Inductors for decoupling circuits
Multilayer ferrite
MLZ series (for automotive)

RoHS REACH Halogen Free Lead Free

AEC-Q200

MLZ1005 type

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

FEATURES

- The MLZ series include inductors for decoupling circuits that have top-class DC superimposition characteristics and low DC resistance.
- They are compatible with wide frequency band noise, from low to high frequency.
- W type products are the new standard type products that have both large current and low resistance.
- Operating temperature range: -55 to +125°C

APPLICATION

- V2X, in-Vehicle Network, Safety, Comfort, xEV, Powertrain, Motorcycle

PART NUMBER CONSTRUCTION

MLZ	1005	M	R47	W	T	D25
Series name	L×W×H dimensions 1.0×0.5×0.5 mm	Product identification code	Inductance (µH)	Characteristic type	Packaging style	Internal code

CHARACTERISTICS SPECIFICATION TABLE

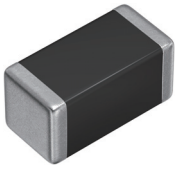
Type	L		L measuring conditions		DC resistance	Rated current	Reference value	Part No.
	(µH)	Tolerance	Frequency (MHz)	Current (mA)	(Ω)±30%	(Isat) *1 (mA)max.	(Itemp) *2 (mA)typ.	
Large current	0.47	±20%	2	0.1	0.16	120	500	MLZ1005MR47WTD25
	0.68	±20%	2	0.1	0.23	110	450	MLZ1005MR68WTD25
	1.00	±20%	2	0.1	0.28	100	450	MLZ1005M1R0WTD25
	1.50	±20%	2	0.1	0.43	80	350	MLZ1005M1R5WTD25
	2.20	±20%	2	0.1	0.55	60	350	MLZ1005M2R2WTD25

*1 Current assumed when inductance ratio has decreased by 50% max.
*2 Current assumed when temperature has risen to 20°C typ. (reference value). Operating temperature environment at this time: 105°C max.

Measurement equipment

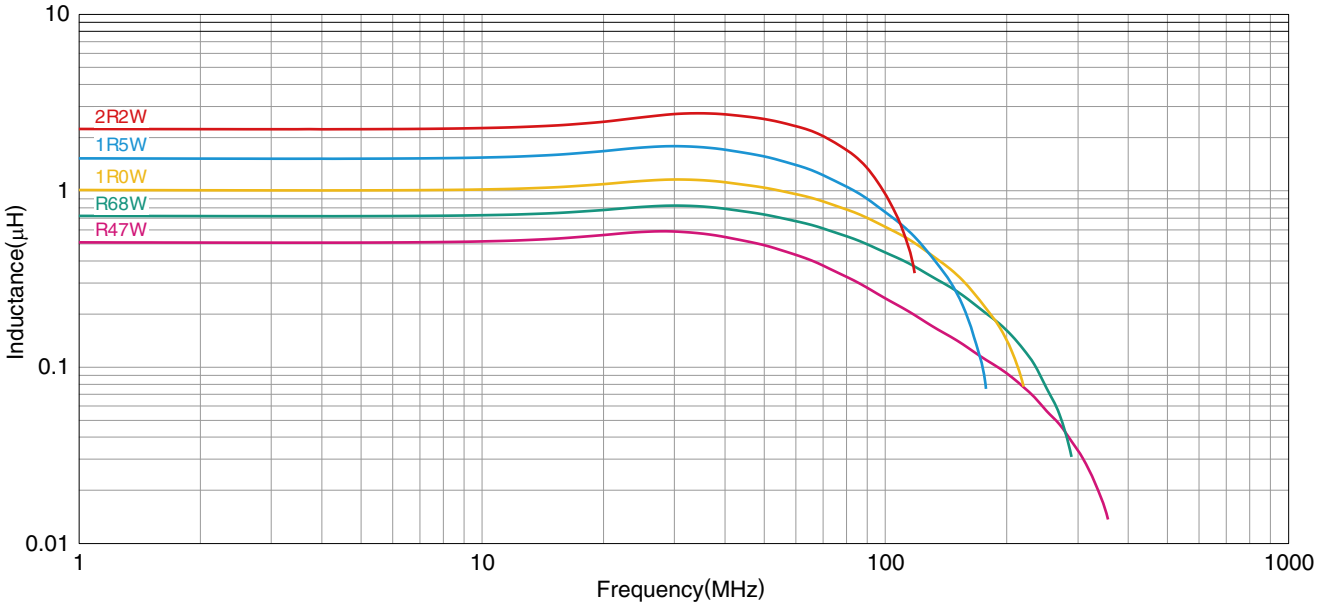
Measurement item	Product No.	Manufacturer
L	4294A+16034G	Keysight Technologies
DC resistance	Type-755611	Yokogawa

* Equivalent measurement equipment may be used.



MLZ1005 type

L FREQUENCY CHARACTERISTICS

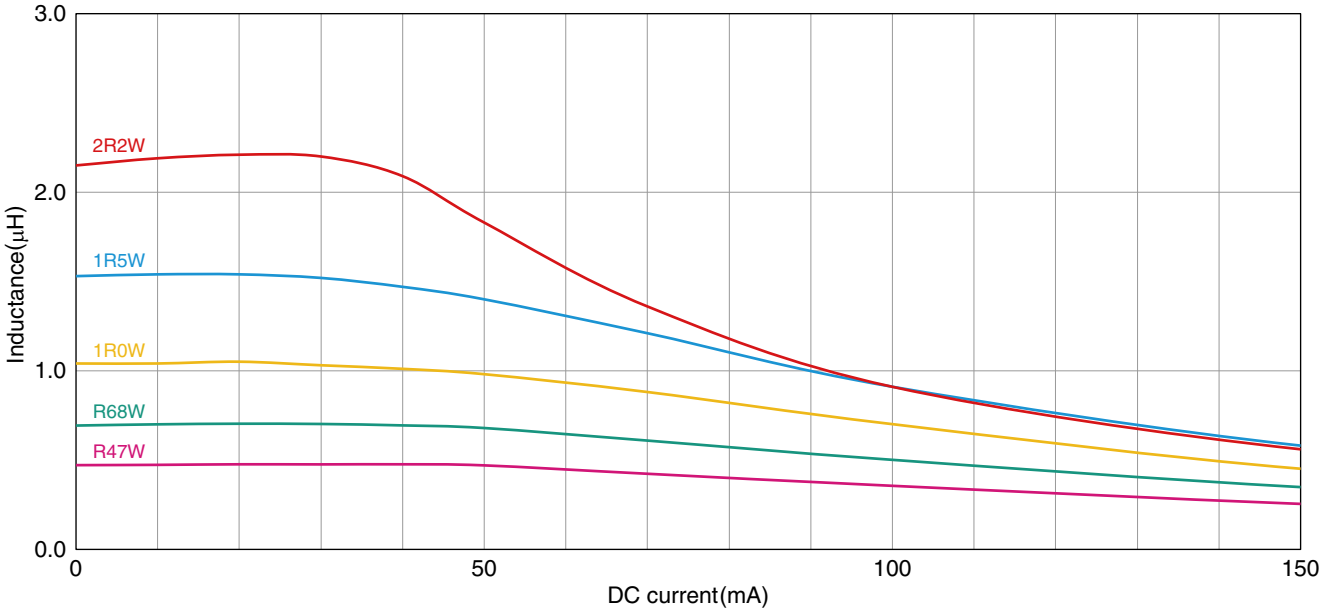


Measurement equipment

Product No.	Manufacturer
4991A+16192A	Keysight Technologies

* Equivalent measurement equipment may be used.

INDUCTANCE VS. DC BIAS CHARACTERISTICS



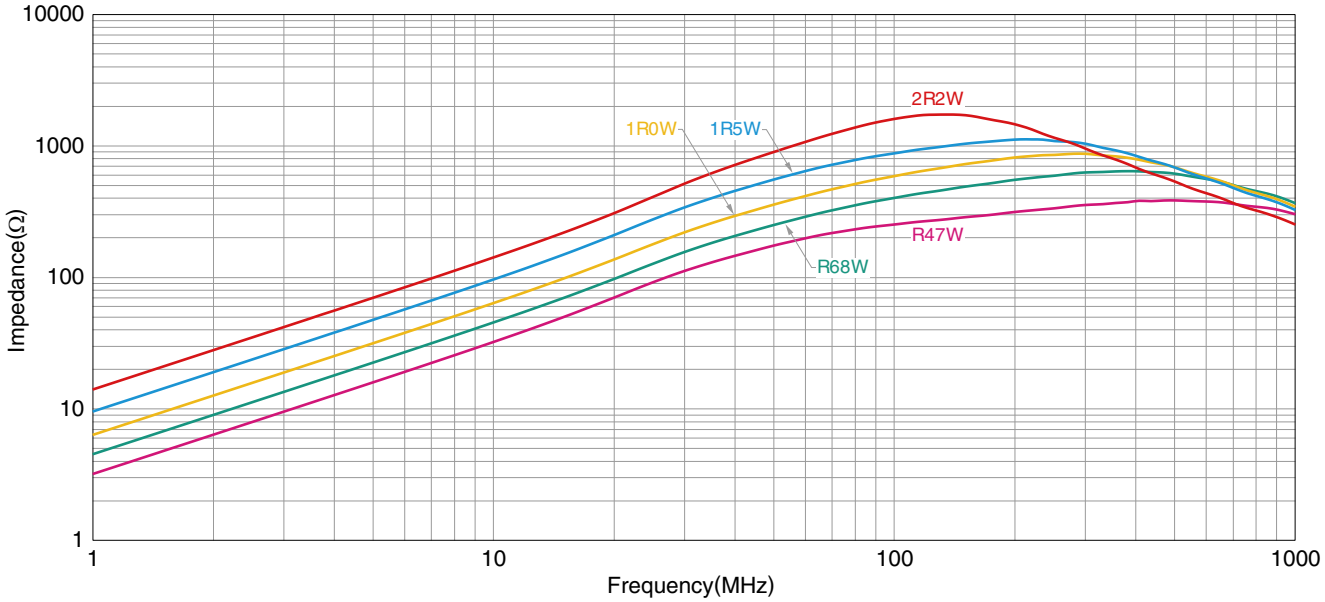
Measurement equipment

Product No.	Manufacturer
4291B+16200A+16192A	Keysight Technologies

* Equivalent measurement equipment may be used.

MLZ1005 type

IMPEDANCE VS. FREQUENCY CHARACTERISTICS



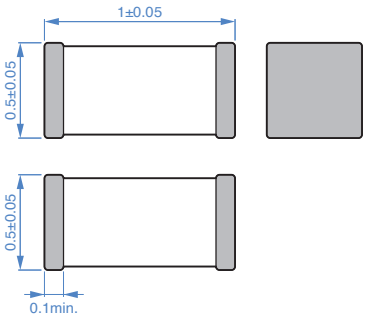
Measurement equipment

Product No.	Manufacturer
4991A+16192A	Keysight Technologies

* Equivalent measurement equipment may be used.

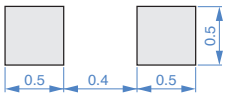
MLZ1005 type

SHAPE & DIMENSIONS



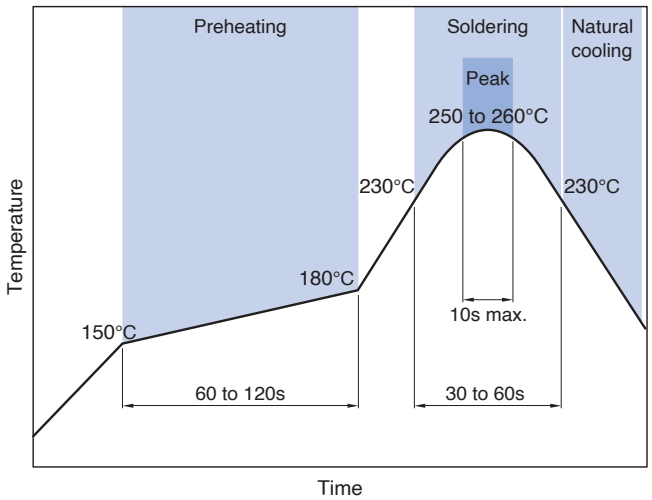
Dimensions in mm

RECOMMENDED LAND PATTERN



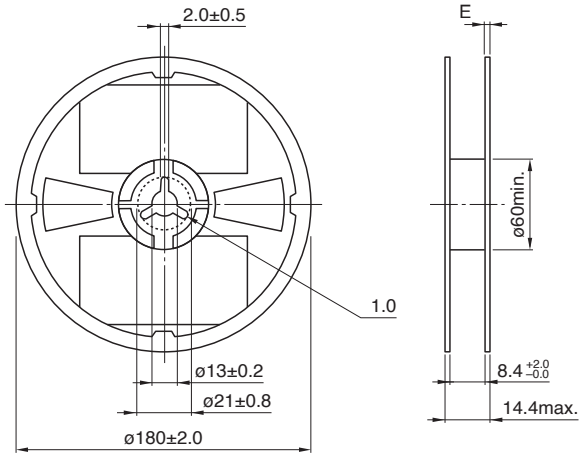
Dimensions in mm

RECOMMENDED REFLOW PROFILE



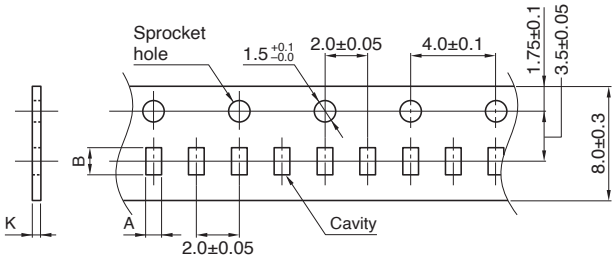
PACKAGING STYLE

REEL DIMENSIONS



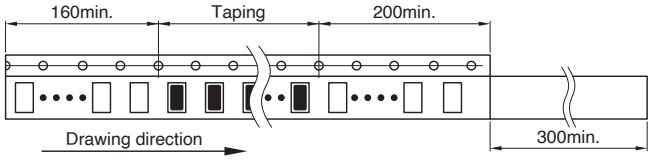
Dimensions in mm

TAPE DIMENSIONS



Dimensions in mm

Type	A	B	K
MLZ1005	0.65±0.1	1.15±0.1	0.8 max.



Dimensions in mm

PACKAGE QUANTITY

Package quantity	10000 pcs/reel

TEMPERATURE RANGE, INDIVIDUAL WEIGHT

Operating temperature range	Storage temperature range *	Individual weight
-55 to +125 °C	-55 to +125 °C	1.2 mg

* 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.