



# Chip beads

For general signal line

## MMZ series

# MMZ2012<sub>Type</sub>

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MMZ2012

2012[0805 inch]\*

\* Dimensions code JIS[EIA]

## 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 less than 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 (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.

# Chip beads

## For general signal line

Product compatible with RoHS directive  
Halogen-free  
Compatible with lead-free solders

# Overview of MMZ2012 type

## FEATURES

- Noise reduction solution for general signal line.
- Various frequency characteristics with 4 materials of different features for countermeasures against everything from general signals to high-speed signals.

## APPLICATION

- Noise removal for mobile devices such as smartphones and tablet terminals, and various modules.
- Noise removal for PCs and recorders, household appliances such as STBs, smart grids, and industrial equipment.

## PART NUMBER CONSTRUCTION

Series name	LxWxT dimensions (mm)		Material name	Impedance ( $\Omega$ ) at 100MHz		Characteristic type	Packaging style		Internal code
MMZ	2012	2.0x1.25x0.85	D	121	120	A	T	Taping	000
			R	150	15	B			
			S						
			Y						

## OPERATING TEMPERATURE RANGE, PACKAGE QUANTITY, PRODUCT WEIGHT

Type	Temperature ranges		Package quantity (pieces/reel)	Individual weight (mg)
	Operating temperature (°C)	Storage temperature* (°C)		
MMZ2012	-55 to +125	-55 to +125	4,000	8

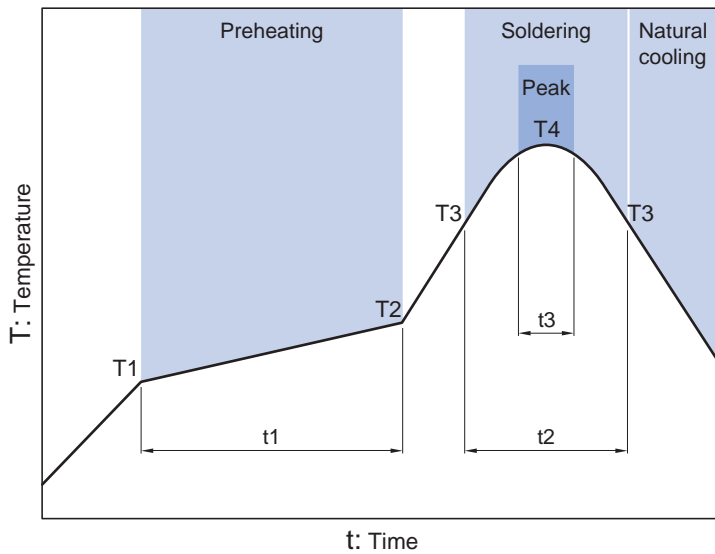
\* The storage temperature range is for after the circuit board is mounted.

- RoHS Directive Compliant Product: See the following for more details.<https://product.tdk.com/info/en/environment/rohs/index.html>
- Halogen-free: indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

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# MMZ2012 type

## RECOMMENDED REFLOW PROFILE



Preheating			Soldering		Peak	
Temp.	Temp.	Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3
150°C	180°C	60 to 120s	230°C	30 to 60s	250 to 260°C	10s

# MMZ2012 type

## MATERIAL CHARACTERISTIC

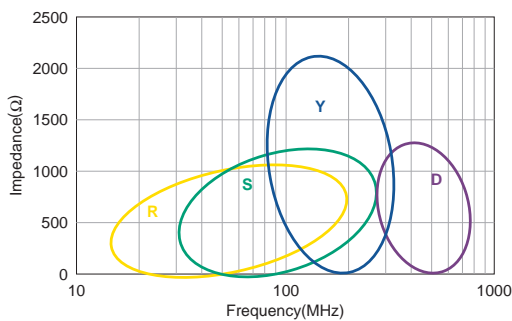
**R material:** for wide frequency applications calling for broad impedance characteristics. For digital signal line applications calling requiring good waveform integrity. Impedance values selected for effectiveness at 10 to 200MHz.

**S material:** Standard type that features impedance characteristics similar to those of a typical ferrite core. For signal line applications in which the blocking region is near 100MHz. Impedance values selected for effectiveness at 40 to 300MHz.

**Y material:** High frequency range type intended for the 100MHz region and above. For signal line applications in which the signal frequency is far from the cutoff frequency. Impedance values selected for effectiveness at 80 to 400MHz.

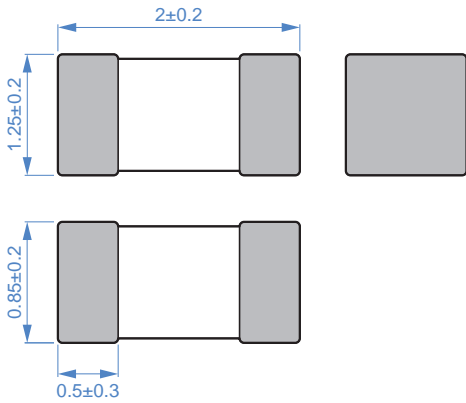
**D material:** For applications calling for low insertion loss at low frequencies and sharply increasing impedance at high frequencies. Designed for high impedance at high frequencies (300MHz to 1GHz) for signal line applications.

## TYPICAL MATERIAL IMPEDANCE CHARACTERISTICS



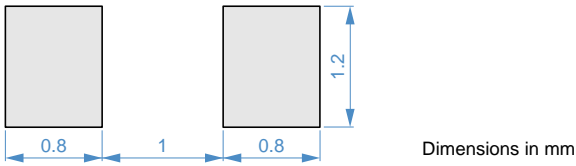
# MMZ2012 type

## SHAPE & DIMENSIONS




Dimensions in mm

## RECOMMENDED LAND PATTERN



Dimensions in mm

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# MMZ2012 type

## ELECTRICAL CHARACTERISTICS

### CHARACTERISTICS SPECIFICATION TABLE

Impedance [100MHz] ( $\Omega$ )		DC resistance ( $\Omega$ )max.	Rated current (mA)max.	Part No.
	Tolerance			
15	$\pm 25\%$	0.05	1500	MMZ2012R150AT000
30	$\pm 25\%$	0.05	1500	MMZ2012R300AT000
60	$\pm 25\%$	0.10	1000	MMZ2012R600AT000
120	$\pm 25\%$	0.12	800	MMZ2012R121AT000
300	$\pm 25\%$	0.15	600	MMZ2012R301AT000
600	$\pm 25\%$	0.20	500	MMZ2012R601AT000
1000	$\pm 25\%$	0.30	500	MMZ2012R102AT000
40	$\pm 25\%$	0.10	1000	MMZ2012S400AT000
80	$\pm 25\%$	0.10	800	MMZ2012S800AT000
120	$\pm 25\%$	0.15	800	MMZ2012S121AT000
180	$\pm 25\%$	0.15	600	MMZ2012S181AT000
300	$\pm 25\%$	0.20	600	MMZ2012S301AT000
600	$\pm 25\%$	0.30	500	MMZ2012S601AT000
1000	$\pm 25\%$	0.35	500	MMZ2012S102AT000
15	$\pm 25\%$	0.05	1500	MMZ2012Y150BT000
30	$\pm 25\%$	0.05	1500	MMZ2012Y300BT000
60	$\pm 25\%$	0.10	1000	MMZ2012Y600BT000
120	$\pm 25\%$	0.12	800	MMZ2012Y121BT000
300	$\pm 25\%$	0.15	600	MMZ2012Y301BT000
600	$\pm 25\%$	0.20	500	MMZ2012Y601BT000
1000	$\pm 25\%$	0.30	500	MMZ2012Y102BT000
1500	$\pm 25\%$	0.40	500	MMZ2012Y152BT000
2000	$\pm 25\%$	0.50	400	MMZ2012Y202BT000
80	$\pm 25\%$	0.30	500	MMZ2012D800BT000
120	$\pm 25\%$	0.30	500	MMZ2012D121BT000
300	$\pm 25\%$	0.50	400	MMZ2012D301BT000

#### Measurement equipment

Measurement item	Product No.	Manufacturer
Impedance	E4991A+16192A	Keysight Technologies
DC resistance	Type-7556	Yokogawa

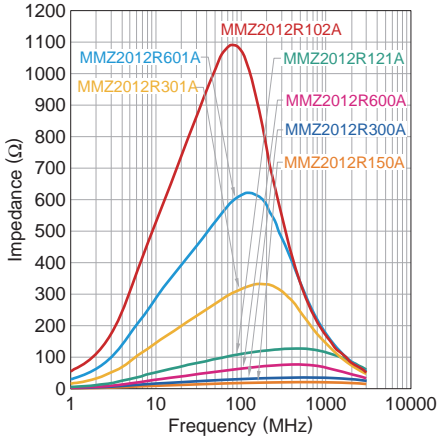
\* Equivalent measurement equipment may be used.

# MMZ2012 type

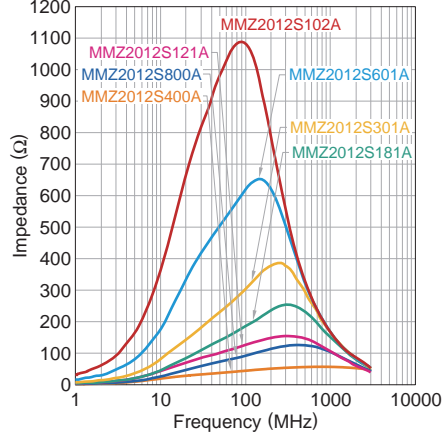
## ELECTRICAL CHARACTERISTICS

### Z VS. FREQUENCY CHARACTERISTICS (BY SERIES)

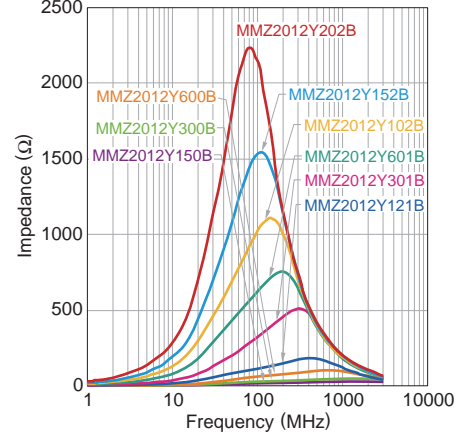
MMZ2012R series



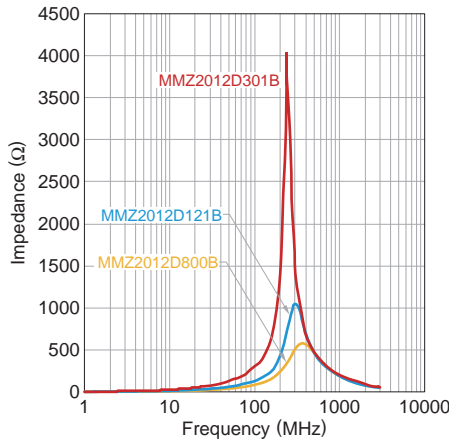
MMZ2012S series




MMZ2012Y series



MMZ2012D series



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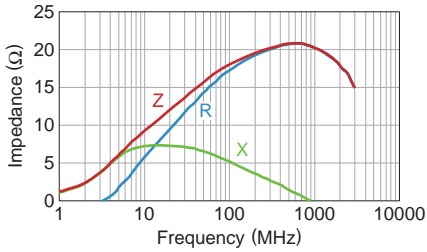


# MMZ2012 type

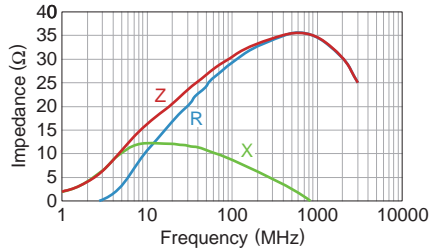
## ELECTRICAL CHARACTERISTICS

### Z, X, R VS. FREQUENCY CHARACTERISTICS

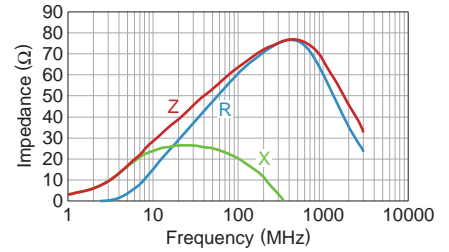
**MMZ2012R150AT000**



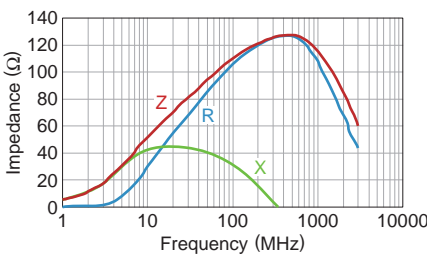
**MMZ2012R300AT000**



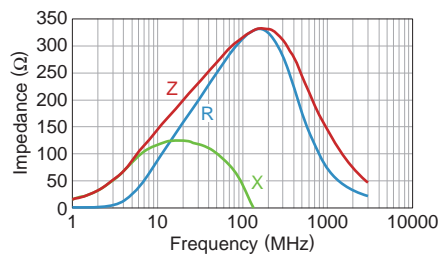
**MMZ2012R600AT000**



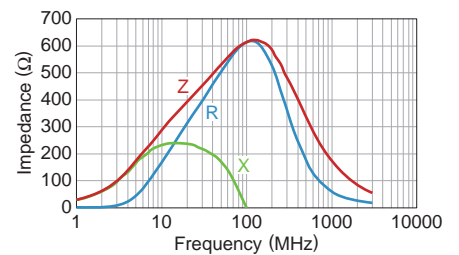
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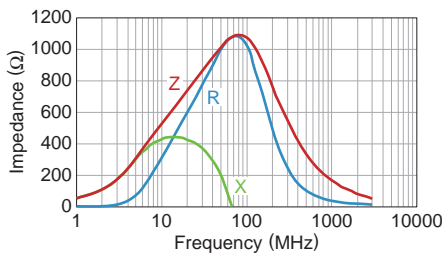
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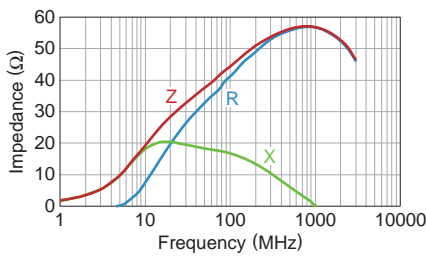
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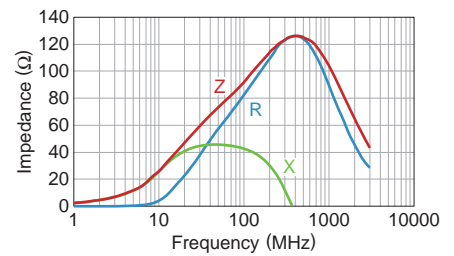
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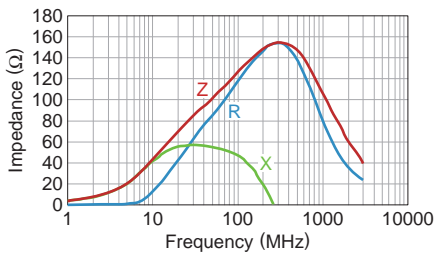
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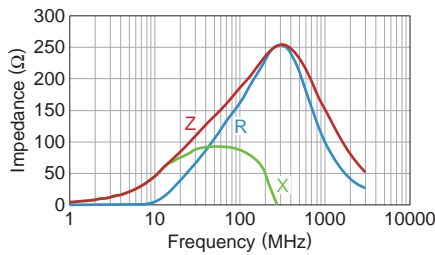
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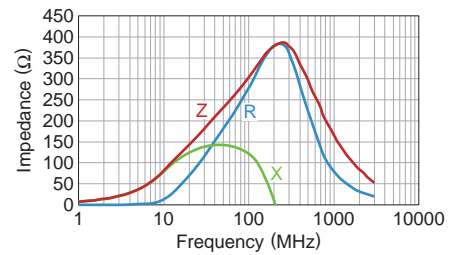
**MMZ2012S121AT000**



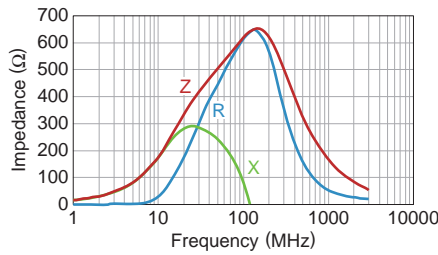
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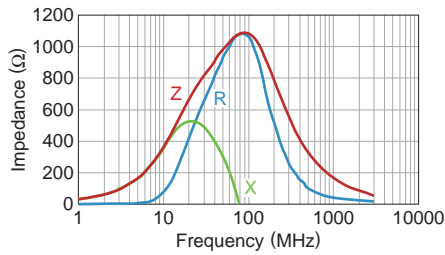
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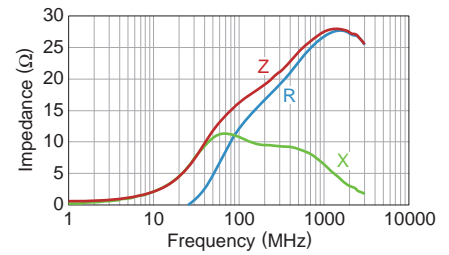
**MMZ2012S601AT000**




**MMZ2012S102AT000**



**MMZ2012Y150BT000**



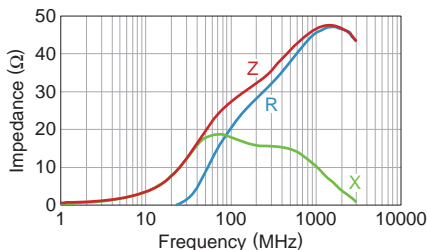
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# MMZ2012 type

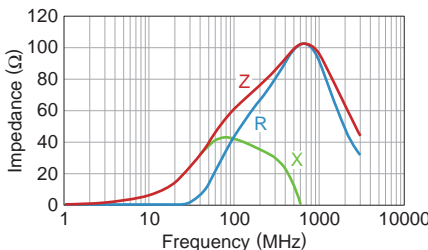
## ELECTRICAL CHARACTERISTICS

### Z, X, R VS. FREQUENCY CHARACTERISTICS

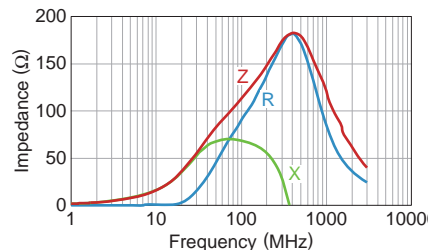
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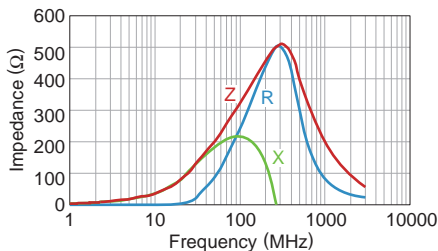
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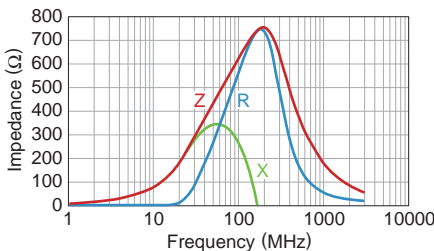
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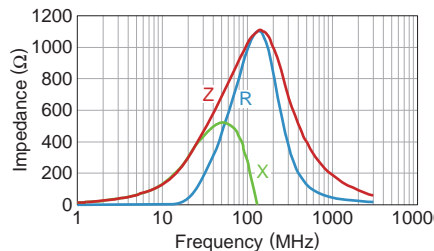
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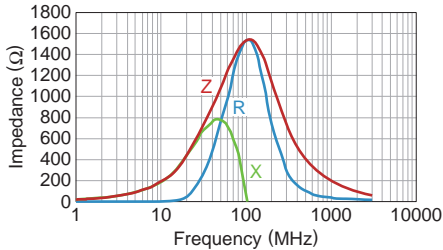
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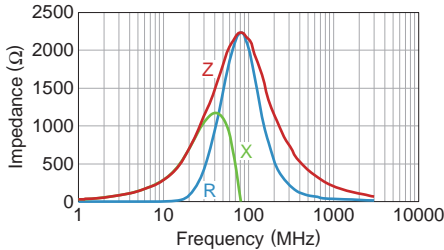
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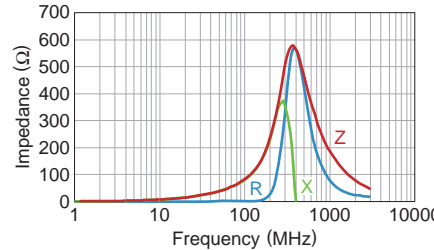
MMZ2012Y152BT000



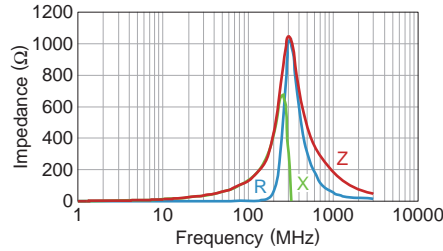
MMZ2012Y202BT000



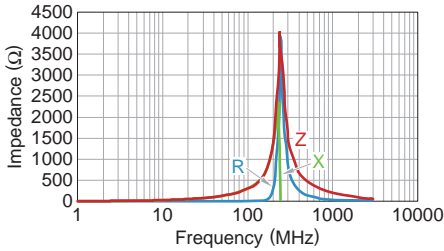
MMZ2012D800BT000




MMZ2012D121BT000



MMZ2012D301BT000



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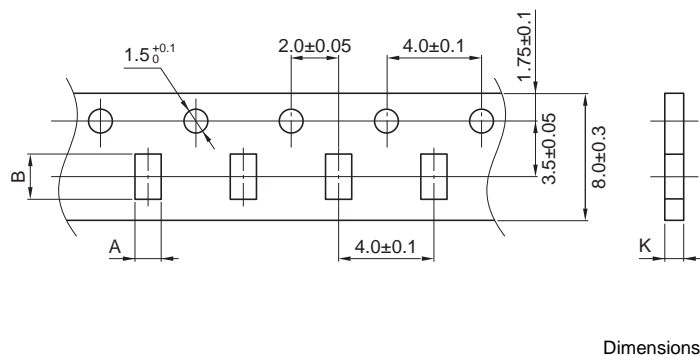
# MMZ2012 type

## PACKAGING STYLE

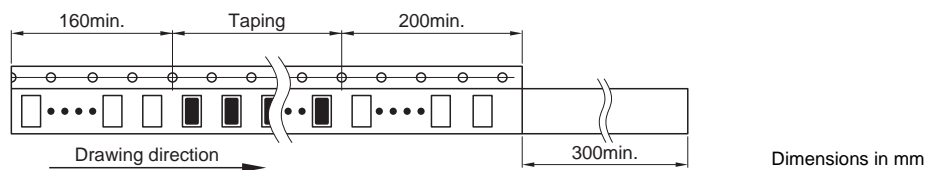
### REEL DIMENSIONS



### TAPE DIMENSIONS



Type	A	B	P1	K
<b>MMZ2012</b>	1.5±0.2	2.3±0.2	4.0±0.1	1.1max.



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