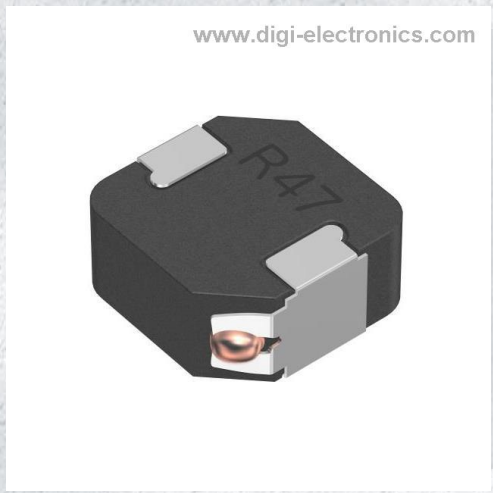
SPM10054T-R68M-HZR Datasheet



DiGi Electronics Part Number	SPM10054T-R68M-HZR-DG
Manufacturer	TDK Corporation
Manufacturer Product Number	SPM10054T-R68M-HZR
Description	AUTO IND 680NH 32A 2.09MOHM
Detailed Description	680 nH Shielded Wirewound Inductor 24 A 2.09mOhm Max Nonstandard

https://www.DiGi-Electronics.com

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
SPM10054T-R68M-HZR	TDK Corporation
Series:	Product Status:
SPM-HZR	Active
Type:	Material - Core:
Wirewound	Metal
Inductance:	Tolerance:
680 nH	±20%
Current Rating (Amps):	Current - Saturation (Isat):
24 A	40.8A
Shielding:	DC Resistance (DCR):
Shielded	2.09mOhm Max
Q @ Freq:	Frequency - Self Resonant:
-	-
Ratings:	Operating Temperature:
AEC-Q200	-40°C ~ 125°C
Inductance Frequency - Test:	Features:
100 kHz	-
Mounting Type:	Package / Case:
Surface Mount	Nonstandard
Supplier Device Package:	Size / Dimension:
-	0.421" L x 0.394" W (10.70mm x 10.00mm)
Height - Seated (Max):	
0.213" (5.40mm)	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8504.50.4000	

INDUCTORS

TDK

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

RoHS | REACH SVHC-Free | Halogen Free | Lead Free

AEC-Q200

SPM10054-HZR type

Product Portal | Search | Simulation Model | Selection Guide | Tech Library | Tech Note | Application Guides Automotive

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)

PART NUMBER CONSTRUCTION

SPM	10054	T	-	R47	M	-	HZR
Series name	L×W×H dimensions 10.7×10.0×5.4 mm	Packaging style		Inductance (µH)	Inductance tolerance		Internal code

CHARACTERISTICS SPECIFICATION TABLE

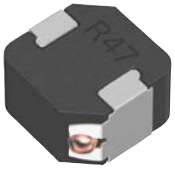
L		Measuring frequency	DC resistance		Rated current*		Part No.
					Isat	Itemp	
(µH)	Tolerance	(kHz)	(mΩ)max.	(mΩ)typ.	(A)typ.	(A)typ.	
0.47	±20%	100	1.62	1.47	48.1	28.4	SPM10054T-R47M-HZR
0.68	±20%	100	2.09	1.90	40.8	24.0	SPM10054T-R68M-HZR
1.0	±20%	100	2.64	2.40	21.1	22.2	SPM10054T-1R0M-HZR
1.5	±20%	100	5.39	4.90	14.8	15.6	SPM10054T-1R5M-HZR
2.5	±20%	100	7.48	6.80	13.9	13.2	SPM10054T-2R5M-HZR
3.3	±20%	100	8.53	7.75	10.9	13.2	SPM10054T-3R3M-HZR
4.7	±20%	100	14.0	12.7	12.2	9.5	SPM10054T-4R7M-HZR
6.8	±20%	100	17.9	16.2	6.6	8.8	SPM10054T-6R8M-HZR
10.0	±20%	100	24.4	22.1	6.3	7.4	SPM10054T-100M-HZR
15.0	±20%	100	38.2	34.7	5.1	5.7	SPM10054T-150M-HZR
22.0	±20%	100	57.0	51.8	5.0	4.5	SPM10054T-220M-HZR
33.0	±20%	100	82.2	74.7	3.9	3.9	SPM10054T-330M-HZR
47.0	±20%	100	121.2	110.1	3.7	3.1	SPM10054T-470M-HZR
68.0	±20%	100	163.0	148.1	3.2	2.7	SPM10054T-680M-HZR

* 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

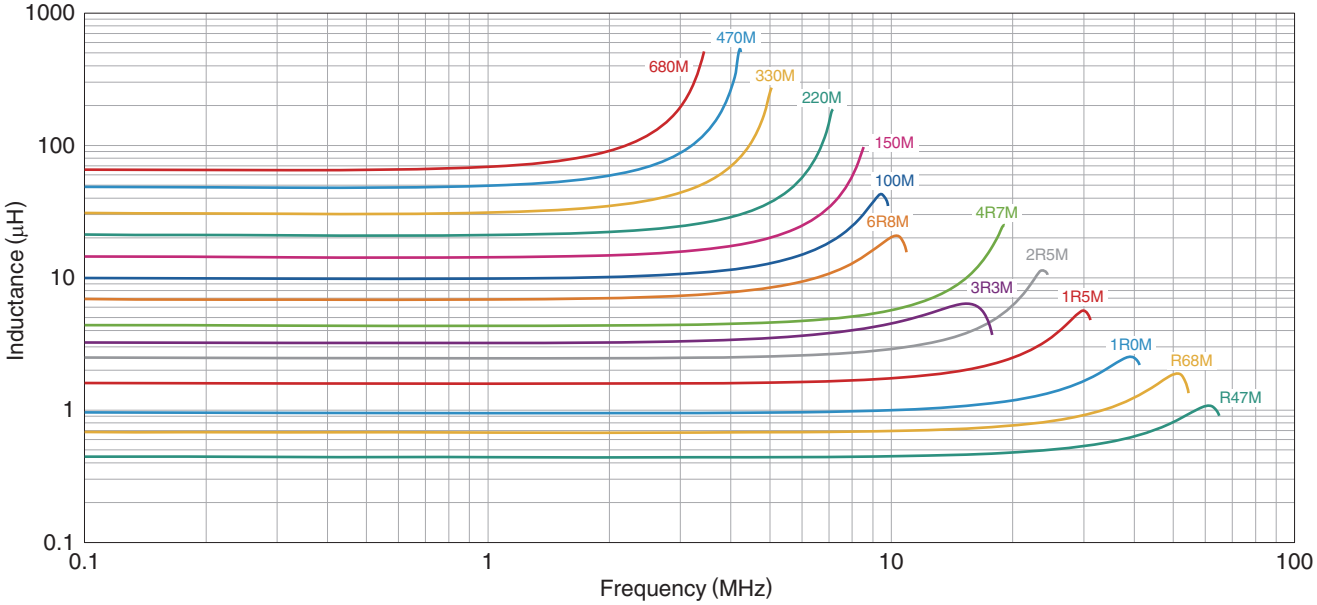
Measurement item	Product No.	Manufacturer
L	4284A	Keysight Technologies
DC resistance	AX-111A	ADEX
Rated current Isat	4284A+42841A+42842C	Keysight Technologies

* Equivalent measurement equipment may be used.



SPM10054-HZR type

L FREQUENCY CHARACTERISTICS

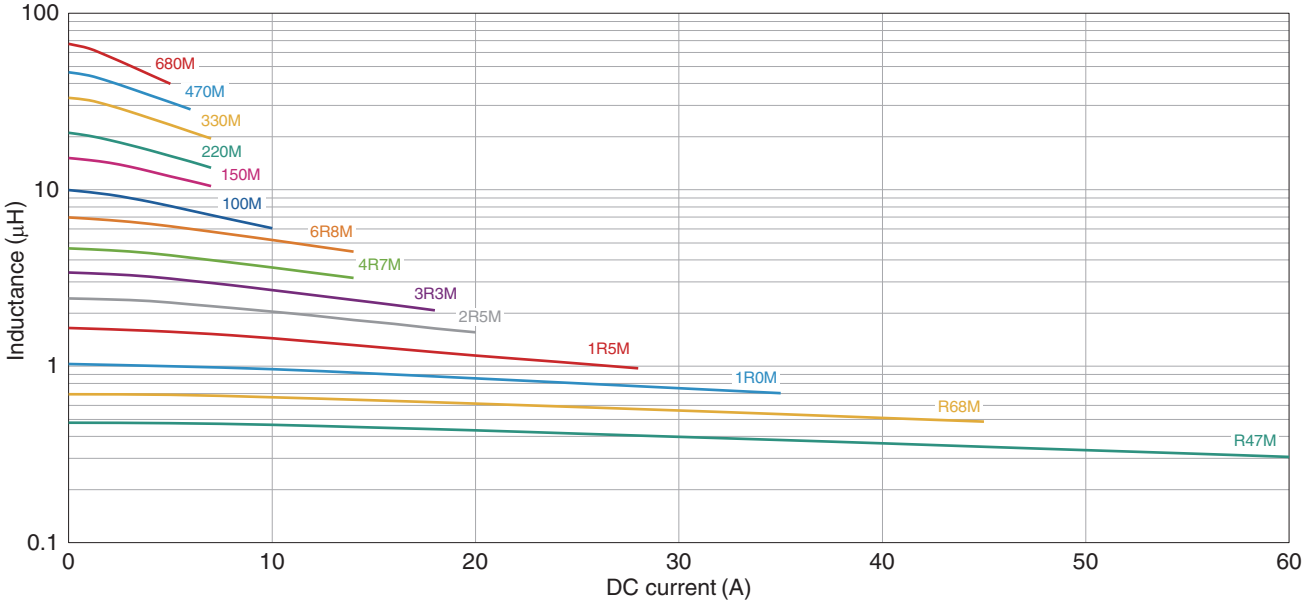


□測定器

Product No.	Manufacturer
4294A	Keysight Technologies

* Equivalent measurement equipment may be used.

INDUCTANCE VS. DC BIAS CHARACTERISTICS



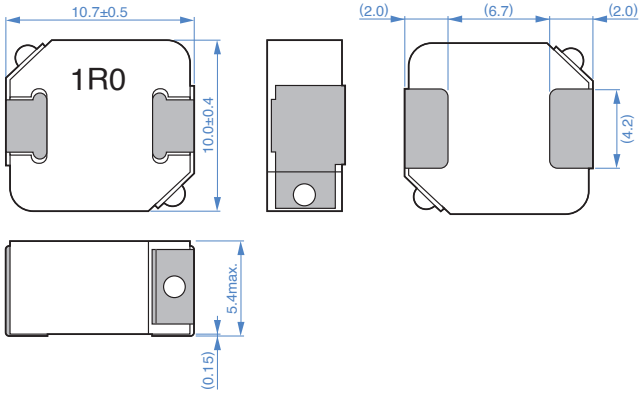
□測定器

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

* Equivalent measurement equipment may be used.

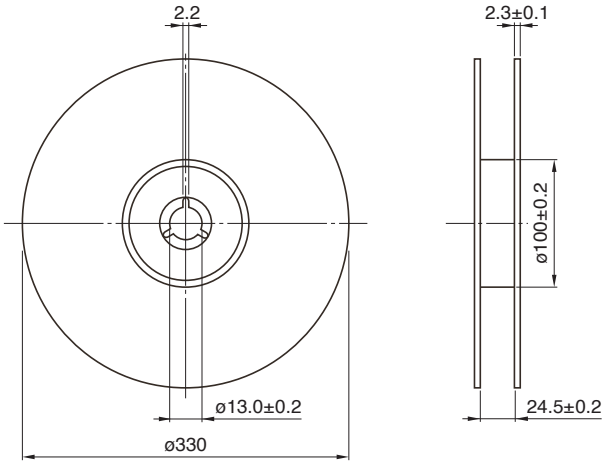
SPM10054-HZR type

SHAPE & DIMENSIONS



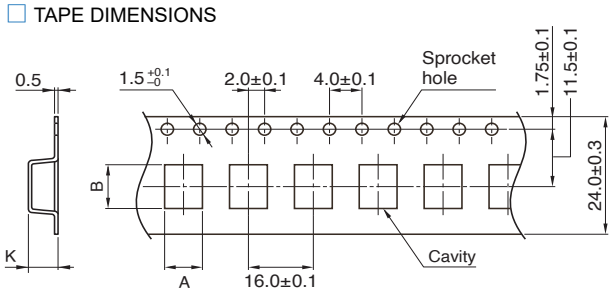
PACKAGING STYLE

☐ REEL DIMENSIONS



Dimensions in mm

☐ TAPE DIMENSIONS



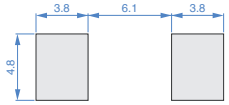
Dimensions in mm

Type	A	B	K
SPM10054-HZR	10.5	11.5	5.6

☐ PACKAGE QUANTITY

Package quantity	500 pcs/reel

RECOMMENDED LAND PATTERN

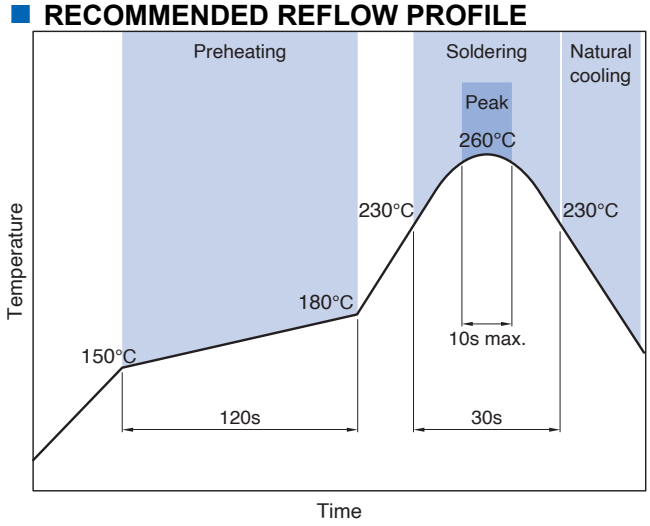


TEMPERATURE RANGE, INDIVIDUAL WEIGHT

Operating temperature range *	Storage temperature range **	Individual weight
-40 to +125 °C	-40 to +125 °C	2.99 g

* Operating temperature range includes self-temperature rise.
** The storage temperature range is for after the assembly.

RECOMMENDED REFLOW PROFILE



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.
- Do not use or store in locations where there are conditions such as 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 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 shield type.
  A malfunction may occur due to magnetic interference.
- Use a wrist band to discharge static electricity in your body through the grounding wire.
- Do not expose the products to magnets or magnetic fields.
- Do not use for a purpose outside of the contents regulated in the delivery specifications.
- The products described in this catalog are intended to be installed in automobiles or automotive electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) and to be used in automobiles (including the case where the said automotive product is mounted in a vehicle) or standard applications as general electronic equipment in automotive applications or standard applications as general electronic equipment in automotive applications in accordance with the scope and conditions described in this specification, while the said automotive or general electronic equipment including the said product is intended to be used in the usual operation and usage methods, respectively. Other than automotive or automotive products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality requires a more stringent level of safety or reliability, or whose failure, malfunction or defect could cause serious damage to society, person or property.
  Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this specification sheet.
  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 this specification, 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.

OUR CERTIFICATE

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