Inductors for power circuits Thin-film metal magnetic material TFM-GHM series



TFM201610GHM type



FEATURES

- OBy using metal magnetic material with high Saturation magnetic flux density the excellent DC bias characteristics needed for inductors for power circuits can be achieved.
- With the same product shape and terminal structure as general chip parts it has excellent mounting stability characteristics and can also be mounted to general-purpose land patterns.
- OBy using a closed magnetic circuit structure leakage flux is minimized.

APPLICATION

Smart phones, tablet terminals, HDDs, SSDs, DVCs, DSCs, mobile display panels, portable game devices, compact power supply modules, other

PART NUMBER CONSTRUCTION

TFM	201610	GHM -	R47	М	Т	AA
Series	L×W×H dimensions	Characteristic	Inductance	Inductance	Packaging	Internal
name	2.0×1.6×1.0 mm	type	(μH)	tolerance	style	code

CHARACTERISTICS SPECIFICATION TABLE

L		LMeasuring frequency	DC resistance		Rated current*			Part No.	
					Isat		Itemp		
(µH)	Tolerance	(MHz)	(mΩ)max.	(mΩ)typ.	(A)max.	(A)typ.	(A)max.	(A)typ.	
0.47	±20%	1.0	41	32	4.7	5.0	3.9	4.4	TFM201610GHM-R47MTAA
1.0	±20%	1.0	60	50	3.6	3.8	3.1	3.4	TFM201610GHM-1R0MTAA
2.2	±20%	1.0	152	142	2.4	2.6	1.9	2.1	TFM201610GHM-2R2MTAA

* 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	
DC resistance	AX-114N	ADEX	
Rated current Isat	4284A+42841A+42842C	Keysight Technologies	
* Equivalent macaurament aquinment may be used			

* Equivalent measurement equipment may be used.

TEMPERATURE RANGE, INDIVIDUAL WEIGHT

Operating	Storage	Individual
temperature range *	temperature range **	weight
-40 to +125 °C	-40 to +125 °C	18 mg

* Operating temperature range includes self-temperature rise.

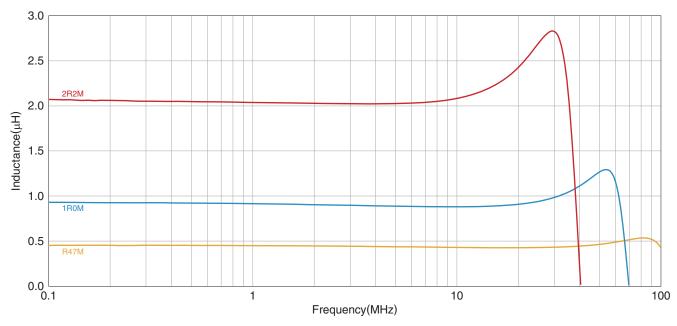
** The storage temperature range is for after the assembly.



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TFM201610GHM type

L FREQUENCY CHARACTERISTICS

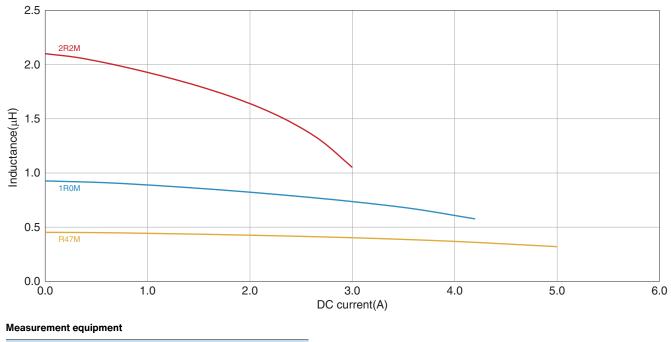


Measurement equipment

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

INDUCTANCE VS. DC BIAS CHARACTERISTICS



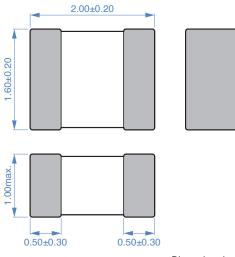
Product No.	Manufacturer			
4285A+42841A+42842C	Keysight Technologies			

* Equivalent measurement equipment may be used.

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

TFM201610GHM type

SHAPE & DIMENSIONS



Dimensions in mm

PACKAGING STYLE

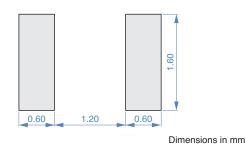
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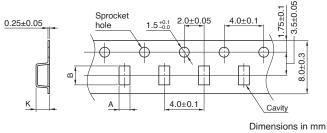
Dimensions in mm

TAPE DIMENSIONS

Dimensions in mm

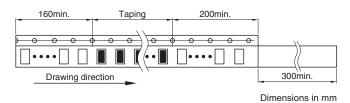
RECOMMENDED LAND PATTERN





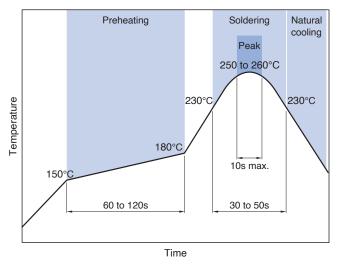


Туре	А	В	К
TFM201610GHM	1.8	2.2	1.1



PACKAGE QUANTITY

Package quantity	3000 pcs/reel



RECOMMENDED REFLOW PROFILE

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

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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

REMINDERS

The storage period is within 6 months. Be sure to follow the storage conditions (temperature: 5 to 40°C, humidity: 20 to 75% RH or less).

If the storage period elapses, the soldering of the terminal electrodes may deteriorate.

- ODo not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
- 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.
- OUse a wrist band to discharge static electricity in your body through the grounding wire.
- Obo not expose the products to magnets or magnetic fields.
- ODo 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 (cars, 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.

(4/4) 20231123