Common mode filters

Automotive power line（for power train/safety）
ACM-V series

AEC-Q200

ACM12V type

FEATURES

- Exclusive square type closed magnetic core designed as an exclusive core is used, so it can be small while maintaining the same features.
- Low profile design makes it optimal for surface mounting.
- Excellent impedance characteristics, making it great for suppressing common mode noise.
- It can handle up to a maximum of 16A, including temperature derating.
- Covers a wide operating temperature range from –40 to +125°C.
- Operating temperature range: –40 to +125°C (Does not include self-heating.)
- Compliant with AEC-Q200

APPLICATION

- Measures against common mode noise in power lines for various DC power lines, multimedia devices, and various electronic devices, including automotive power trains and safety applications.

PART NUMBER CONSTRUCTION

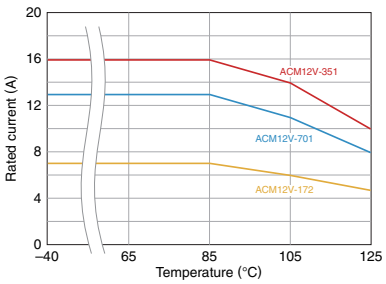
ACM	12V	-	701	-	2PL	-	TL	00
Series name	L×W×H dimensions 12.0×11.0×6.0 mm		Impedance (Ω) at 100MHz		Number of lines		Packaging style	Internal code

CHARACTERISTICS SPECIFICATION TABLE

Common mode impedance [at 100MHz]		DC resistance	Rated current Operating environment temperature			Rated voltage	Insulation resistance	Part No.
			-40~85 ℃	105 ℃	125 ℃			
(Ω)min.	(Ω)typ.	(mΩ)max.	(A)max.	(A)max.	(A)max.	(V)max.	(MΩ)min.	
240	350	2.9	16.0	14.0	10.0	80	10	ACM12V-351-2PL-TL00
500	700	6	13.0	11.0	8.0	80	10	ACM12V-701-2PL-TL00
1200	1700	12	7.0	6.0	4.8	80	10	ACM12V-172-2PL-TL00

* Please refer to the derating curve for the rated current.

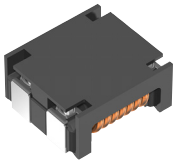
Derating



Measurement equipment

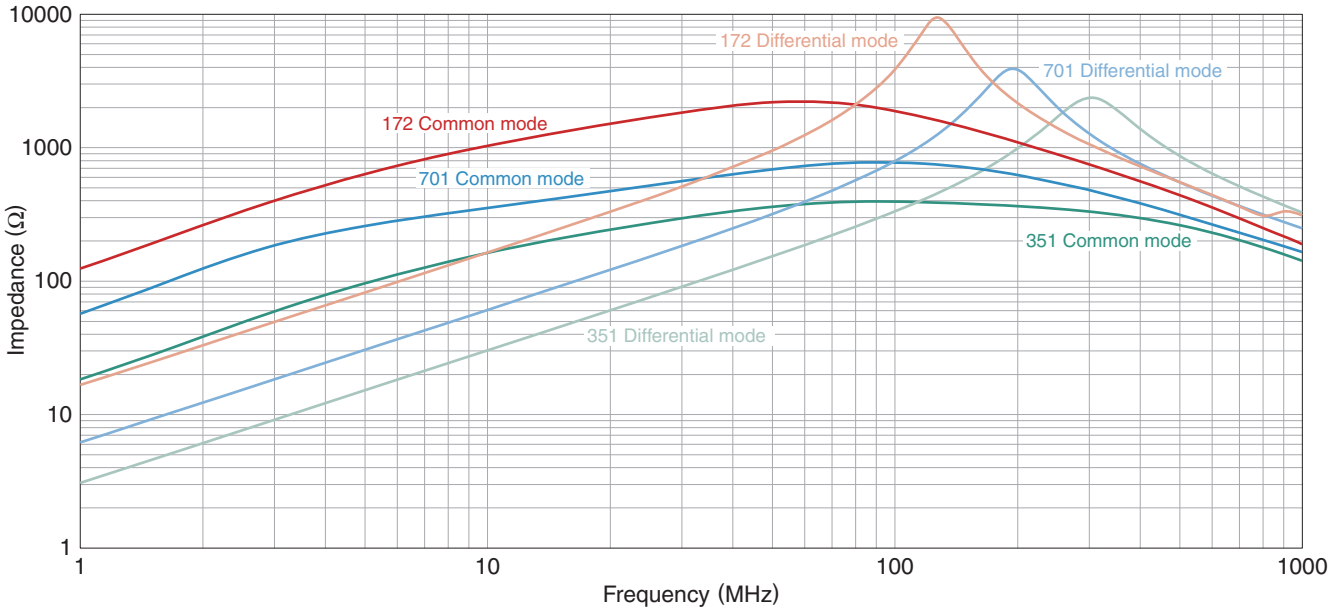
Measurement item	Product No.	Manufacturer
Common mode impedance	4991B	Keysight Technologies
DC resistance	RM3545	HIOKI E.E. CORPORATION
Insulation resistance	4339B	Keysight Technologies

* Equivalent measurement equipment may be used.



ACM12V type

IMPEDANCE VS. FREQUENCY CHARACTERISTICS



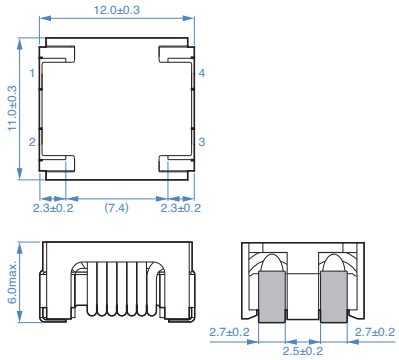
Measurement equipment

Product No.	Manufacturer
4991B	Keysight Technologies

* Equivalent measurement equipment may be used.

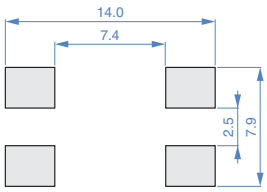
ACM12V type

SHAPE & DIMENSIONS



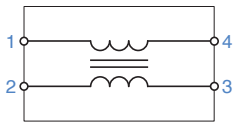
Dimensions in mm

RECOMMENDED LAND PATTERN



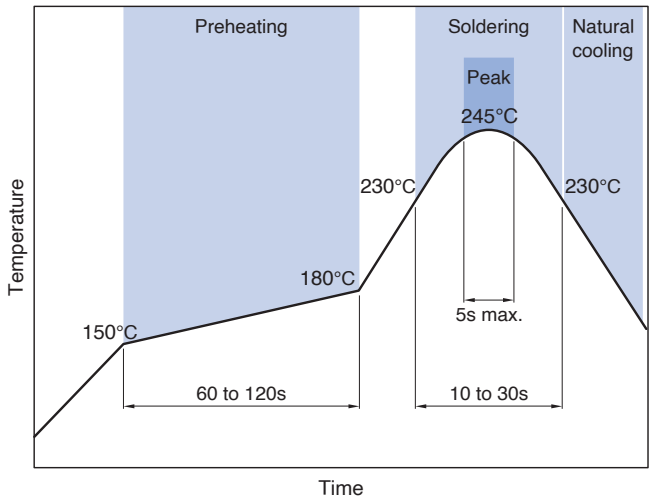
Dimensions in mm

CIRCUIT DIAGRAM



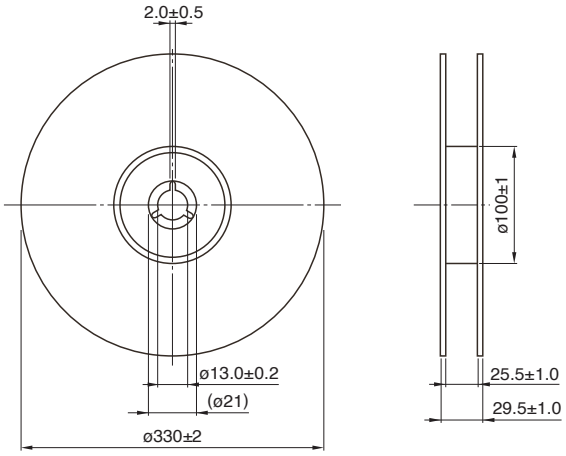
• No polarity

RECOMMENDED REFLOW PROFILE



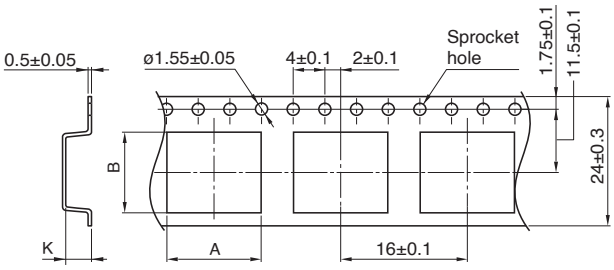
PACKAGING STYLE

REEL DIMENSIONS



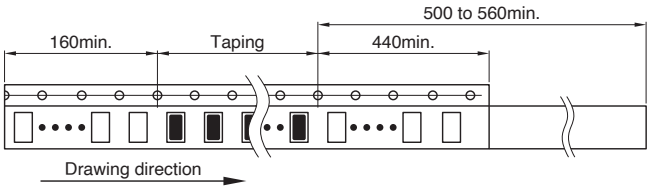
Dimensions in mm

TAPE DIMENSIONS



Dimensions in mm

Type	A	B	K
ACM12V	(13.2)	(13.5)	(6.4)



Dimensions in mm

PACKAGE QUANTITY

Package quantity	500 pcs/reel

TEMPERATURE RANGE, INDIVIDUAL WEIGHT

Operating temperature range *	Storage temperature range **	Individual weight
−40 to +125 °C	−40 to +125 °C	2.3 g

* The operating temperature range of this product does not include selfheating. The product can be used up to 150°C including self-heating.
When using the product in an environment at 125°C, use the product within the current range shown in the table on page 1/4 of this catalog.

** 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.
- Do 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.
- 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.