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

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

AEC-Q200

MLZ1608 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.
- L type products have a resistance up to 60% lower than W type products.
- Operating temperature range: –55 to +125°C

APPLICATION

- Automotive equipment, smart phones, tablet terminals, note PCs, various modules such as camera modules, DSCs, video games, portable memory audio devices, navigation systems, PNDs, WLANs, SSDs

PART NUMBER CONSTRUCTION

MLZ	1608	D	R10	D	T	D25
Series name	L×W×H dimensions 1.6×0.8×0.8 mm	Product internal code	Inductance (µH)	Characteristic type	Packaging style	Internal code

CHARACTERISTICS SPECIFICATION TABLE

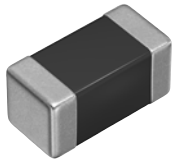
Type	L		L measuring conditions		DC resistance	Rated current (Isat)*1	Reference value (Itemp)*2	Part No.
			Frequency	Current				
	(µH)	Tolerance	(MHz)	(mA)	(Ω)±30%	(mA)max.	(mA)typ.	
High frequency	0.10	±20%	25	1.0	0.14	700	850	MLZ1608DR10DTD25
	0.22	±20%	25	1.0	0.27	550	600	MLZ1608DR22DTD25
	0.47	±20%	25	1.0	0.42	400	500	MLZ1608DR47DTD25
Large current	1.0	±20%	10	1.0	0.15	190	600	MLZ1608A1R0WTD25
	1.5	±20%	10	1.0	0.21	160	550	MLZ1608A1R5WTD25
	2.2	±20%	10	1.0	0.25	130	500	MLZ1608A2R2WTD25
	3.3	±20%	2	0.2	0.33	120	400	MLZ1608M3R3WTD25
	4.7	±20%	2	0.2	0.5	120	350	MLZ1608M4R7WTD25
	6.8	±20%	2	0.2	0.74	100	300	MLZ1608M6R8WTD25
	10	±20%	2	0.2	1.05	90	250	MLZ1608M100WTD25
	15	±20%	2	0.2	1.5	70	200	MLZ1608M150WTD25
	22	±20%	2	0.2	2.4	55	150	MLZ1608M220WTD25
Low resistance	1.0	±20%	2	0.2	0.11	140	700	MLZ1608N1R0LTD25
	1.5	±20%	2	0.2	0.14	130	600	MLZ1608N1R5LTD25
	2.2	±20%	2	0.2	0.18	110	500	MLZ1608N2R2LTD25
	3.3	±20%	2	0.2	0.27	85	450	MLZ1608N3R3LTD25
	4.7	±20%	2	0.2	0.32	80	400	MLZ1608N4R7LTD25
	6.8	±20%	2	0.2	0.5	80	350	MLZ1608N6R8LTD25
	10	±20%	2	0.2	0.6	60	300	MLZ1608N100LTD25
	15	±20%	2	0.2	1.02	55	250	MLZ1608N150LTD25
	22	±20%	2	0.2	1.65	50	190	MLZ1608N220LTD25

*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

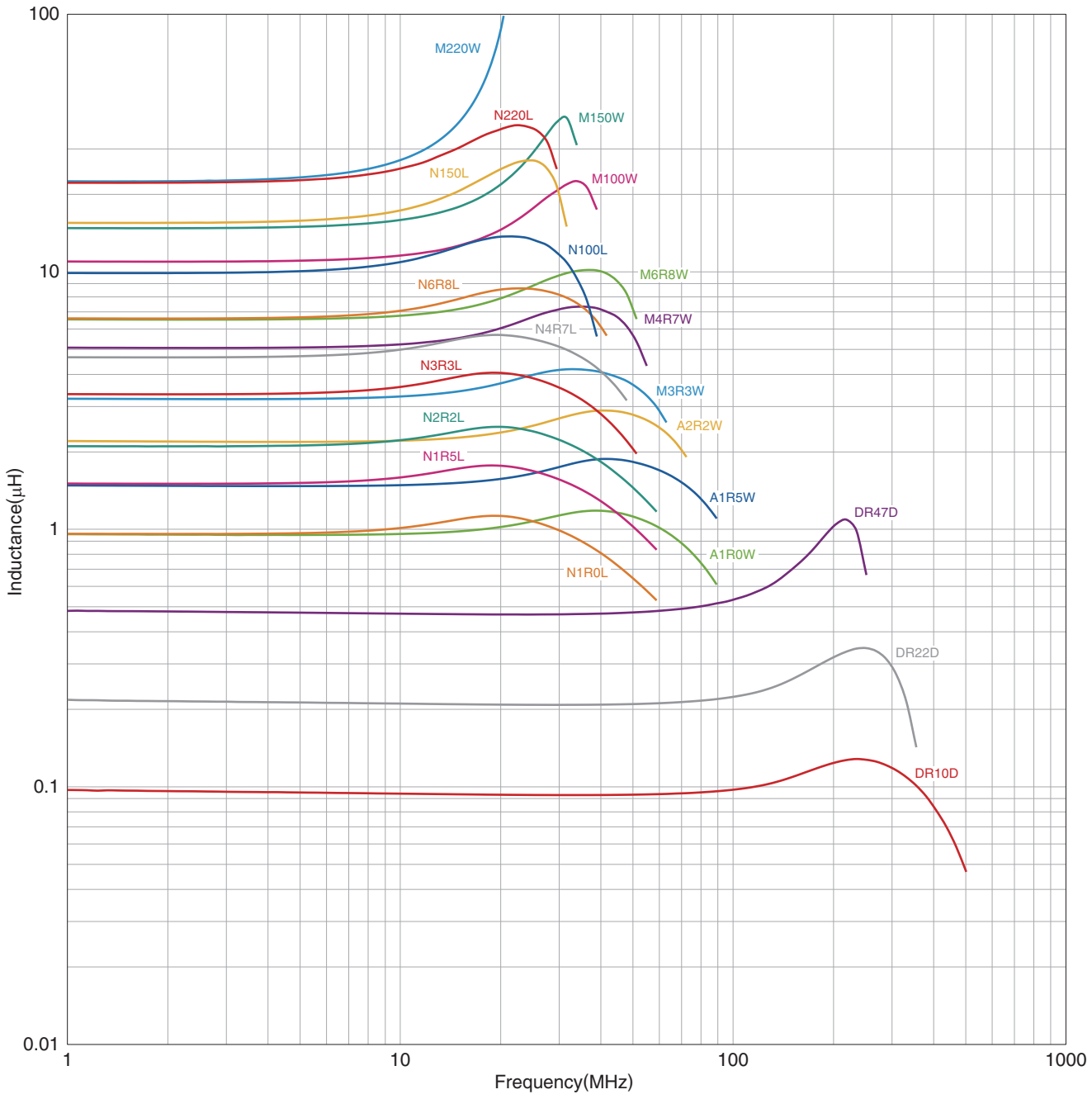
Measurement item	Product No.	Manufacturer
L	4294A+16034G	Keysight Technologies
DC resistance	Type-7561	Yokogawa

∗ Equivalent measurement equipment may be used.



MLZ1608 type

L FREQUENCY CHARACTERISTICS



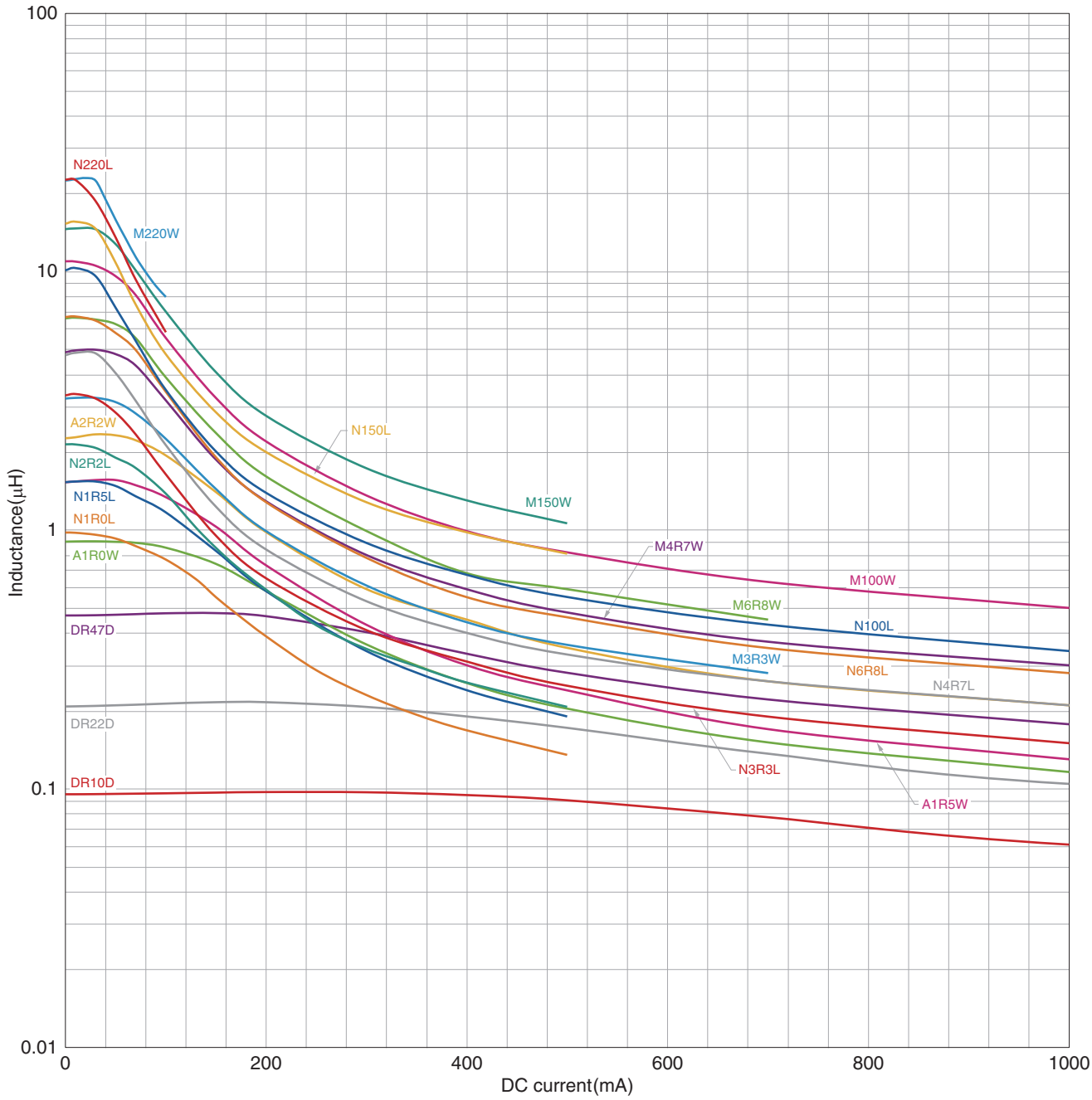
Measurement equipment

Product No.	Manufacturer
E4991A+16192A	Keysight Technologies

* Equivalent measurement equipment may be used.

MLZ1608 type

INDUCTANCE VS. DC BIAS CHARACTERISTICS



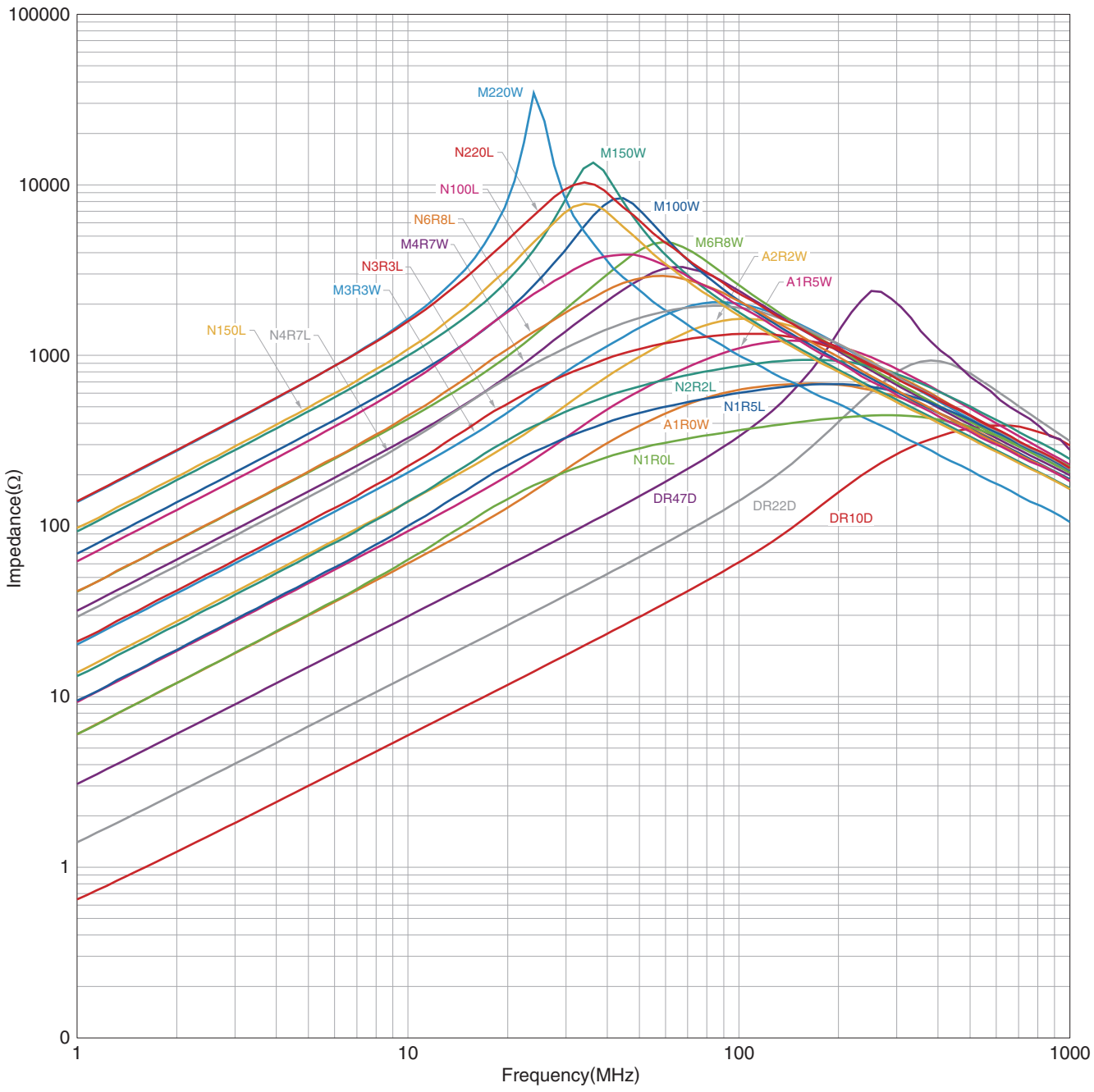
Measurement equipment

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

∗ Equivalent measurement equipment may be used.

MLZ1608 type

IMPEDANCE VS. FREQUENCY CHARACTERISTICS



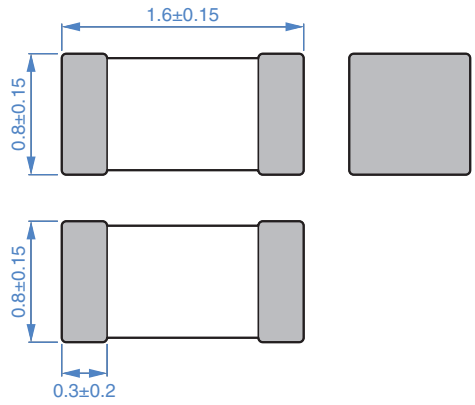
Measurement equipment

Product No.	Manufacturer
E4991A+16192A	Keysight Technologies

* Equivalent measurement equipment may be used.

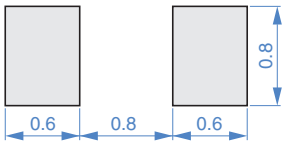
MLZ1608 type

SHAPE & DIMENSIONS



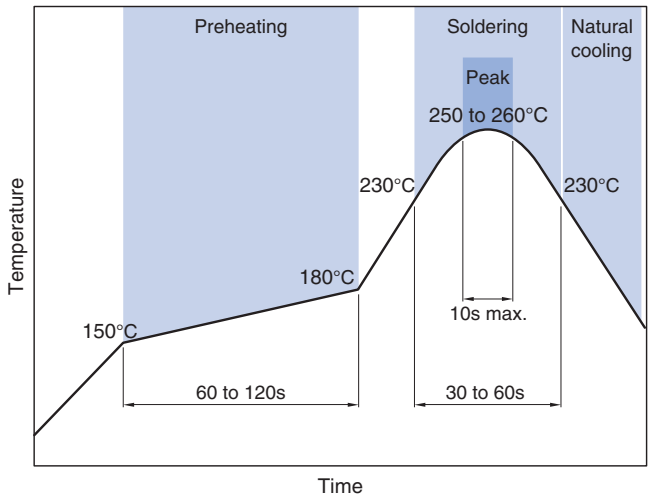
Dimensions in mm

RECOMMENDED LAND PATTERN



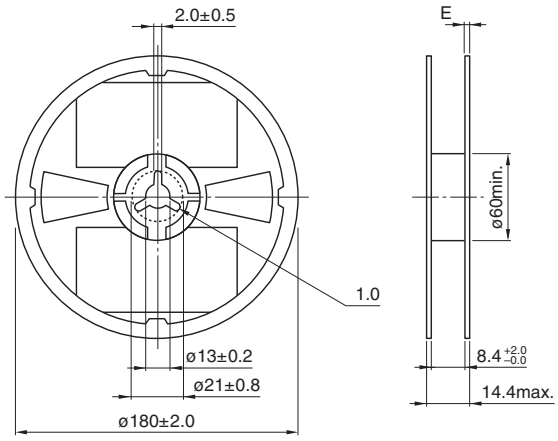
Dimensions in mm

RECOMMENDED REFLOW PROFILE



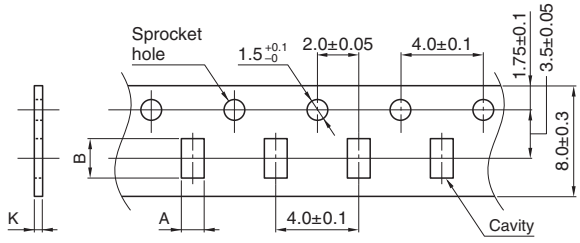
PACKAGING STYLE

REEL DIMENSIONS



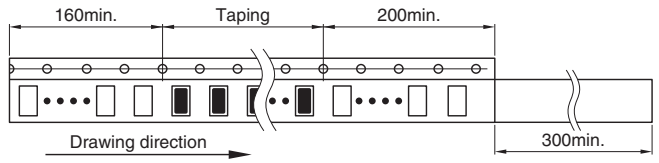
Dimensions in mm

TAPE DIMENSIONS



Dimensions in mm

Type	A	B	K
MLZ1608	1.1±0.2	1.9±0.2	1.1 max.



Dimensions in mm

PACKAGE QUANTITY

Package quantity	4000 pcs/reel

TEMPERATURE RANGE, INDIVIDUAL WEIGHT

Operating temperature range	Storage temperature range*	Individual weight
–55 to +125 °C	–55 to +125 °C	4 mg

*The storage temperature range is for after the assembly.

⚠ 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.

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 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 (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.