



# Chip beads

For power line

Large current / Low DC resistance

## MPZ-H series

# MPZ0603-H<sub>type</sub>

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**MPZ0603-H**

**0603[0201 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 power line

Large current / Low DC resistance

Product compatible with RoHS directive

Halogen-free

Compatible with lead-free solders

## Overview of MPZ0603-H type

### FEATURES

- Noise reduction solution for power line.
- This product is a low resistance of more than 50% than [-C] series standards.
- Reduced from the -C on the standard series power loss in circuits.
- Downsizing of 1005 shape easy due to the 50% or more improvement compared to the conventional power beads rated current.

### 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

|             |                       |             |               |                         |    |                     |                 |        |               |
|-------------|-----------------------|-------------|---------------|-------------------------|----|---------------------|-----------------|--------|---------------|
| MPZ         | 0603                  |             | S             | 220                     |    | H                   | T               |        | 000           |
| Series name | LxWxT dimensions (mm) |             | Material name | Impedance (Ω) at 100MHz |    | Characteristic type | Packaging style |        | Internal code |
|             | 0603                  | 0.6x0.3x0.3 | S             | 220                     | 22 | H                   | T               | Taping | 000           |

### OPERATING TEMPERATURE RANGE, PACKAGE QUANTITY, PRODUCT WEIGHT

| Type      | Temperature range          |                           | Package quantity<br>(pieces/reel) | Individual weight<br>(mg) |
|-----------|----------------------------|---------------------------|-----------------------------------|---------------------------|
|           | Operating temperature (°C) | Storage temperature* (°C) |                                   |                           |
| MPZ0603-H | -55 to +125                | -55 to +125               | 15,000                            | 0.3                       |

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

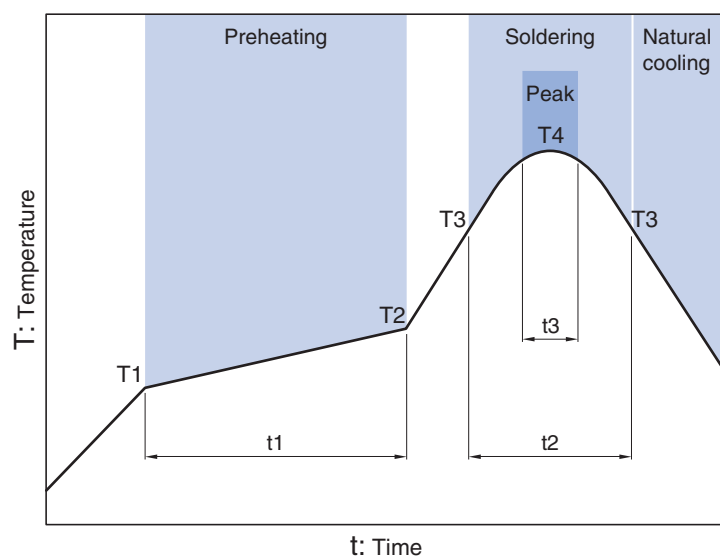
○ RoHS Directive Compliant Product: See the following for more details. <https://product.tdk.com/info/en/environment/rohs/index.html>

○ 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.

⚠ 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.

# MPZ0603-H type

## RECOMMENDED REFLOW PROFILE



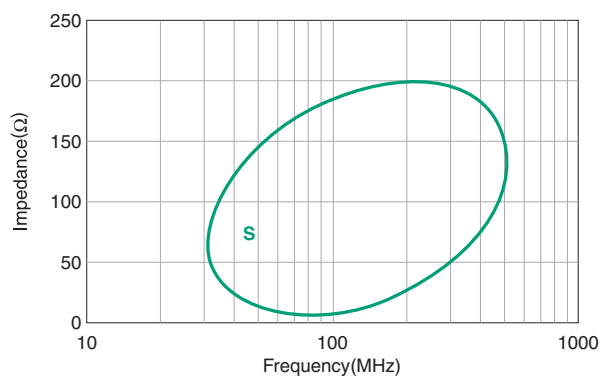
| Preheating |       |            | Soldering |           | Peak         |      |
|------------|-------|------------|-----------|-----------|--------------|------|
| Temp.      | Time  |            | Temp.     | Time      | Temp.        | Time |
| T1         | T2    | t1         | T3        | t2    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

# MPZ0603-H type

## MATERIAL CHARACTERISTIC

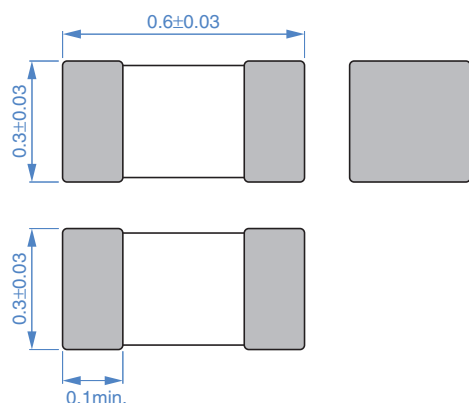
S material: Standard type that features impedance characteristics similar to those of a typical ferrite core. For signal line applications in which the blocking region is near 100MHz. Impedance values selected for effectiveness at 40 to 300MHz.

## TYPICAL MATERIAL IMPEDANCE CHARACTERISTICS



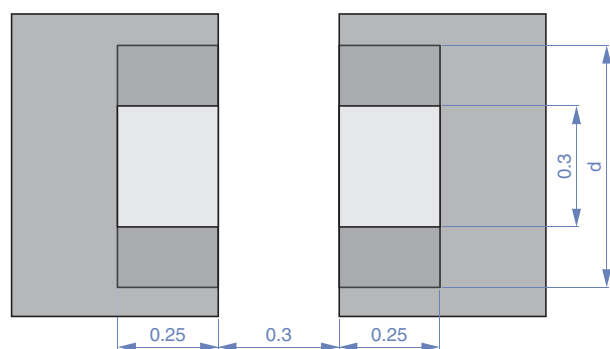
# MPZ0603-H type

## ■ SHAPE & DIMENSIONS



Dimensions in mm

## ■ RECOMMENDED LAND PATTERN



Solder Resist  
 Pattern

| Rated current<br>(A) | Pad thickness & d |      |      |
|----------------------|-------------------|------|------|
|                      | 18μm              | 35μm | 70μm |
| 0.9max.              | 0.3               | 0.3  | 0.3  |
| 2.0max.              | 1.2               | 0.7  | 0.3  |

Dimensions in mm

# MPZ0603-H type

## ELECTRICAL CHARACTERISTICS

### CHARACTERISTICS SPECIFICATION TABLE

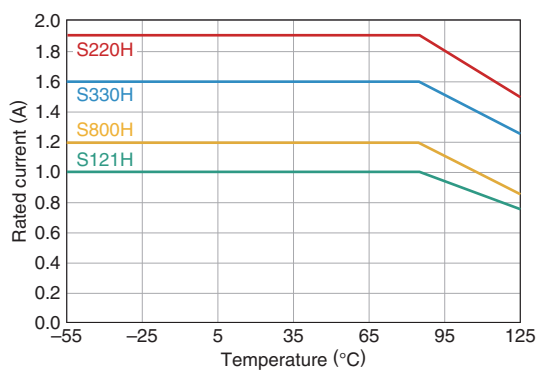
| Impedance<br>[100MHz]<br>( $\Omega$ ) |      | DC resistance<br>( $\Omega$ )max. | Rated current<br>(mA)max. | Part No.         |
|---------------------------------------|------|-----------------------------------|---------------------------|------------------|
| Tolerance                             |      |                                   |                           |                  |
| 22                                    | ±25% | 0.036                             | 1900                      | MPZ0603S220HT000 |
| 33                                    | ±25% | 0.050                             | 1600                      | MPZ0603S330HT000 |
| 80                                    | ±25% | 0.095                             | 1200                      | MPZ0603S800HT000 |
| 120                                   | ±25% | 0.130                             | 1000                      | MPZ0603S121HT000 |

#### Measurement equipment

| Measurement item | Product No.  | Manufacturer          |
|------------------|--------------|-----------------------|
| Impedance        | E4991A+16197 | Keysight Technologies |
| DC resistance    | Type-7556    | Yokogawa              |

\* Equivalent measurement equipment may be used.

#### Rated current vs. temperature characteristics (derating)

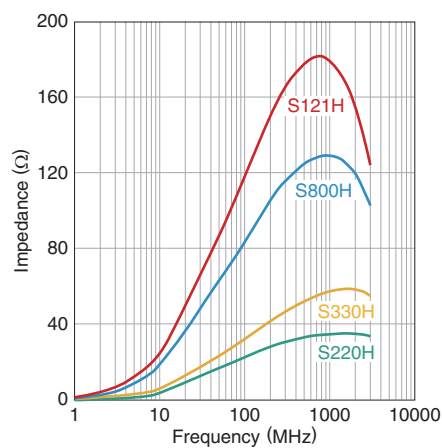


# MPZ0603-H type

## ELECTRICAL CHARACTERISTICS

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

#### MPZ0603S series

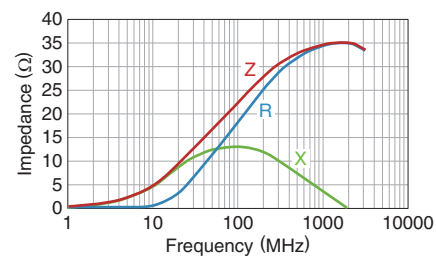


# MPZ0603-H type

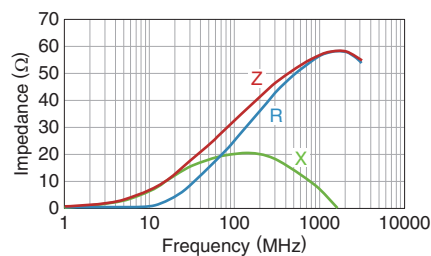
## ELECTRICAL CHARACTERISTICS

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

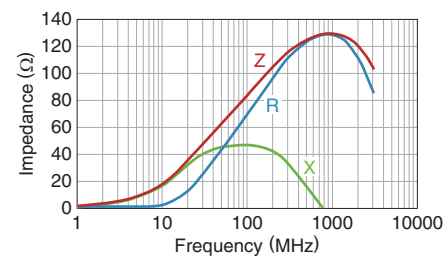
MPZ0603S220H



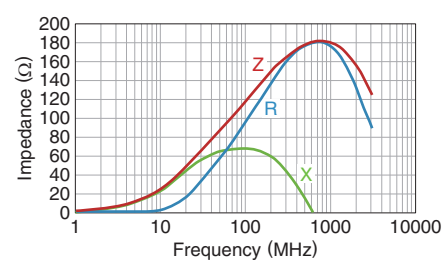
MPZ0603S330H



MPZ0603S800H



MPZ0603S121H



## REEL DIMENSIONS



Dimensions in mm

Figure 1: Schematic diagram of the experimental setup. The diagram shows a horizontal timeline of the experimental process. It starts with a 160min. period, followed by a 'Taping' period, and then a 200min. period. Below the timeline, a series of rectangles represent the state of the system at different points. Some rectangles are white, some are black, and some are split vertically (white on the left, black on the right). An arrow at the bottom indicates the 'Drawing direction' from left to right. A bracket at the bottom right indicates a 300min. duration for the final part of the experiment.

Dimensions in mm

## 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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