

# Chip Beads

For power line

## MPZ series

|                            |           |                  |
|----------------------------|-----------|------------------|
| Type:                      | MPZ0603   | 0603[0201 inch]* |
|                            | MPZ1005   | 1005[0402 inch]  |
|                            | MPZ1608   | 1608[0603 inch]  |
|                            | MPZ2012   | 2012[0805 inch]  |
|                            | MPZ1005-E | 1005[0402 inch]  |
| * Dimensions Code JIS[EIA] |           |                  |

Issue date: September 2012

- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

# Chip Beads

## For Power Line

Conformity to RoHS Directive

### MPZ Series MPZ0603

#### FEATURES

- This chip bead implements a 0603 shape in its capacity as an EMC countermeasure component, and it supports compact devices that need smaller spaces.
- This product can cope with a high current due to its low DC resistance. It is also most suitable for lower power consumption.
- Because of its low DC resistance, it is useful for audio lines.
- No cross talk with closed magnetic circuit structural design.
- It is a product conforming to RoHS directive.

#### APPLICATIONS

Removal of power line noises of cellular phones, PCs, note PCs, TV tuners, STBs, audio players, DVDs, DSCs, DVCs, game machines, digital photo frames, etc.

#### PRODUCT IDENTIFICATION

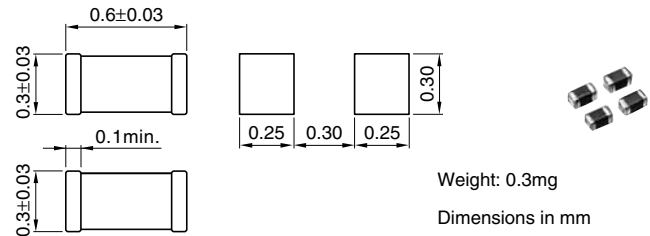
|     |      |     |     |     |     |                                                                            |
|-----|------|-----|-----|-----|-----|----------------------------------------------------------------------------|
| MPZ | 0603 | S   | 220 | C   | T   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| (1) | (2)  | (3) | (4) | (5) | (6) | (7)                                                                        |

- (1) Series name  
 (2) Dimensions L×W  
 (3) Type name  
 (4) Impedance  
     220: 22Ω at 100MHz  
 (5) Characteristic type  
 (6) Packaging style  
     T:Taping(reel)  
 (7) TDK internal code

#### HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

#### SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



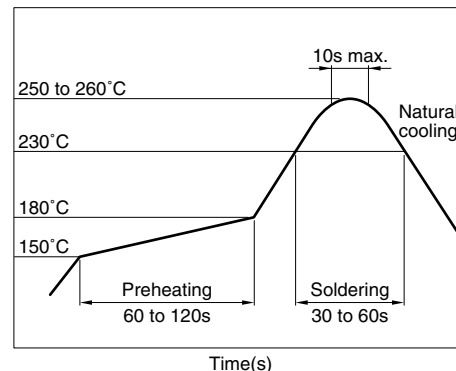
#### SPECIFICATIONS

|                             |                            |
|-----------------------------|----------------------------|
| Operating temperature range | -55 to +125°C              |
| Storage temperature range   | -55 to +125°C(After mount) |

#### PACKAGING STYLE AND QUANTITIES

|                 |                   |
|-----------------|-------------------|
| Packaging style | Quantity          |
| Taping          | 15000 pieces/reel |

#### RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



#### ELECTRICAL CHARACTERISTICS

| Part No.     | Impedance (Ω)[100MHz]* | DC resistance (Ω)max. | Rated current (mA)max. |
|--------------|------------------------|-----------------------|------------------------|
| MPZ0603S220C | 22±25%                 | 0.065                 | 1000                   |
| MPZ0603S330C | 33±25%                 | 0.090                 | 750                    |
| MPZ0603S470C | 47±25%                 | 0.120                 | 500                    |

\* Test equipment: E4991A or equivalent  
 Test tool: 16197 or equivalent  
 Test temperature: 25±10°C

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

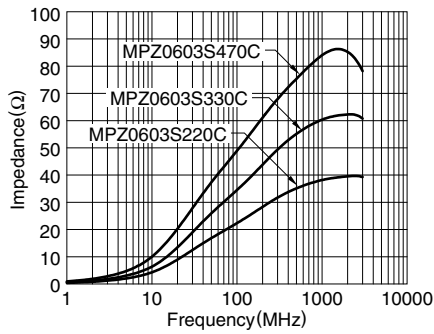
• Please contact our Sales office when your application is considered the following:  
 The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

• All specifications are subject to change without notice.

## TYPICAL ELECTRICAL CHARACTERISTICS

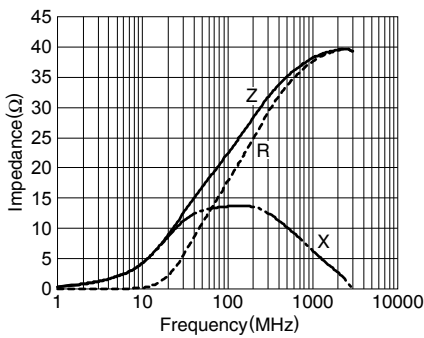
### Z FREQUENCY CHARACTERISTICS

#### MPZ0603S SERIES

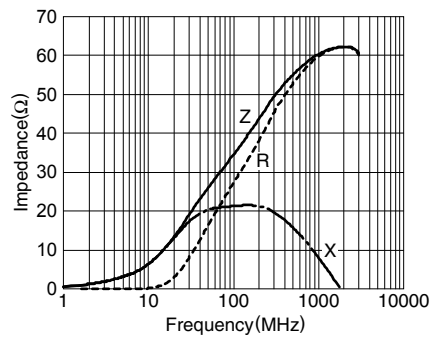


### Z, X, R vs. FREQUENCY CHARACTERISTICS

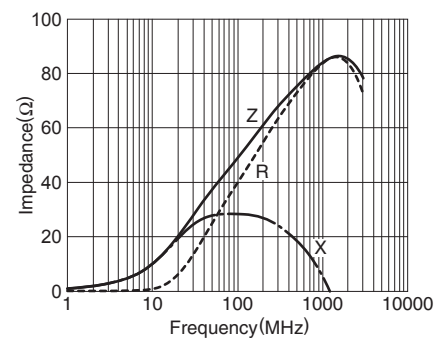
#### MPZ0603S220C



#### MPZ0603S330C

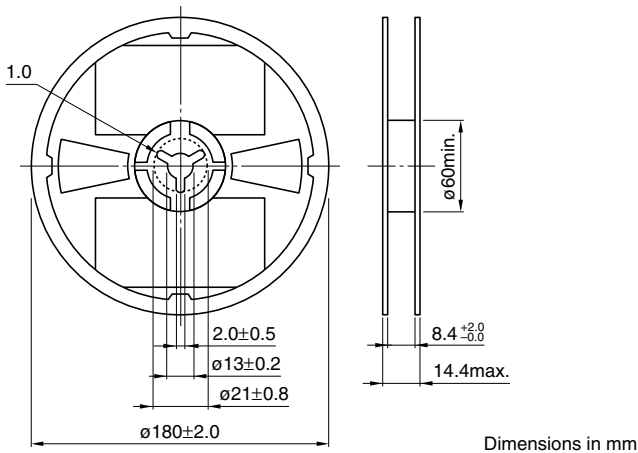


#### MPZ0603S470C



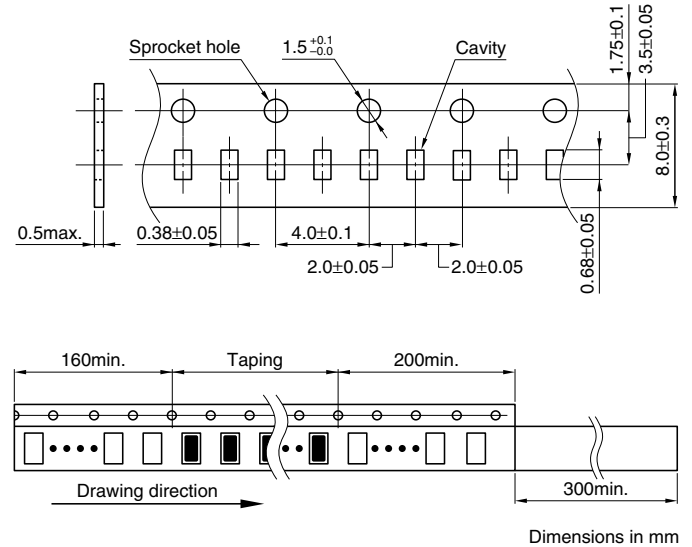
## PACKAGING STYLES

### REEL DIMENSIONS



Dimensions in mm

### TAPE DIMENSIONS



Dimensions in mm

# Chip Beads For Power Line

Conformity to RoHS Directive

## MPZ Series MPZ1005

### FEATURES

- TDK has manufactured MPZ1005 type as EMI countermeasure product for power line.
- This type is the best for energy-saving in the low DC resistance.
- No cross talk with closed magnetic circuit structural design.
- It is a product conforming to RoHS directive.

### APPLICATIONS

Removal of power line noises of cellular phones, PCs, note PCs, TVs, TV tuners, STBs, audio players, DVDs, DSCs, DVCs, game machines, digital photo frames, car navigation system, PNDs, etc.

### PRODUCT IDENTIFICATION

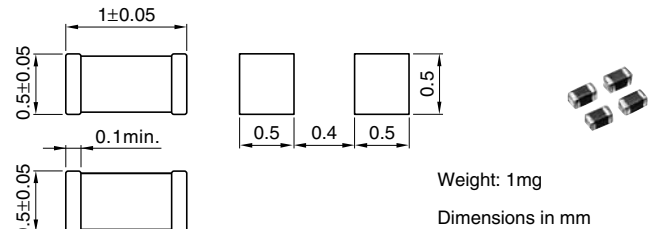
|     |      |     |     |     |     |     |  |  |
|-----|------|-----|-----|-----|-----|-----|--|--|
| MPZ | 1005 | S   | 121 | C   | T   |     |  |  |
| (1) | (2)  | (3) | (4) | (5) | (6) | (7) |  |  |

- (1) Series name  
 (2) Dimensions L×W  
 (3) Type name  
 (4) Impedance  
     121: 120Ω at 100MHz  
 (5) Characteristic type  
 (6) Packaging style  
     T:Taping(reel)  
 (7) TDK internal code

### HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

### SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



### SPECIFICATIONS

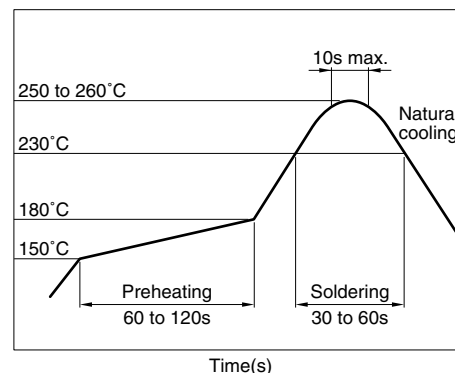
|                             |                           |
|-----------------------------|---------------------------|
| Operating temperature range | -40 to +85°C              |
| Storage temperature range   | -40 to +85°C(After mount) |

### PACKAGING STYLE AND QUANTITIES

|                 |                   |
|-----------------|-------------------|
| Packaging style | Quantity          |
| Taping          | 10000 pieces/reel |

### RECOMMENDED SOLDERING CONDITION

#### REFLOW SOLDERING



### ELECTRICAL CHARACTERISTICS

| Part No.     | Impedance<br>(Ω)[100MHz]* | DC resistance<br>(Ω)max. | Rated current<br>(A)max. |
|--------------|---------------------------|--------------------------|--------------------------|
| MPZ1005S100C | 10±5Ω                     | 0.025                    | 2.0                      |
| MPZ1005S300C | 30±10Ω                    | 0.035                    | 1.7                      |
| MPZ1005S600C | 60±25%                    | 0.060                    | 1.5                      |
| MPZ1005S121C | 120±25%                   | 0.090                    | 1.2                      |
| MPZ1005Y900C | 90±25%                    | 0.100                    | 1.2                      |

\* Test equipment: E4991A or equivalent  
 Test tool: 16192A or equivalent  
 Test temperature: 25±10°C

• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

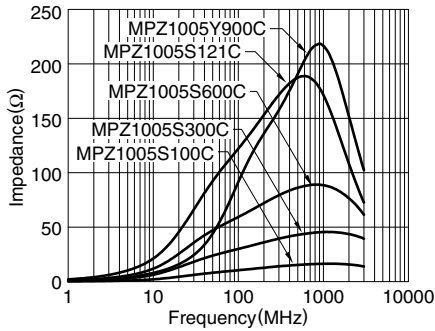
• Please contact our Sales office when your application is considered the following:  
 The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

• All specifications are subject to change without notice.

## TYPICAL ELECTRICAL CHARACTERISTICS

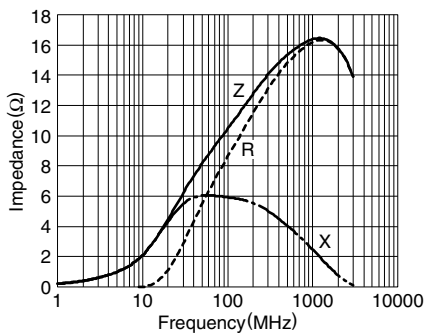
### Z FREQUENCY CHARACTERISTICS

#### MPZ1005S/MPZ1005Y SERIES

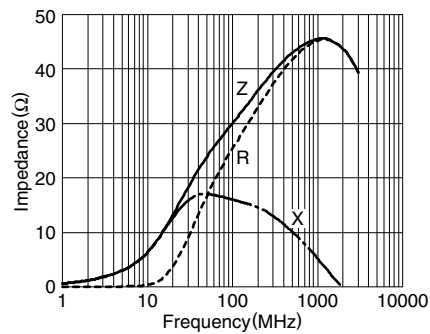


### Z, X, R vs. FREQUENCY CHARACTERISTICS

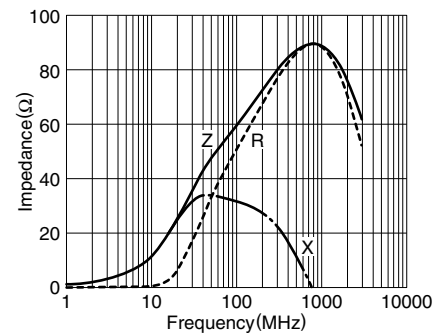
#### MPZ1005S100C



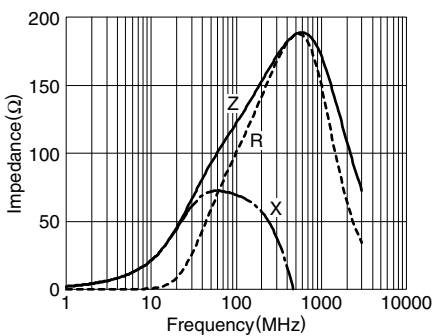
#### MPZ1005S300C



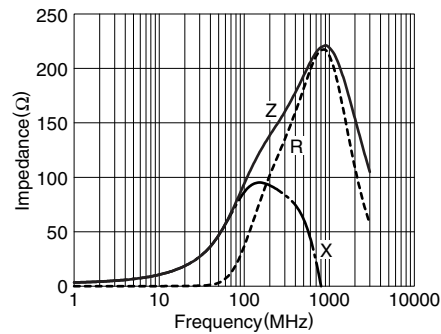
#### MPZ1005S600C



#### MPZ1005S121C

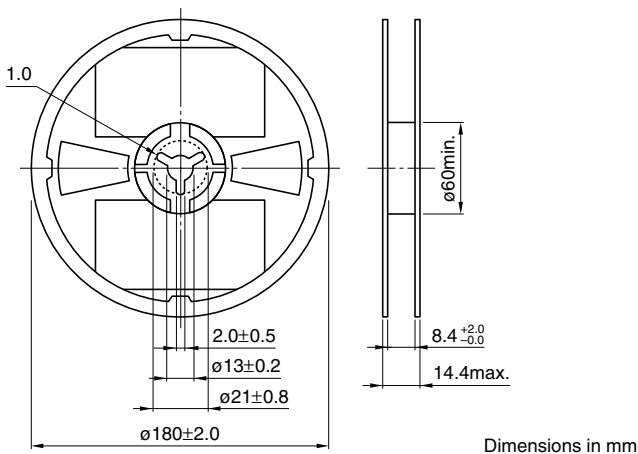


#### MPZ1005Y900C



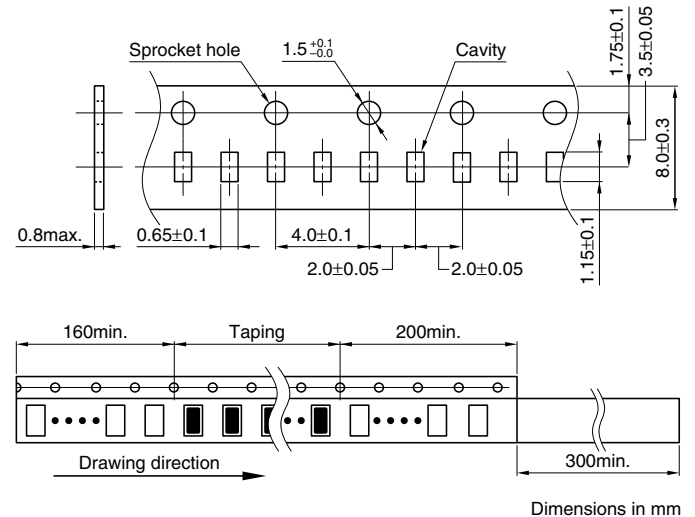
## PACKAGING STYLES

### REEL DIMENSIONS



Dimensions in mm

### TAPE DIMENSIONS



Dimensions in mm

• All specifications are subject to change without notice.

# Chip Beads

## For Power Line

Conformity to RoHS Directive

### MPZ Series MPZ1608

#### FEATURES

- This type is the best for energy-saving in the low DC resistance.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

#### APPLICATIONS

Removal of power line noises of cellular phones, PCs, note PCs, TVs, TV tuners, STBs, audio players, DVDs, DSCs, DVCs, game machines, digital photo frames, car navigation system, PNDs, etc.

#### PRODUCT IDENTIFICATION

|     |      |     |     |     |     |                                                                            |
|-----|------|-----|-----|-----|-----|----------------------------------------------------------------------------|
| MPZ | 1608 | S   | 221 | A   | T   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| (1) | (2)  | (3) | (4) | (5) | (6) | (7)                                                                        |

- (1) Series name  
 (2) Dimensions L×W  
 (3) Type name  
 (4) Impedance  
     221: 220Ω at 100MHz  
 (5) Characteristic type  
 (6) Packaging style  
     T: Taping  
 (7) TDK internal code

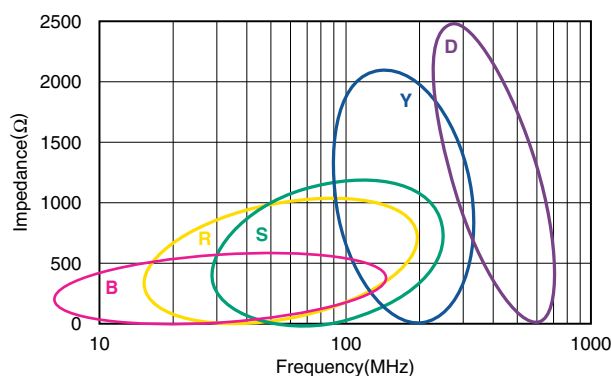
#### HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

#### MATERIAL CHARACTERISTICS

- B material:** This type is perfectly suited for fast digital signals. By equalizing R components and X components that beads possess at a frequency of 5MHz, it is able to suppress overshooting, undershooting and ringing of fast digital signals.
- 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 CHARACTERISTICS

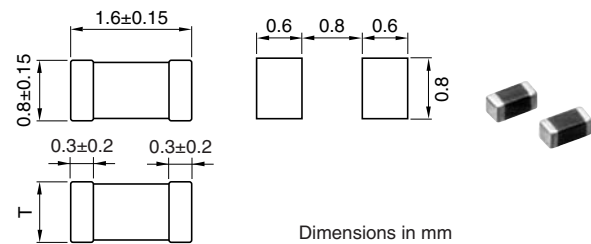


- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

- Please contact our Sales office when your application is considered the following:  
 The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

- All specifications are subject to change without notice.

## SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



| Thickness(T) | Weight |
|--------------|--------|
| 0.6±0.15mm   | 3mg    |
| 0.8±0.15mm   | 4mg    |

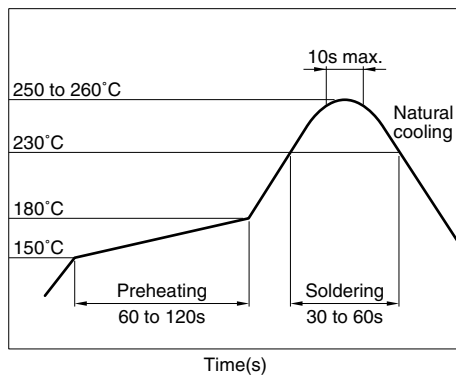
## SPECIFICATIONS

|                             |                            |
|-----------------------------|----------------------------|
| Operating temperature range | -55 to +125°C              |
| Storage temperature range   | -55 to +125°C(After mount) |

## PACKAGING STYLE AND QUANTITIES

|                 |                  |
|-----------------|------------------|
| Packaging style | Quantity         |
| Taping          | 4000 pieces/reel |

## RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



## ELECTRICAL CHARACTERISTICS

| Part No.     | Impedance<br>( $\Omega$ )[100MHz]*1 | DC resistance<br>( $\Omega$ )max. | Rated current*2<br>(A)max. | Thickness<br>T(mm) |
|--------------|-------------------------------------|-----------------------------------|----------------------------|--------------------|
| MPZ1608B471A | 470±25%                             | 0.150                             | 1.0                        | 0.8                |
| MPZ1608S300A | 30±10 $\Omega$                      | 0.010                             | 5.0                        | 0.6                |
| MPZ1608S600A | 60±25%                              | 0.020                             | 3.5                        | 0.6                |
| MPZ1608S101A | 100±25%                             | 0.030                             | 3.0                        | 0.6                |
| MPZ1608S121A | 120±25%                             | 0.045                             | 2.0                        | 0.6                |
| MPZ1608S181A | 180±25%                             | 0.050                             | 2.0                        | 0.6                |
| MPZ1608S221A | 220±25%                             | 0.050                             | 2.2                        | 0.8                |
| MPZ1608S331A | 330±25%                             | 0.080                             | 1.7                        | 0.8                |
| MPZ1608R391A | 390±25%                             | 0.120                             | 1.2                        | 0.8                |
| MPZ1608S471A | 470±25%                             | 0.150                             | 1.0                        | 0.8                |
| MPZ1608S601A | 600±25%                             | 0.150                             | 1.0                        | 0.8                |
| MPZ1608S102A | 1000±25%                            | 0.300                             | 0.8                        | 0.8                |
| MPZ1608Y600B | 60±25%                              | 0.030                             | 2.3                        | 0.8                |
| MPZ1608Y101B | 100±25%                             | 0.040                             | 2.0                        | 0.8                |
| MPZ1608Y151B | 150±25%                             | 0.050                             | 1.8                        | 0.8                |
| MPZ1608Y221B | 220±25%                             | 0.100                             | 1.5                        | 0.8                |
| MPZ1608D300B | 30±10 $\Omega$                      | 0.060                             | 1.8                        | 0.8                |
| MPZ1608D600B | 60±25%                              | 0.100                             | 1.2                        | 0.8                |
| MPZ1608D101B | 100±25%                             | 0.150                             | 1.0                        | 0.8                |

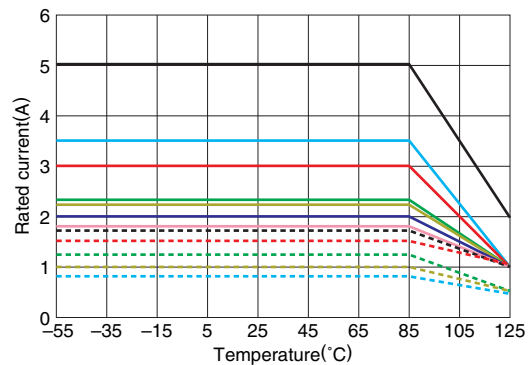
\*1 Test equipment: E4991A or equivalent

Test tool: 16192A or equivalent

Test temperature: 25±10°C

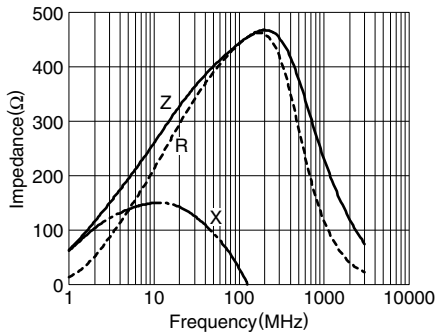
\*2 Please refer to the graph of RATED CURRENT vs. TEMPERATURE CHARACTERISTICS(DERATING) about the rating current at 85°C or more in temperature of the product.

## RATED CURRENT vs. TEMPERATURE CHARACTERISTICS (DERATING)

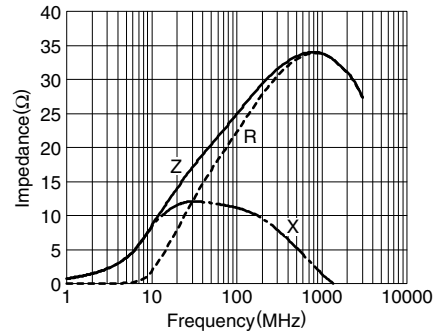


|                         |                   |             |       |
|-------------------------|-------------------|-------------|-------|
| S300A                   | S600A             | S101A       | Y600B |
| S221A                   | S121A,S181A,Y101B | Y151B,D300B |       |
| S331A                   | Y221B             | R391A,D600B |       |
| B471A,S471A,S601A,D101B | S102A             |             |       |

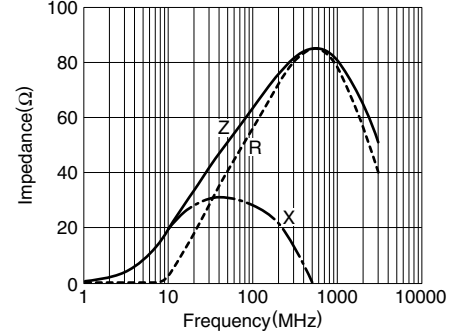
**TYPICAL ELECTRICAL CHARACTERISTICS**  
**Z, X, R vs. FREQUENCY CHARACTERISTICS**  
**MPZ1608B471A**



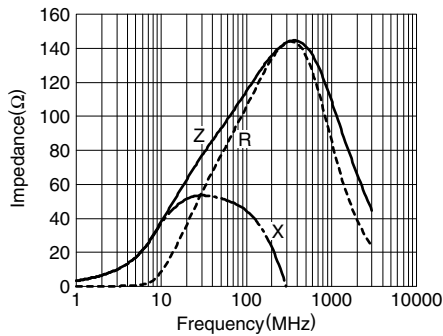
**MPZ1608S300A**



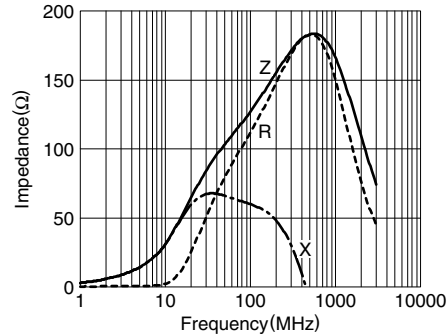
**MPZ1608S600A**



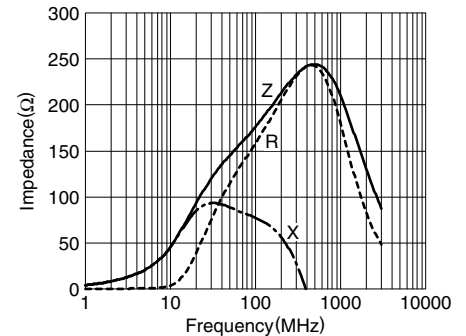
**MPZ1608S101A**



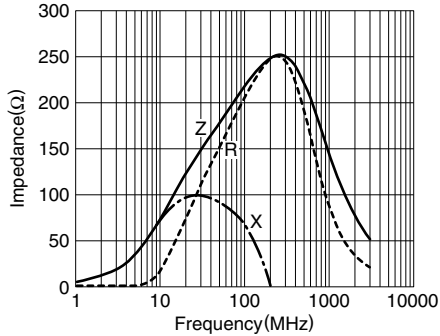
**MPZ1608S121A**



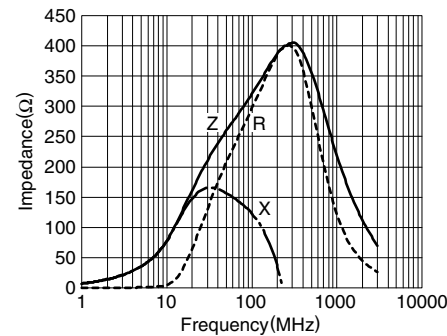
**MPZ1608S181A**



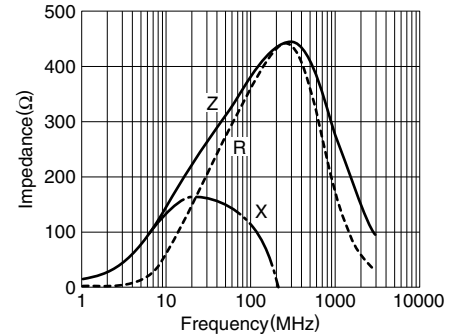
**MPZ1608S221A**



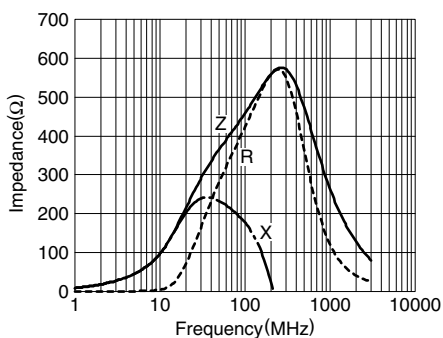
**MPZ1608S331A**



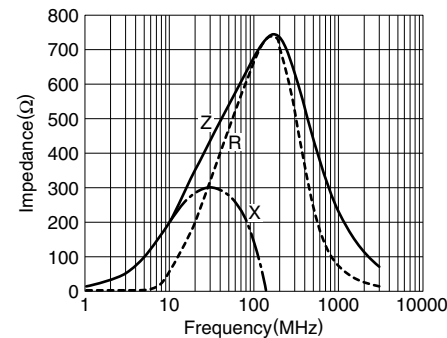
**MPZ1608R391A**



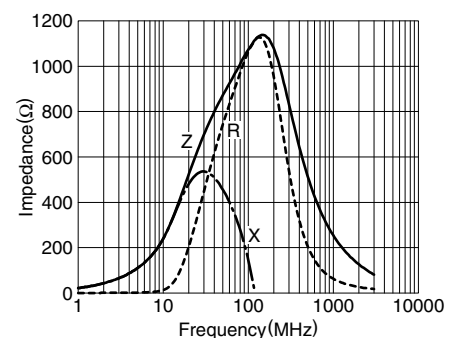
**MPZ1608S471A**



**MPZ1608S601A**



**MPZ1608S102A**





# Chip Beads

## For Power Line

Conformity to RoHS Directive

### MPZ Series MPZ2012

#### FEATURES

- The MPZ series are multilayer chip impeders for power supply line applications.
- High miniaturized, these parts nonetheless exhibit low DC resistance and high current handling capability.
- The products contain no lead and also support lead-free soldering.
- It is a product conforming to RoHS directive.

#### APPLICATIONS

Removal of power line noises of cellular phones, PCs, note PCs, TVs, TV tuners, STBs, audio players, DVDs, DSCs, DVCs, game machines, digital photo frames, car navigation system, PNDs, etc.

#### PRODUCT IDENTIFICATION

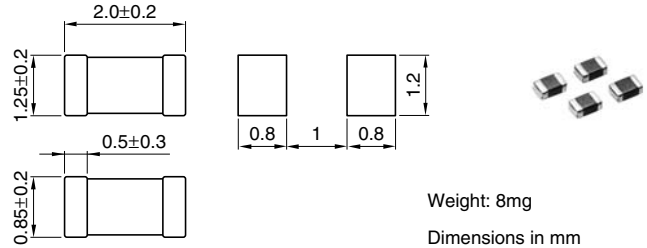
|     |      |     |     |     |     |                                                                            |
|-----|------|-----|-----|-----|-----|----------------------------------------------------------------------------|
| MPZ | 2012 | S   | 331 | A   | T   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| (1) | (2)  | (3) | (4) | (5) | (6) | (7)                                                                        |

- (1) Series name  
 (2) Dimensions L×W  
 (3) Type name  
 (4) Impedance  
     331: 330Ω at 100MHz  
 (5) Characteristic type  
 (6) Packaging style  
     T: Taping  
 (7) TDK internal code

#### HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

#### SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



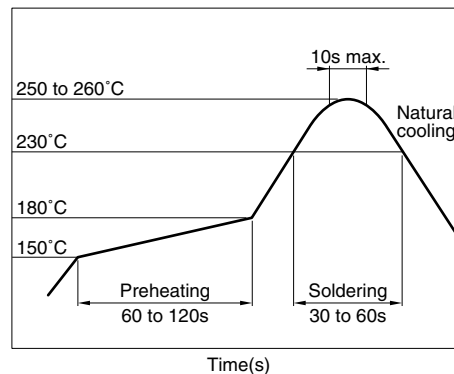
#### SPECIFICATIONS

|                             |                            |
|-----------------------------|----------------------------|
| Operating temperature range | -55 to +125°C              |
| Storage temperature range   | -55 to +125°C(After mount) |

#### PACKAGING STYLE AND QUANTITIES

|                 |                  |
|-----------------|------------------|
| Packaging style | Quantity         |
| Taping          | 4000 pieces/reel |

#### RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• Please contact our Sales office when your application is considered the following:  
 The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

• All specifications are subject to change without notice.



# Chip Beads

## For Power Line

Conformity to RoHS Directive

### MPZ Series MPZ1005-E

#### FEATURES

- TDK has manufactured MPZ1005 type as EMI countermeasure product for power line.
- Compared with the existing MPZ1005 type, this new product has broad-band impedance values for higher frequency ranges.
- This type is the best for energy-saving in the low DC resistance.
- No cross talk with closed magnetic circuit structural design.
- It is a product conforming to RoHS directive.

#### APPLICATIONS

Removal of power line noises of cellular phones, PCs, note PCs, TVs, TV tuners, STBs, audio players, DVDs, DSCs, DVCs, game machines, digital photo frames, PNDs, etc.

#### PRODUCT IDENTIFICATION

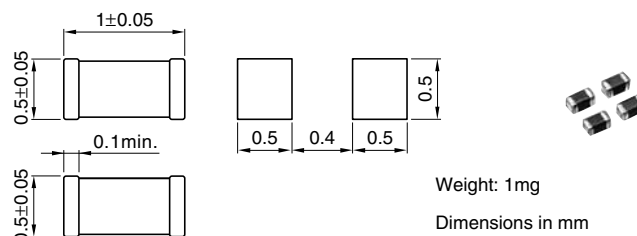
|     |      |     |     |     |     |                                                                            |
|-----|------|-----|-----|-----|-----|----------------------------------------------------------------------------|
| MPZ | 1005 | S   | 221 | E   | T   | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| (1) | (2)  | (3) | (4) | (5) | (6) | (7)                                                                        |

- (1) Series name  
 (2) Dimensions L×W  
 (3) Type name  
 (4) Impedance  
     221:220Ω at 100MHz  
 (5) Characteristic type  
 (6) Packaging style  
     T:Taping(reel)  
 (7) TDK internal code

#### HANDLING AND PRECAUTIONS

- Before soldering, be sure to preheat components. The preheating temperature should be set so that the temperature difference between the solder temperature and product temperature does not exceed 150°C.
- After mounting components onto the printed circuit board, do not apply stress through board bending or mishandling.
- Do not expose the inductors to stray magnetic fields.
- Avoid static electricity discharge during handling.
- When hand soldering, apply the soldering iron to the printed circuit board only. Temperature of the iron tip should not exceed 350°C. Soldering time should not exceed 3 seconds.

#### SHAPES AND DIMENSIONS/RECOMMENDED PC BOARD PATTERN



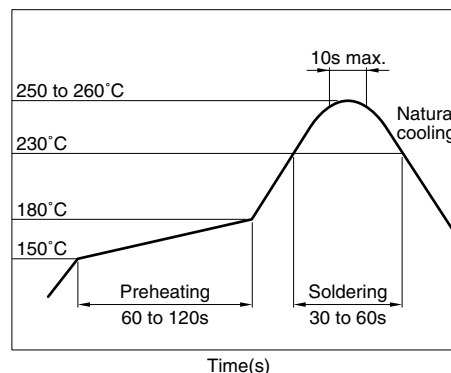
#### SPECIFICATIONS

|                             |                            |
|-----------------------------|----------------------------|
| Operating temperature range | -55 to +125°C              |
| Storage temperature range   | -55 to +125°C(After mount) |

#### PACKAGING STYLE AND QUANTITIES

|                 |                   |
|-----------------|-------------------|
| Packaging style | Quantity          |
| Taping          | 10000 pieces/reel |

#### RECOMMENDED SOLDERING CONDITION REFLOW SOLDERING



- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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 The device's failure or malfunction may directly endanger human life (e.g. application for automobile/aircraft/medical/nuclear power devices, etc.)

- All specifications are subject to change without notice.

| Part No.     | Impedance( $\Omega$ )*1 |               | DC resistance<br>( $\Omega$ )max. | Rated current<br>(A)max.*2 |
|--------------|-------------------------|---------------|-----------------------------------|----------------------------|
|              | [100MHz]                | [1GHz]        |                                   |                            |
| MPZ1005S221E | 220 $\pm$ 25%           | 350 $\pm$ 40% | 0.22                              | 0.9                        |
| MPZ1005S331E | 330 $\pm$ 25%           | 550 $\pm$ 40% | 0.28                              | 0.7                        |

\*2 Please refer to the graph of RATED CURRENT vs. TEMPERATURE CHARACTERISTICS(DERATING) about the rating current at 85°C or more in temperature of the product.

Figure 1 is a line graph showing the Rated current (A) on the Y-axis (ranging from 0.0 to 1.0) versus Temperature (°C) on the X-axis (ranging from -55 to 125). Two data series are plotted: S221E (solid line) and S331E (dashed line). Both series show a constant rated current up to 85°C, after which the current decreases linearly with increasing temperature.

| Temperature (°C) | S221E Rated current (A) | S331E Rated current (A) |
|------------------|-------------------------|-------------------------|
| -55              | 0.9                     | 0.7                     |
| -35              | 0.9                     | 0.7                     |
| -15              | 0.9                     | 0.7                     |
| 5                | 0.9                     | 0.7                     |
| 25               | 0.9                     | 0.7                     |
| 45               | 0.9                     | 0.7                     |
| 65               | 0.9                     | 0.7                     |
| 85               | 0.9                     | 0.7                     |
| 105              | 0.7                     | 0.6                     |
| 125              | 0.6                     | 0.5                     |

Figure 1 is a log-log plot showing the impedance (Ω) versus frequency (MHz) for a parallel RLC circuit. The x-axis represents frequency in MHz, ranging from 1 to 10,000. The y-axis represents impedance in Ω, ranging from 0 to 400. Three curves are plotted: Z (total impedance, solid line), R (resistor impedance, dashed line), and X (reactance, solid line). The R curve is a horizontal dashed line at 100 Ω. The X curve is a solid line that peaks at 100 Ω around 30 MHz and then decreases. The Z curve is a solid line that peaks at 350 Ω around 1,000 MHz.

The graph shows the impedance of a parallel RLC circuit as a function of frequency. The x-axis is Frequency (MHz) on a logarithmic scale from 1 to 10,000. The y-axis is Impedance ( $\Omega$ ) on a linear scale from 0 to 600. Three curves are plotted: Z (total impedance, solid line), R (resistor impedance, dashed line), and X (reactance, dotted line). Z starts at 0, rises to a peak of approximately 530  $\Omega$  at 1000 MHz, and then decreases. R is a constant horizontal dashed line at 180  $\Omega$ . X starts at 180  $\Omega$  at 10 MHz and decreases to 0 at 1000 MHz.

Technical drawing of a circular component, showing a top view and a side view.

**Top View Dimensions:**

- Outer diameter:  $\phi 180 \pm 2.0$
- Inner diameter (hub):  $\phi 13 \pm 0.2$
- Distance from center to outer ring:  $2.0 \pm 0.5$
- Distance from center to inner hub:  $\phi 21 \pm 0.8$

**Side View Dimensions:**

- Thickness:  $8.4^{+2.0}_{-0.0}$
- Total height:  $14.4 \text{ max.}$
- Inner hub diameter (side view):  $\phi 60 \text{ min.}$

Dimensions in mm

Technical drawing of a multi-hole metal strip. The drawing shows a side view of the strip with various dimensions and labels. Key features include:

- Sprocket hole:** A circular hole at the top of the strip.
- Cavity:** A rectangular hole in the center of the strip.
- Dimensions:**
  - Overall width:  $1.75 \pm 0.1$  mm.
  - Overall height:  $3.5 \pm 0.05$  mm.
  - Distance from sprocket hole to center of cavity:  $1.5^{+0.1}_{-0.0}$  mm.
  - Distance between centers of adjacent sprocket holes:  $0.65 \pm 0.1$  mm.
  - Distance between centers of adjacent cavities:  $4.0 \pm 0.1$  mm.
  - Distance from sprocket hole to center of cavity:  $2.0 \pm 0.05$  mm.
  - Distance from cavity to sprocket hole:  $2.0 \pm 0.05$  mm.
  - Distance from sprocket hole to center of cavity:  $1.15 \pm 0.1$  mm.
  - Distance from sprocket hole to center of cavity:  $0.8 \text{ max.}$  mm.
- Process Labels:**
  - 160min.**: Time for the first section.
  - Taping**: Process for the middle section.
  - 200min.**: Time for the second section.
  - 300min.**: Time for the final section.
- Drawing direction:** Indicated by an arrow pointing to the right.
- Dimensions in mm:** Note at the bottom right.

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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