INDUCTORS

⊗TDK

Inductors for power circuits Wound metal SPM series



SPM12565XT type



FEATURES

- O Magnetic shield type wound inductor for power circuits using a metallic magnetic material.
- O Compared to ferrite wound type inductors, it is possible to achieve large current, low Rdc, and compactness.
- O Low inductance variance in high-temperature environments with good DC superimposition characteristics.
- O Metallic magnetic material is used, and the structure has an integrated molded coil, so hum noise is lower than with core adhesive coils.

APPLICATION

O Power supply around the CPU, HDDs, servers, VRMs, compact power supply modules, other

PART NUMBER CONSTRUCTION

| SPM | 12565 | Х | T - | 2R8 | М | 150 |
|-------------|--------------------------------------|------------------|-----------------|--------------------|-------------------------|---------------|
| Series name | L×W×H dimensions 13.0×12.6×6.5 mm | Internal code | Packaging style | Inductance (µH) | Inductance tolerance | Internal code |

CHARACTERISTICS SPECIFICATION TABLE

| L | | Measuring frequency | DC resistan | DC resistance | | ent* | Part No. |
|------|-----------|------------------------|-------------------|-------------------|---------|---------|--------------------|
| | | | | | Isat | Itemp | |
| (µH) | Tolerance | (kHz) | (m Ω)max. | (m Ω)typ. | (A)typ. | (A)typ. | |
| 1.0 | +/-20% | 100 | 2.28 | 1.90 | 42.0 | 22.0 | SPM12565XT-1R0M |
| 1.4 | +/-20% | 100 | 2.80 | 2.33 | 40.0 | 18.0 | SPM12565XT-1R4M |
| 2.8 | +/-20% | 100 | 5.20 | 4.00 | 28.0 | 15.0 | SPM12565XT-2R8M150 |
| | | 100 | | 4.00 | 28.0 | 15.0 | SPM12565X1-2R8M150 |

* Rated current: smaller value of either lsat 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)

• The cleaning agent can not be used for these products.

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 | | | | |

* Equivalent measurement equipment may be used.

TEMPERATURE RANGE, INDIVIDUAL WEIGHT

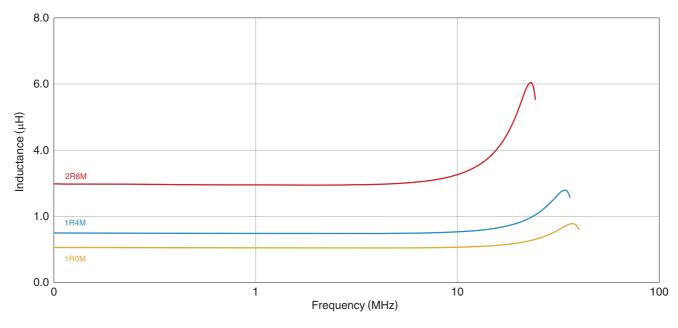
| Operating temperature range* | Storage temperature range** | Individual weight | | |
|---|-----------------------------|-------------------|--|--|
| –40 to +125 °C | –40 to +125 °C | 5.49 g | | |
| * Operating temperature range includes self-temperature rise. | | | | |

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



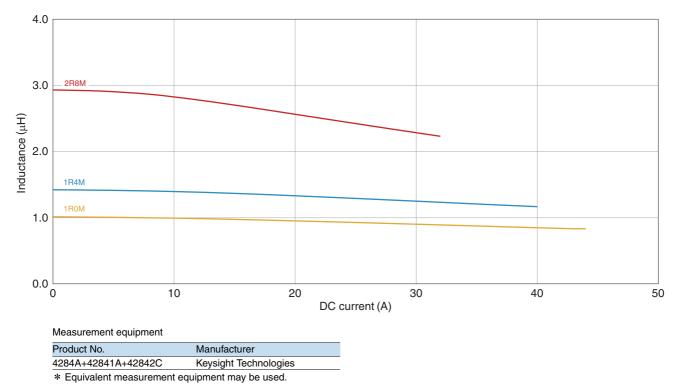
SPM12565XT type

L FREQUENCY CHARACTERISTICS



| Measurement equipment | | |
|---|-----------------------|--|
| Product No. | Manufacturer | |
| 4294A | Keysight Technologies | |
| * Equivalent measurement equipment may be used. | | |

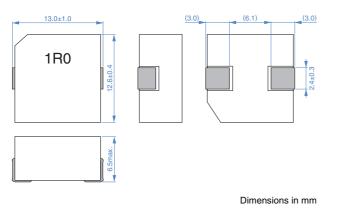
■ INDUCTANCE VS. DC BIAS CHARACTERISTICS



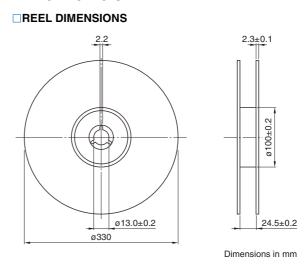
A Please be sure to request delivery specifications that provide further details on the features and specifications of the products for proper and safe use. (2/4) Please note that the contents may change without any prior notice due to reasons such as upgrading.

SPM12565XT type

SHAPE & DIMENSIONS

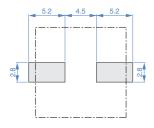


PACKAGING STYLE

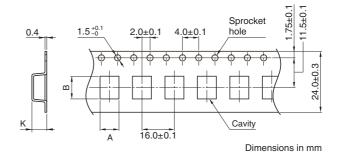


TAPE DIMENSIONS

RECOMMENDED LAND PATTERN

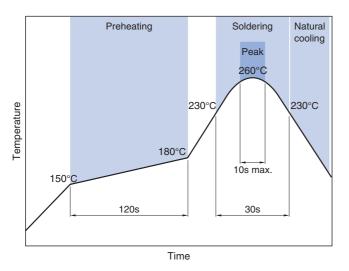


Dimensions in mm



| Туре | А | В | K |
|------------|------|------|-----|
| SPM12565XT | 13.1 | 14.2 | 7.3 |

RECOMMENDED REFLOW PROFILE



PACKAGE QUANTITY

| Package quantity | 500 pcs/reel |
|------------------|--------------|
|------------------|--------------|

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. (3/4) Please note that the contents may change without any prior notice due to reasons such as upgrading.

20210512

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 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. | | | | |
|---|--|--|--|--|
| Do not use or store in locations where there are conditions such as g | | | | |
| | as conosion (sait, aciu, aikaii, 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 turned ON, so the tolerance should be sufficient for the set thermal design. | | | | |
| Carefully lay out the coil for the circuit board design of the non-magnetic A malfunction may occur due to magnetic interference. | etic shield type. | | | |
| \bigcirc Use a wrist band to discharge static electricity in your body through t | he grounding wire. | | | |
| \bigcirc Do not expose the products to magnets or magnetic fields. | | | | |
| O Do not use for a purpose outside of the contents regulated in the deli | ivery specifications. | | | |
| 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 requirements ity require a more stringent level of safety or reliability, or whose failuperson or property. If you intend to use the products in the applications listed below or if set forth in the each catalog, please contact us. | ent, personal equipment, office equipment, measurement equip- s of the applications listed below, whose performance and/or qual- ire, malfunction or trouble could cause serious damage to society, | | | |
| Aerospace/aviation equipment Transportation equipment (cars, electric trains, ships, etc.) Medical equipment Power-generation control equipment Atomic energy-related equipment Seabed equipment Transportation control equipment When designing your equipment even for general-purpose applications, | (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 you are kindly requested to take into consideration securing pro- | | | |
| tection circuit/device or providing backup circuits in your equipment. | , you are kindly requested to take into consideration security pro- | | | |

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. (4/4) Please note that the contents may change without any prior notice due to reasons such as upgrading.