

## Inductors for decoupling circuits

## Multilayer ferrite

## MLZ series



## MLZ2012 type



## 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.
- H type products have a rated current that is equivalent to that of wound coils.
- 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 (including self-temperature rise)

## APPLICATION

- 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	2012	M	1R0	H	T	000
Series name	LxWxH dimensions 2.0x1.25x0.85 mm 2.0x1.25x1.25 mm	Product internal code	Inductance ( $\mu\text{H}$ )	Characteristic type	Packaging style	Internal code

## CHARACTERISTICS SPECIFICATION TABLE

Type	L		Thickness T (mm)	L measuring conditions		DC resistance ( $\Omega$ ) $\pm$ 30%	Rated current (I <sub>sat</sub> ) <sup>*1</sup> (mA)max.	Reference value (I <sub>temp</sub> ) <sup>*2</sup> (mA)typ.	Part No.
	( $\mu\text{H}$ )	Tolerance		Frequency (MHz)	Current (mA)				
Ultra-large current	1.0	$\pm$ 20%	1.25	2	0.1	0.10	700	800	<a href="#">MLZ2012M1R0HT000</a>
	1.5	$\pm$ 20%	1.25	2	0.1	0.14	550	700	<a href="#">MLZ2012M1R5HT000</a>
	2.2	$\pm$ 20%	1.25	2	0.1	0.16	400	600	<a href="#">MLZ2012M2R2HT000</a>
	3.3	$\pm$ 20%	1.25	2	0.1	0.20	350	500	<a href="#">MLZ2012M3R3HT000</a>
	4.7	$\pm$ 20%	1.25	2	0.1	0.34	300	400	<a href="#">MLZ2012M4R7HT000</a>
	6.8	$\pm$ 20%	1.25	2	0.1	0.40	220	350	<a href="#">MLZ2012M6R8HT000</a>
High frequency	10	$\pm$ 20%	1.25	2	0.1	0.68	200	300	<a href="#">MLZ2012M100HT000</a>
	0.10	$\pm$ 20%	0.85	25	1.0	0.07	1000	1150	<a href="#">MLZ2012DR10DT000</a>
	0.22	$\pm$ 20%	0.85	25	1.0	0.13	800	900	<a href="#">MLZ2012DR22DT000</a>
	0.47	$\pm$ 20%	1.25	25	1.0	0.18	550	700	<a href="#">MLZ2012DR47DT000</a>

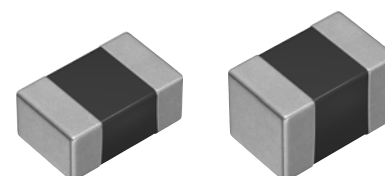
\*1 Current assumed when inductance ratio has decreased by 50% max..

\*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.



# MLZ2012 type

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Type	L		Thickness T (mm)	L measuring conditions		DC resistance ( $\Omega$ ) $\pm$ 30%	Rated current (I <sub>sat</sub> ) <sup>*1</sup> (mA)max.	Reference value (I <sub>temp</sub> ) <sup>*2</sup> (mA)typ.	Part No.
	( $\mu$ H)	Tolerance		Frequency (MHz)	Current (mA)				
Large current	1.00	$\pm$ 20%	0.85	10	1.0	0.10	280	900	<a href="#">MLZ2012A1R0WT000</a>
	1.50	$\pm$ 20%	0.85	10	1.0	0.13	250	750	<a href="#">MLZ2012A1R5WT000</a>
	2.20	$\pm$ 20%	0.85	10	1.0	0.15	210	650	<a href="#">MLZ2012A2R2WT000</a>
	3.30	$\pm$ 20%	0.85	10	1.0	0.34	200	450	<a href="#">MLZ2012A3R3WT000</a>
	4.70	$\pm$ 20%	0.85	2	0.1	0.30	180	500	<a href="#">MLZ2012M4R7WT000</a>
	6.80	$\pm$ 20%	1.25	2	0.1	0.40	160	400	<a href="#">MLZ2012M6R8WT000</a>
	10.0	$\pm$ 20%	1.25	2	0.1	0.47	150	350	<a href="#">MLZ2012M100WT000</a>
	15.0	$\pm$ 20%	1.25	2	0.1	0.95	120	250	<a href="#">MLZ2012M150WT000</a>
	22.0	$\pm$ 20%	1.25	2	0.1	1.25	100	220	<a href="#">MLZ2012P220WT000</a>
	22.0	$\pm$ 20%	1.25	2	0.1	2.0	60	220	<a href="#">MLZ2012M220WT000</a>
Low resistance	33.0	$\pm$ 20%	1.25	2	0.1	2.60	55	190	<a href="#">MLZ2012M330WT000</a>
	47.0	$\pm$ 20%	1.25	2	0.1	3.70	50	170	<a href="#">MLZ2012M470WT000</a>
	1.00	$\pm$ 20%	0.85	2	0.1	0.06	220	1150	<a href="#">MLZ2012N1R0LT000</a>
	1.50	$\pm$ 20%	0.85	2	0.1	0.10	190	900	<a href="#">MLZ2012N1R5LT000</a>
	2.20	$\pm$ 20%	0.85	2	0.1	0.12	170	800	<a href="#">MLZ2012N2R2LT000</a>
	3.30	$\pm$ 20%	0.85	2	0.1	0.15	130	750	<a href="#">MLZ2012N3R3LT000</a>
	4.70	$\pm$ 20%	0.85	2	0.1	0.18	130	600	<a href="#">MLZ2012N4R7LT000</a>
	6.80	$\pm$ 20%	0.85	2	0.1	0.25	110	550	<a href="#">MLZ2012N6R8LT000</a>
	10.0	$\pm$ 20%	1.25	2	0.1	0.30	110	500	<a href="#">MLZ2012N100LT000</a>
	15.0	$\pm$ 20%	1.25	2	0.1	0.47	90	350	<a href="#">MLZ2012N150LT000</a>
22.0	$\pm$ 20%	1.25	2	0.1	0.67	70	300	<a href="#">MLZ2012N220LT000</a>	
100.0	$\pm$ 20%	1.25	2	0.1	3.50	30	140	<a href="#">MLZ2012N101LT000</a>	

\*1 Current assumed when inductance ratio has decreased by 50% max..

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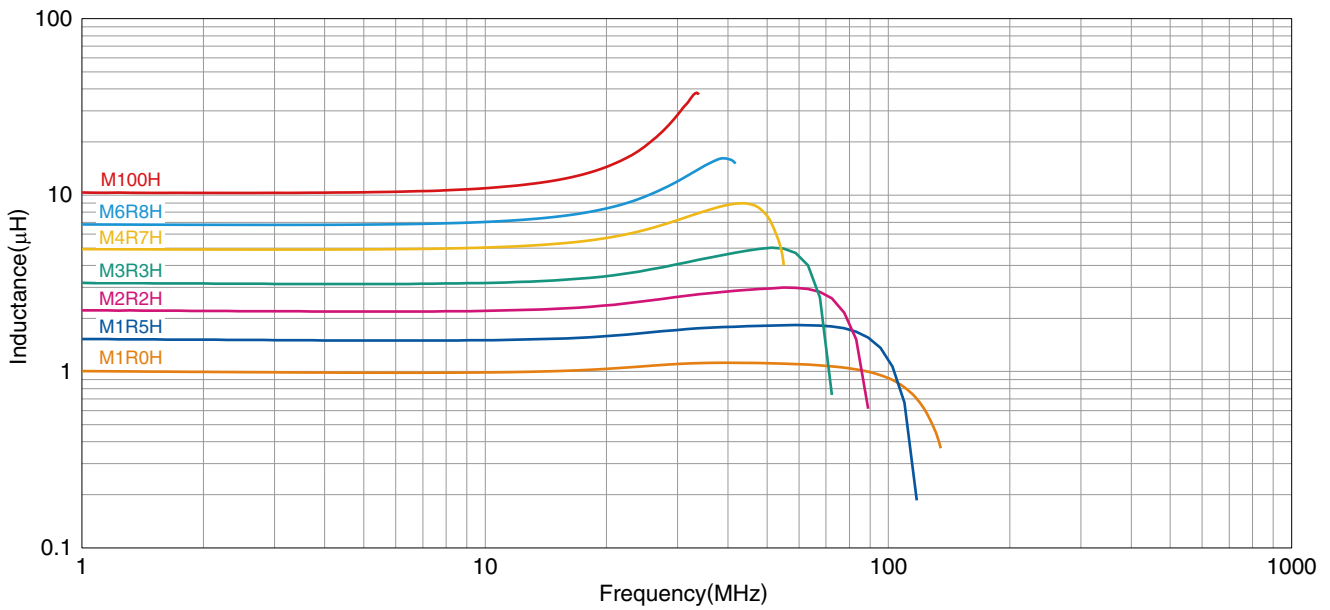
### Measurement equipment

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

\* Equivalent measurement equipment may be used.

# MLZ2012 type

## L FREQUENCY CHARACTERISTICS H CHARACTERISTIC PRODUCT

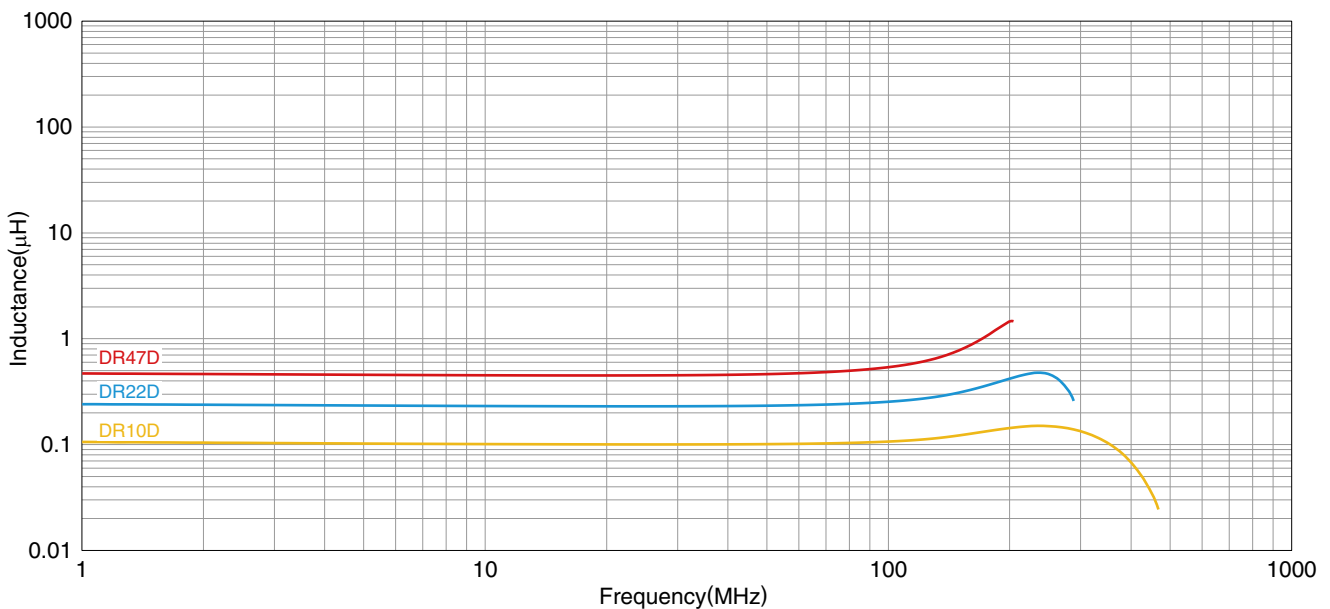


Measurement equipment

Product No.	Manufacturer
E4991A+16192A	Keysight Technologies

\* Equivalent measurement equipment may be used.

## L FREQUENCY CHARACTERISTICS D CHARACTERISTIC PRODUCT



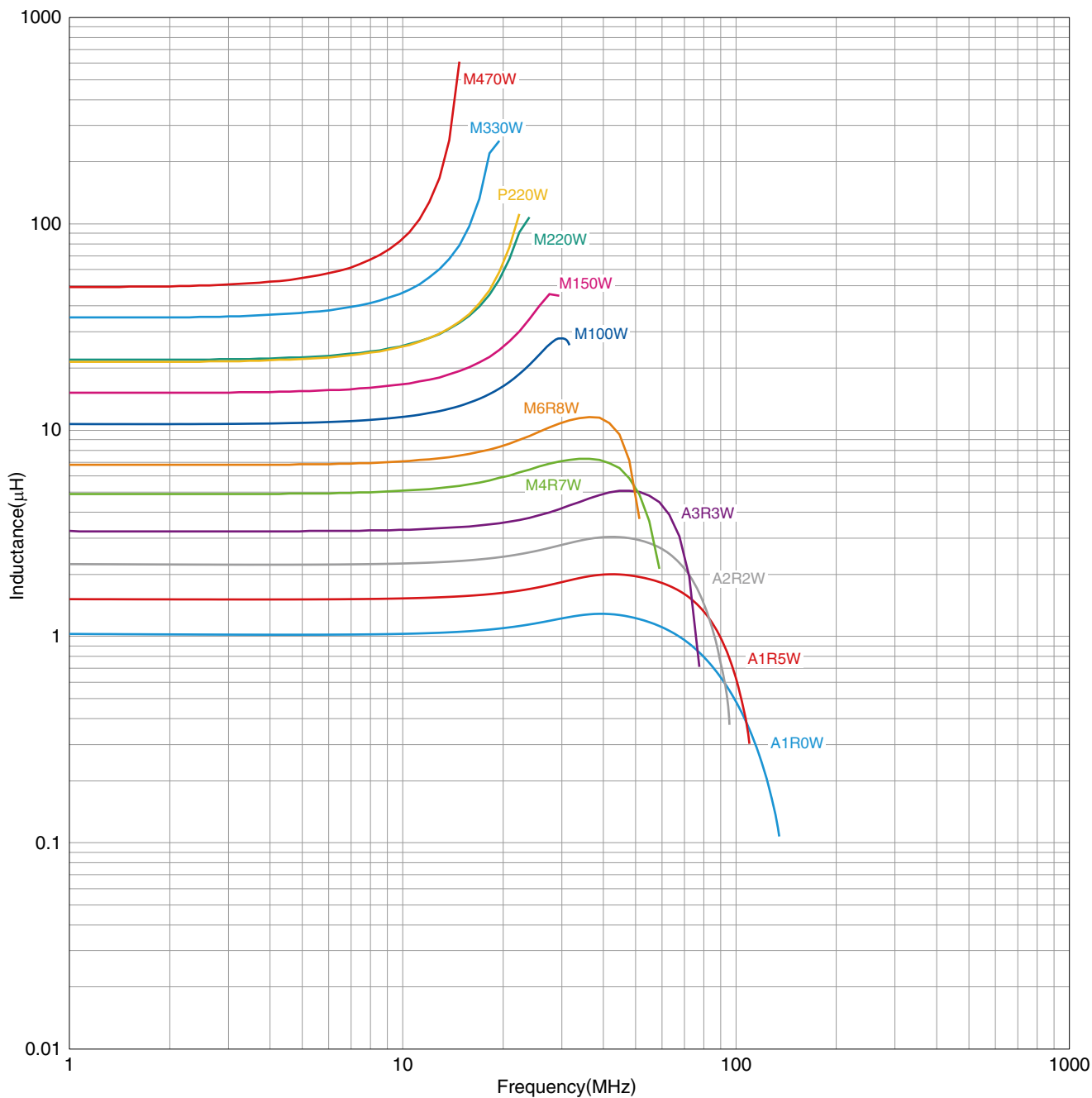
Measurement equipment

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E4991A+16192A	Keysight Technologies

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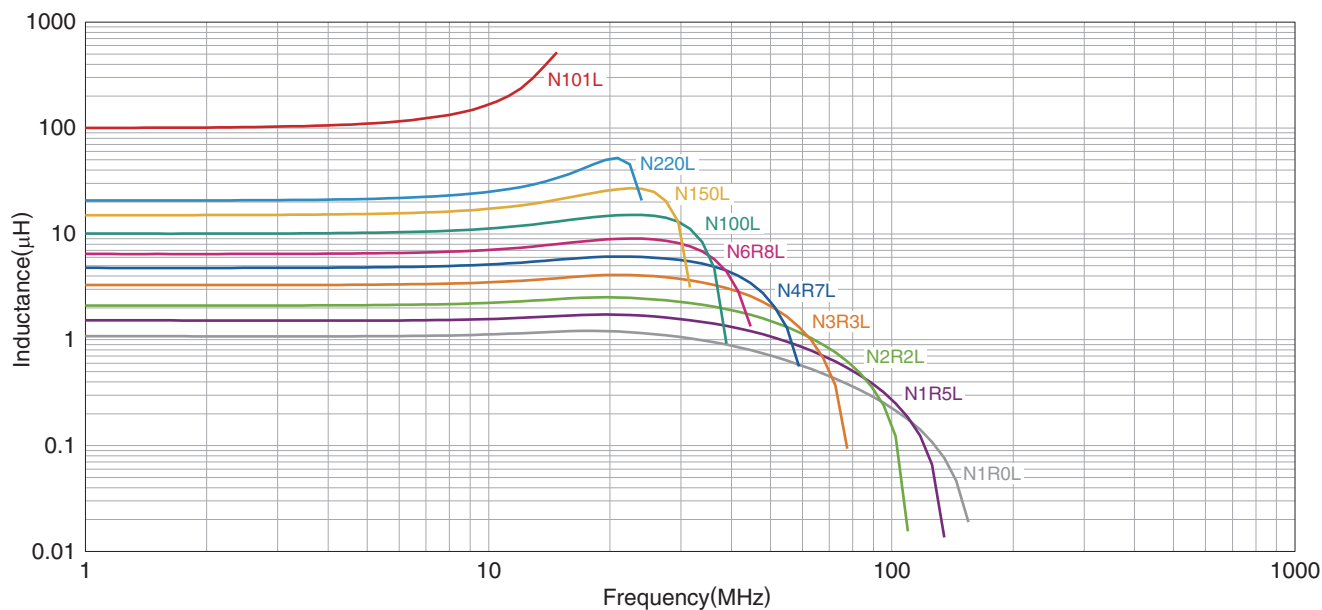
Measurement equipment

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

\* Equivalent measurement equipment may be used.

# MLZ2012 type

## ■ L FREQUENCY CHARACTERISTICS L CHARACTERISTIC PRODUCT



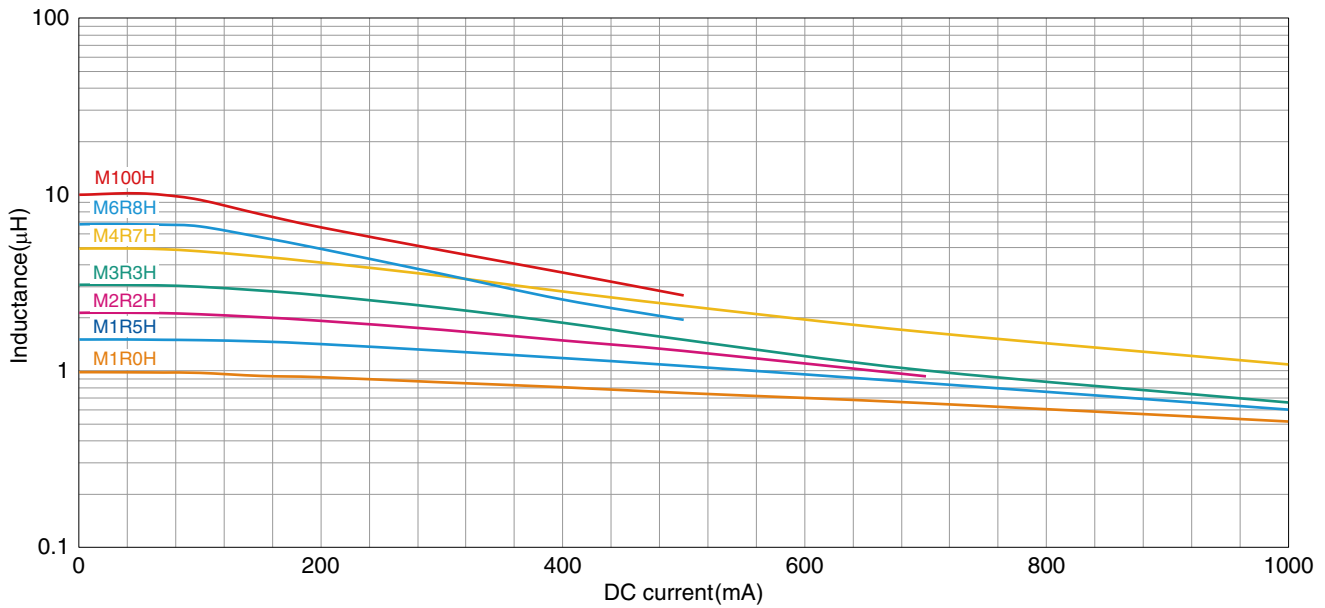
Measurement equipment

Product No.	Manufacturer
E4991A+16192A	Keysight Technologies

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# MLZ2012 type

## INDUCTANCE VS. DC BIAS CHARACTERISTICS H CHARACTERISTIC PRODUCT

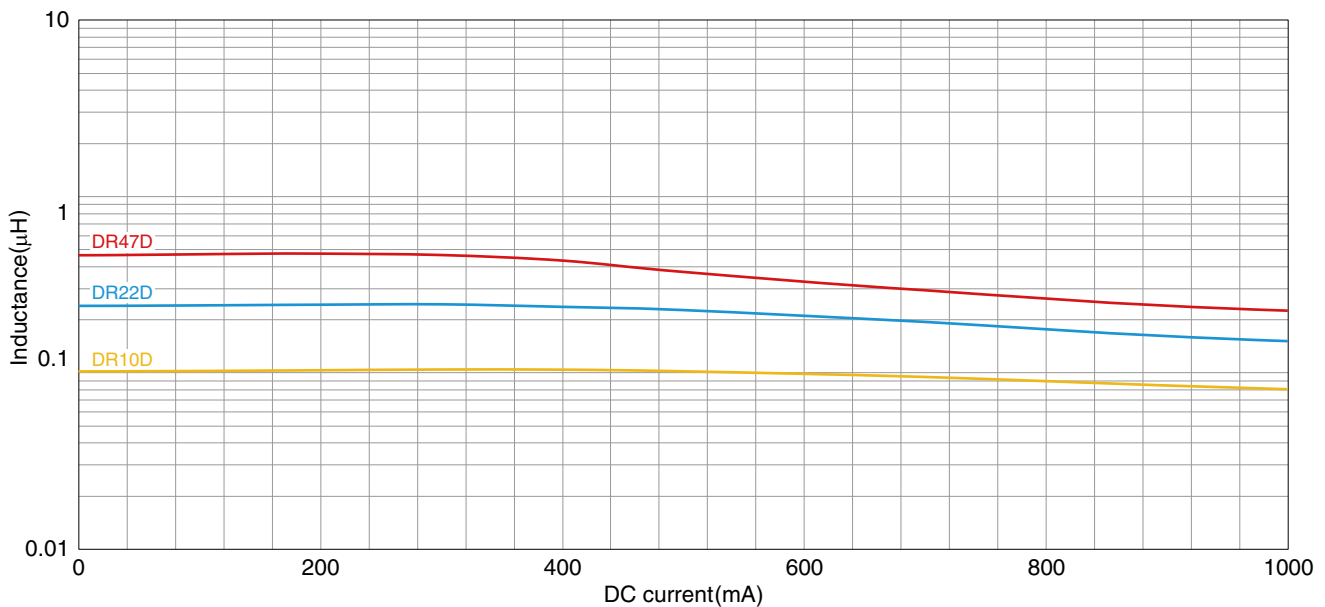


Measurement equipment

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

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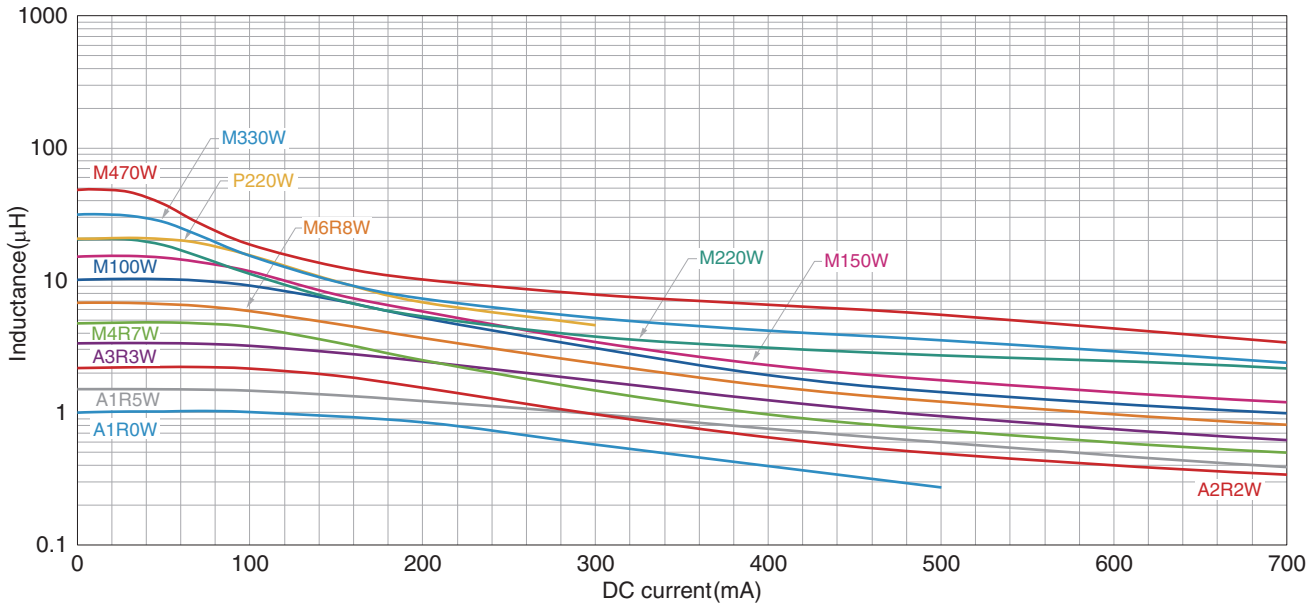
Measurement equipment

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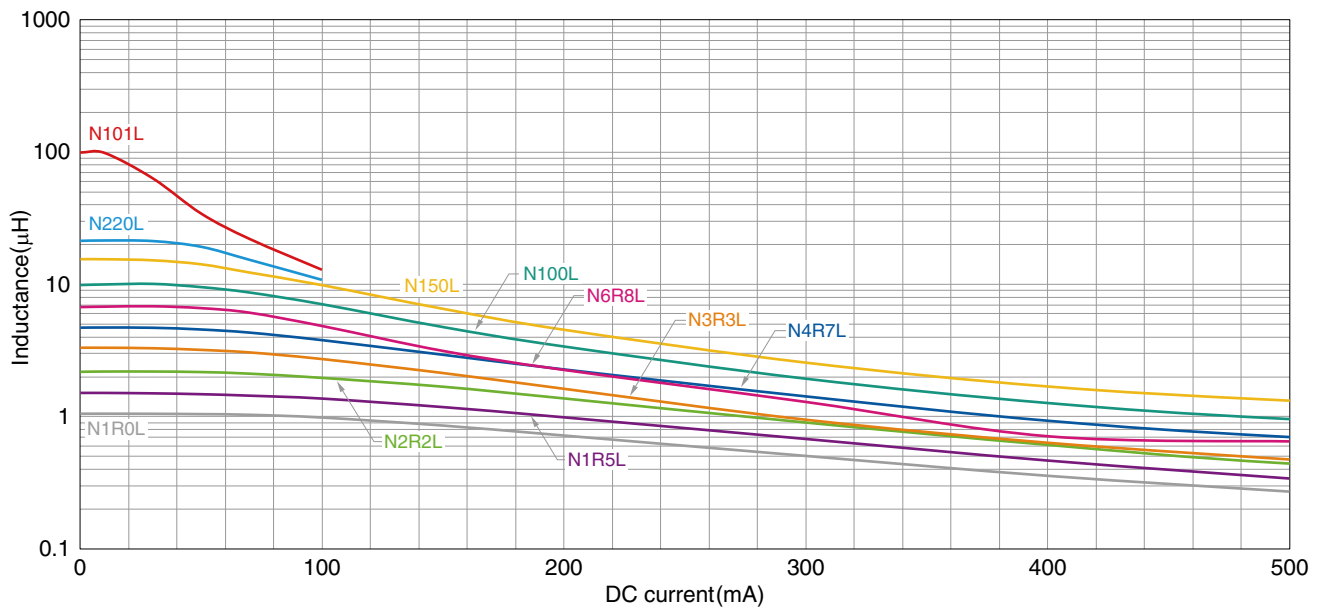


Measurement equipment

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

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## INDUCTANCE VS. DC BIAS CHARACTERISTICS L CHARACTERISTIC PRODUCT



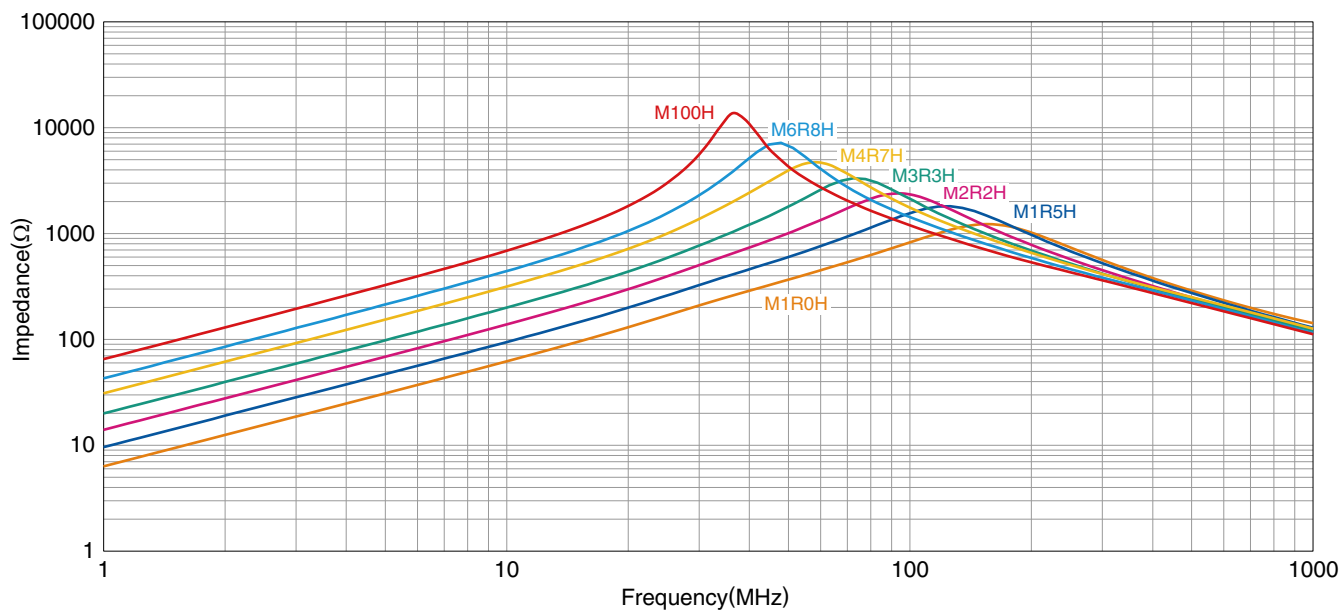
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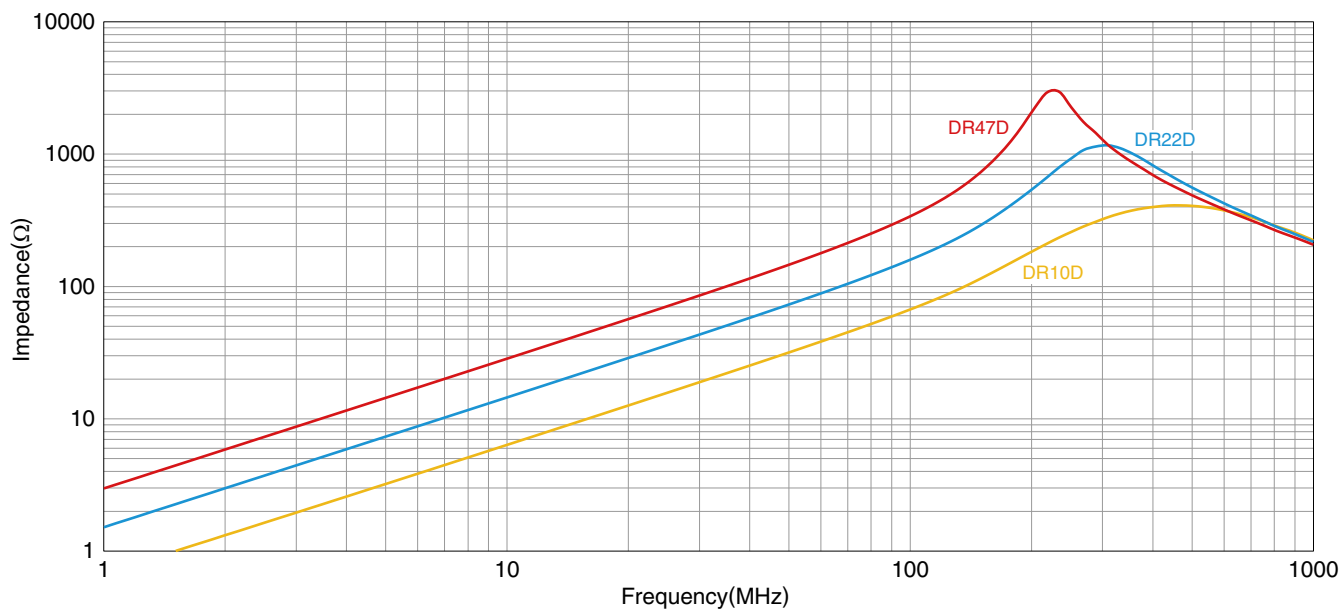


Measurement equipment

Product No.	Manufacturer
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Measurement equipment

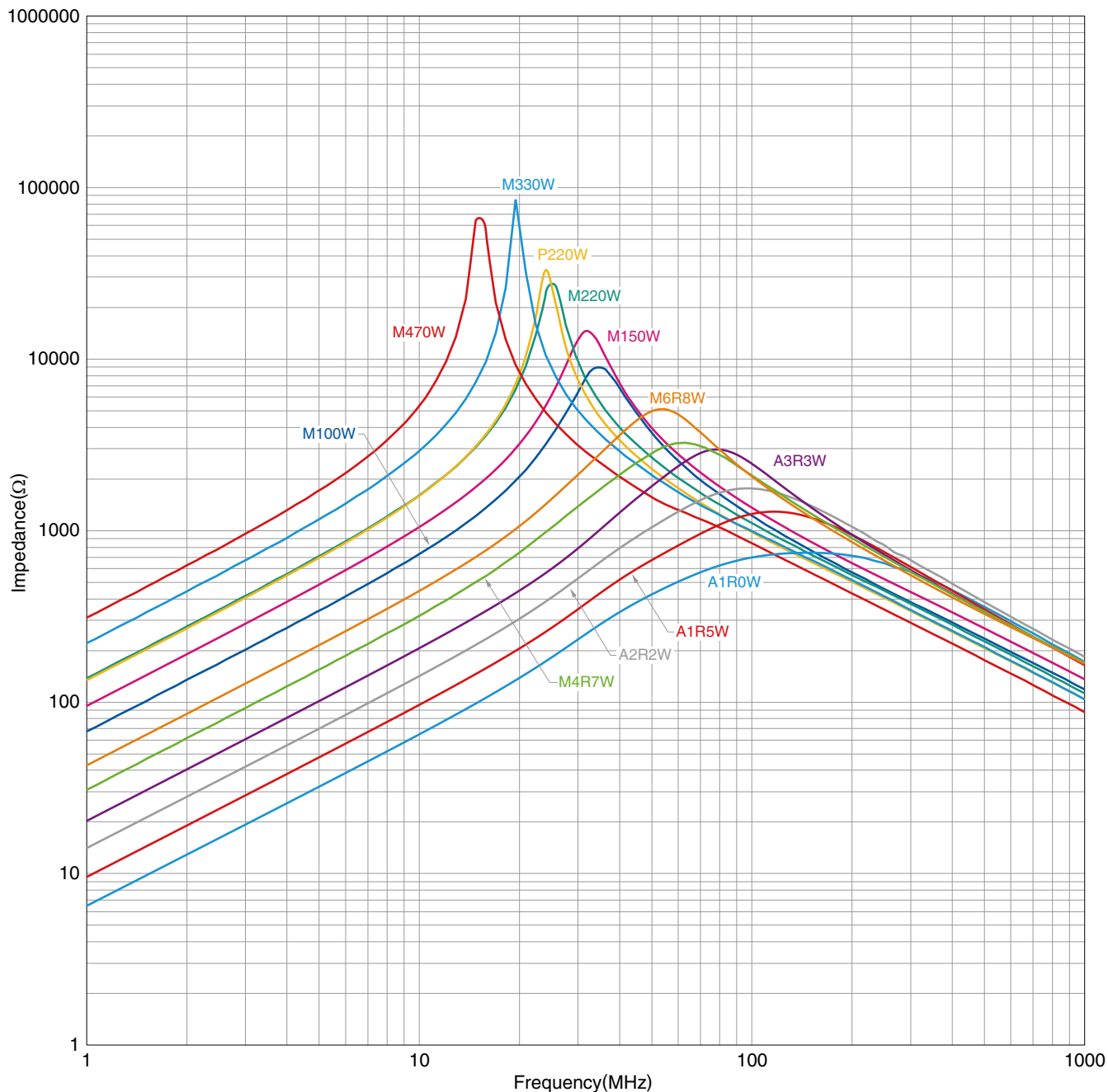
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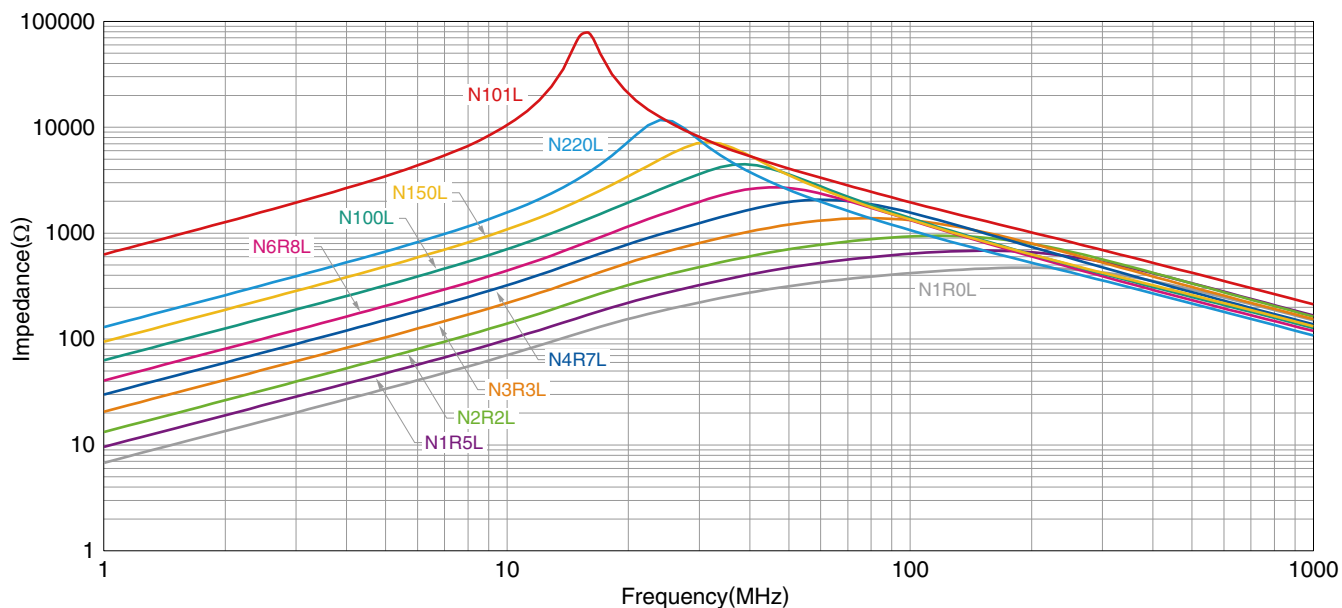
Measurement equipment

Product No.	Manufacturer
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Measurement equipment

Product No.	Manufacturer
E4991A+16192A	Keysight Technologies

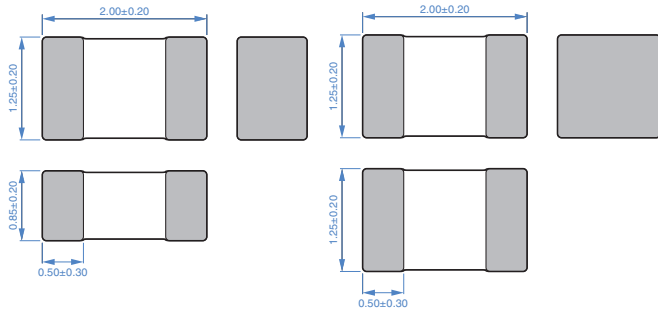
\* Equivalent measurement equipment may be used.

# MLZ2012 type

## SHAPE & DIMENSIONS

t=0.85mm

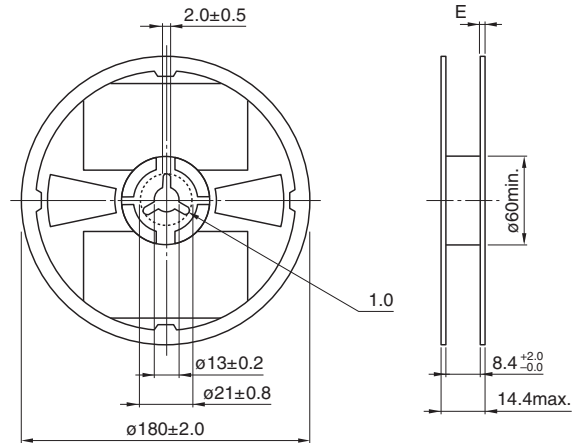
t=1.25mm



Dimensions in mm

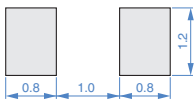
## PACKAGING STYLE

### REEL DIMENSIONS



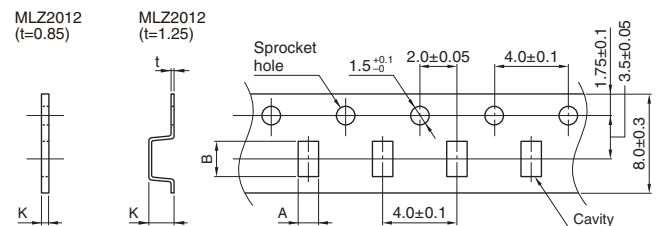
Dimensions in mm

## RECOMMENDED LAND PATTERN



Dimensions in mm

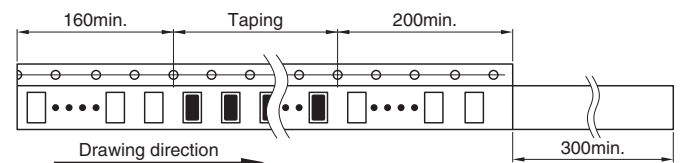
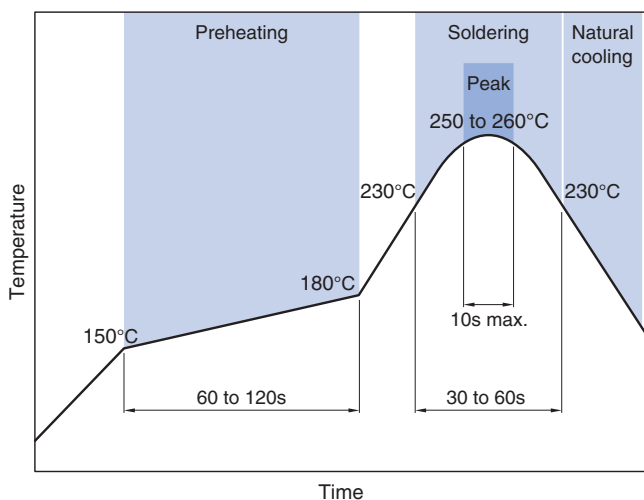
### TAPE DIMENSIONS



Dimensions in mm

Type		A	B	K
MLZ2012	t=0.85	1.5±0.2	2.3±0.2	1.1 max.
	t=1.25	1.5±0.2	2.3±0.2	1.5 max.

## RECOMMENDED REFLOW PROFILE



Dimensions in mm

### PACKAGE QUANTITY

Package quantity	t=0.85mm	4000 pcs/reel
	t=1.25mm	2000 pcs/reel

## TEMPERATURE RANGE, INDIVIDUAL WEIGHT

Type	Operating temperature range*	Storage temperature range**	Individual weight
t=0.85mm	-55 to +125 °C	-55 to +125 °C	10 mg
t=1.25mm	-55 to +125 °C	-55 to +125 °C	14 mg

\* Operating temperature range includes self-temperature rise.

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