isat | 4284A+42841A+42842C | Keysight Technologies |

\* Equivalent measurement equipment may be used.



# SPM6530-HZ type

## L FREQUENCY CHARACTERISTICS

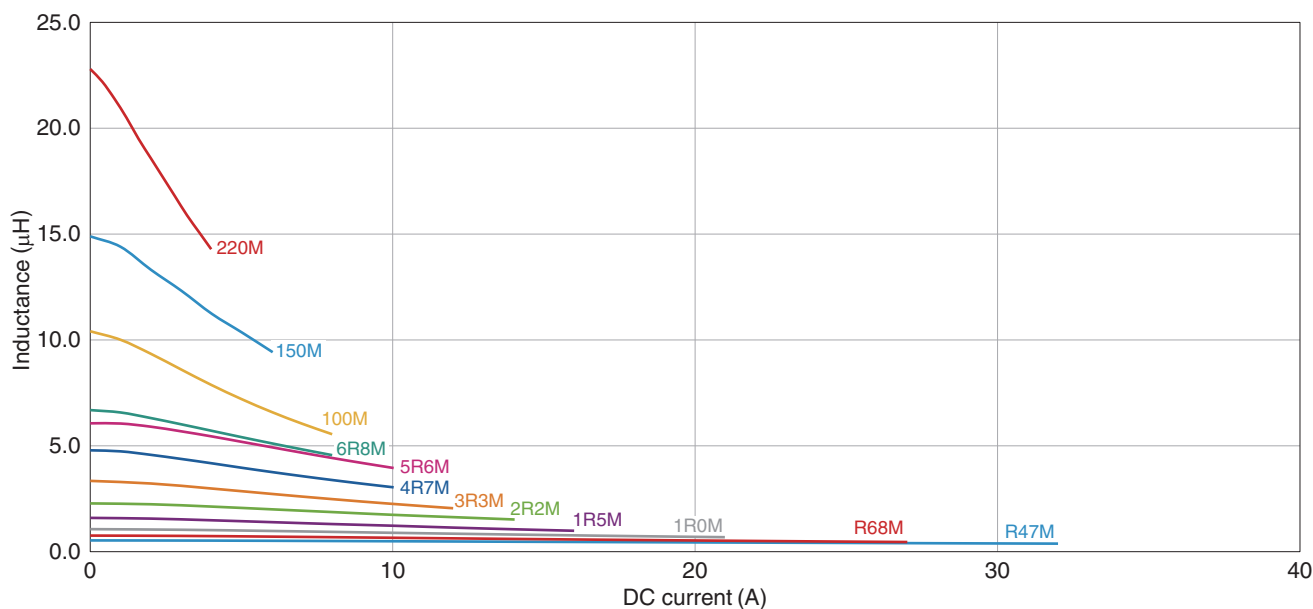


Measurement equipment

| Product No. | Manufacturer          |
|-------------|-----------------------|
| 4294A       | Keysight Technologies |

\* Equivalent measurement equipment may be used.

## INDUCTANCE VS. DC BIAS CHARACTERISTICS



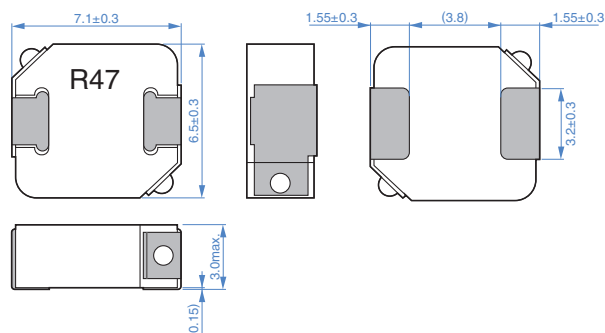
Measurement equipment

| Product No.         | Manufacturer          |
|---------------------|-----------------------|
| 4284A+42841A+42842C | Keysight Technologies |

\* Equivalent measurement equipment may be used.

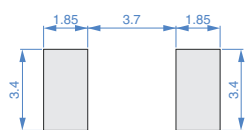
# SPM6530-HZ type

## SHAPE & DIMENSIONS



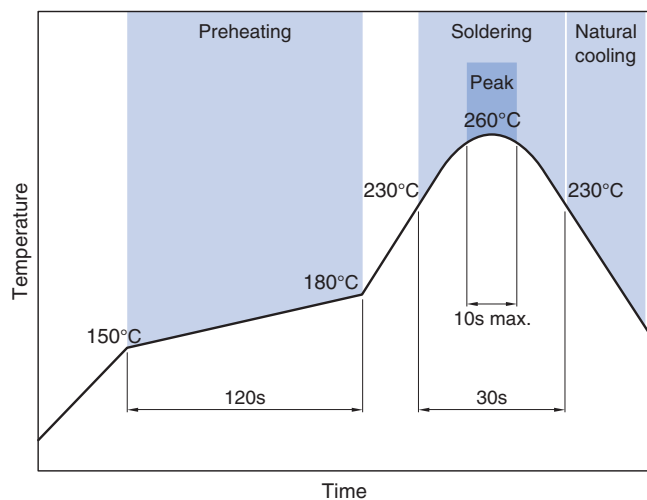
Dimensions in mm

## RECOMMENDED LAND PATTERN



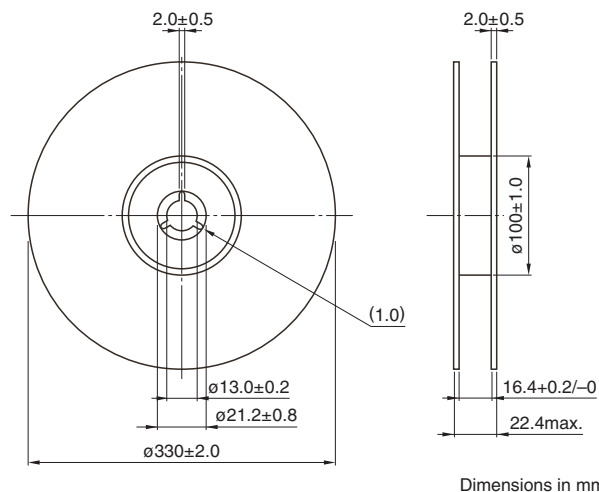
Dimensions in mm

## RECOMMENDED REFLOW PROFILE



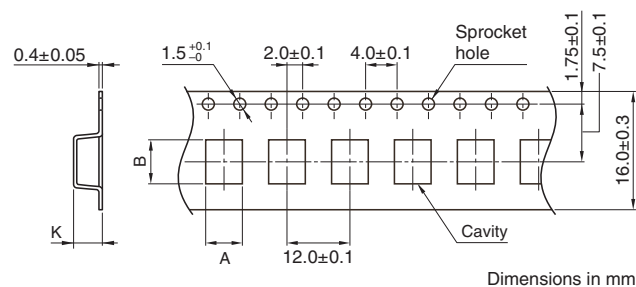
## PACKAGING STYLE

### REEL DIMENSIONS



Dimensions in mm

### TAPE DIMENSIONS



Dimensions in mm

| Type       | A       | B       | K       |
|------------|---------|---------|---------|
| SPM6530-HZ | 7.4±0.1 | 7.6±0.1 | 3.6±0.1 |

### PACKAGE QUANTITY

|                  |               |
|------------------|---------------|
| Package quantity | 1000 pcs/reel |
|------------------|---------------|

## TEMPERATURE RANGE, INDIVIDUAL WEIGHT

| Operating temperature range* | Storage temperature range** | Individual weight |
|------------------------------|-----------------------------|-------------------|
| -40 to +125 °C               | -40 to +125 °C              | 0.66 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 within 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.

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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