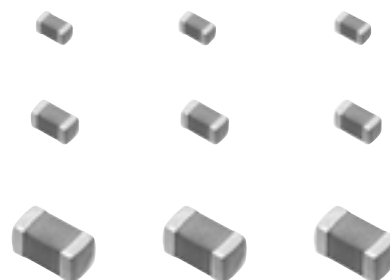


## Multilayer Varistor for ESD pulse [DC voltage lines/High speed signal lines]

Series : **EZJZ, EZJP**



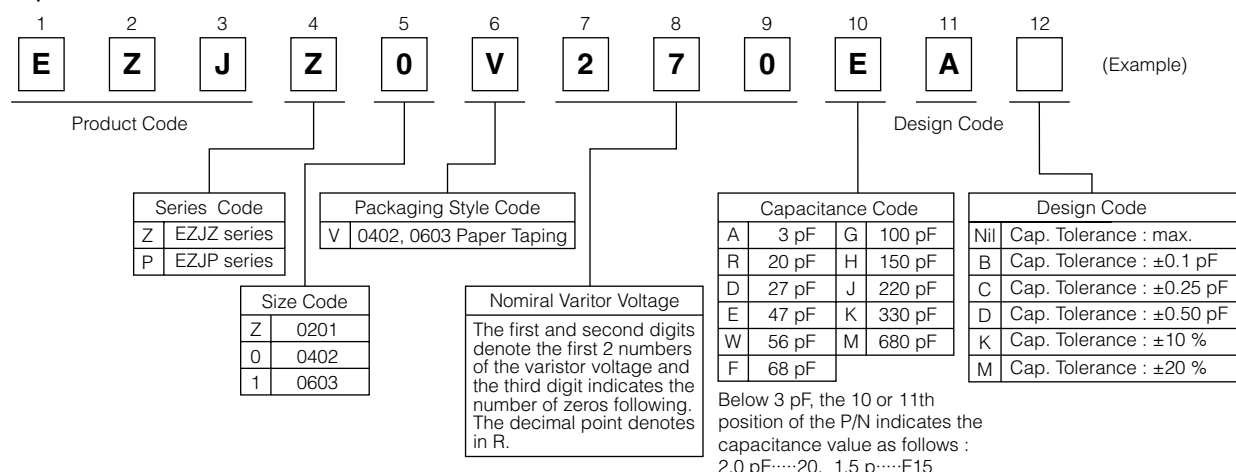
### ■ Features

- Excellent ESD suppression due to advanced material technology
- Meets IEC61000-4-2, Level 4 standard
- Can replace 2 Zener Diodes and 1 Capacitor
- Low capacitance versions for DC voltage lines of high speed busses
- Ultra low capacitance for signal lines of high speed busses
- Ideal usage for USB 2.0, IEEE1394, and HDMI high speed data busses
- RoHS compliant

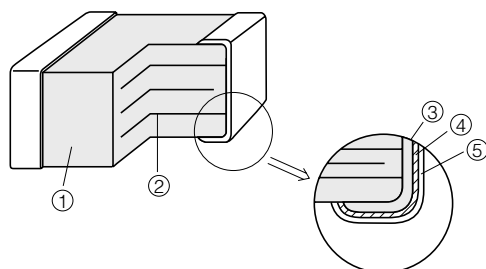
### ■ Packaging Methods, Handling Precautions

Please see Data Files

### ■ Explanation of Part Numbers

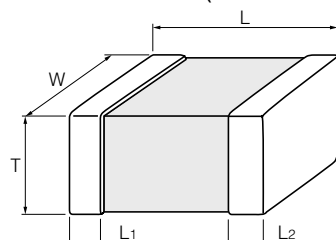


### ■ Construction



| No. | Name                    |
|-----|-------------------------|
| ①   | Semiconductive Ceramics |
| ②   | Internal electrode      |
| ③   | Substrate electrode     |
| ④   | Terminal electrode      |
| ⑤   | Intermediate electrode  |
|     | External electrode      |

### ■ Dimensions in mm (not to scale)



| Size Code | Size(inch) | L         | W         | T         | L <sub>1</sub> , L <sub>2</sub> |
|-----------|------------|-----------|-----------|-----------|---------------------------------|
| Z         | 0201       | 0.60±0.03 | 0.30±0.03 | 0.30±0.03 | 0.15±0.05                       |
| 0         | 0402       | 1.00±0.05 | 0.50±0.05 | 0.50±0.05 | 0.2±0.1                         |
| 1         | 0603       | 1.6±0.1   | 0.8±0.1   | 0.8±0.1   | 0.3±0.2                         |

Design and specifications are each subject to change without notice. Ask factory for the current technical specifications before purchase and/or use.  
Should a safety concern arise regarding this product, please be sure to contact us immediately.

# Multilayer Varistor, Low Capacitance Type [High speed signal lines]

## ■ Features

- Multilayer monolithic ceramic construction for high speed signal lines
- Ideal usage for USB 2.0, IEEE1394, and HDMI high speed data busses
- Capacitance : 0.8 to 2.1 pF typ.

## ■ Recommended Applications

|              |                               |
|--------------|-------------------------------|
| Mobile phone | Antenna circuit, External IF  |
| DSC, DVC     | USB2.0, IEEE1394              |
| PC, PDA      | USB2.0, IEEE1394, LAN1000BASE |
| TV, DVD      | USB2.0, IEEE1394, HDMI        |
| Game console | Controller, External IF       |

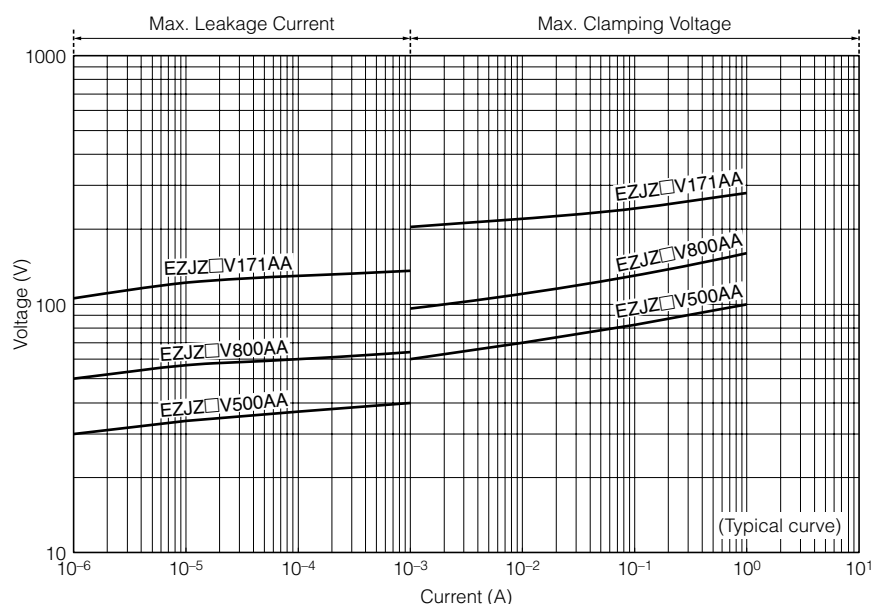
## ■ Ratings and Characteristics

| Size | Part No.     | Maximum allowable voltage DC (V) | Nominal varistor voltage at 1mA (V) | Capacitance (pF) at 1MHz | Maximum ESD IEC61000-4-2 |
|------|--------------|----------------------------------|-------------------------------------|--------------------------|--------------------------|
| 0402 | EZJZ0V80010  | 10                               | 80                                  | 1 max. [0.8 typ.]        | Contact discharge : 8kV  |
|      | EZJZ0V80015D | 5                                | 80                                  | 1.5±0.5                  |                          |
|      | EZJZ0V500AA  | 5                                | 50                                  | 3 max. [2.1 typ.]        |                          |
|      | EZJZ0V800AA  | 18                               | 80                                  | 3 max. [2.1 typ.]        |                          |
|      | EZJZ0V171AA  | 18                               | 170                                 | 3 max. [2.1 typ.]        |                          |
| 0603 | EZJZ1V80010  | 10                               | 80                                  | 1 max. [0.8 typ.]        |                          |
|      | EZJZ1V500AA  | 5                                | 50                                  | 3 max. [2.1 typ.]        |                          |
|      | EZJZ1V800AA  | 18                               | 80                                  | 3 max. [2.1 typ.]        |                          |
|      | EZJZ1V171AA  | 18                               | 170                                 | 3 max. [2.1 typ.]        |                          |

● Operating Temperature Range : -40 to 85 °C

\* Recommend soldering method : Reflow soldering

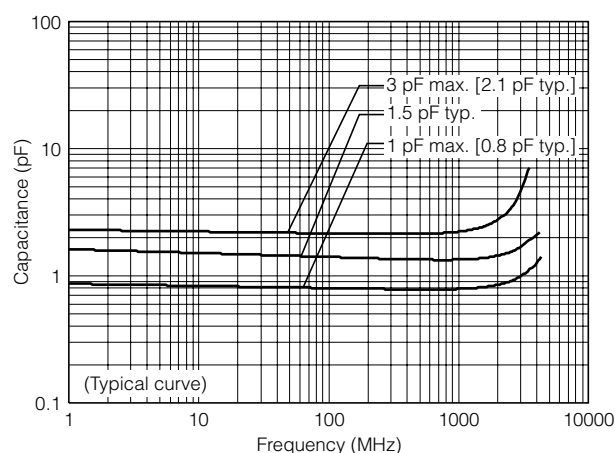
## ■ Voltage vs. Current



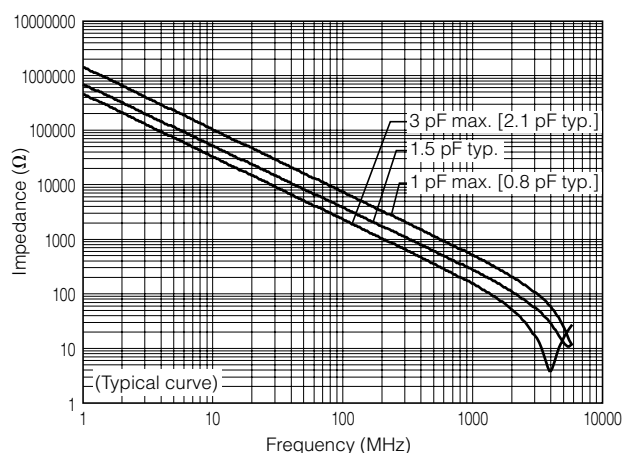
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01 Nov. 2012

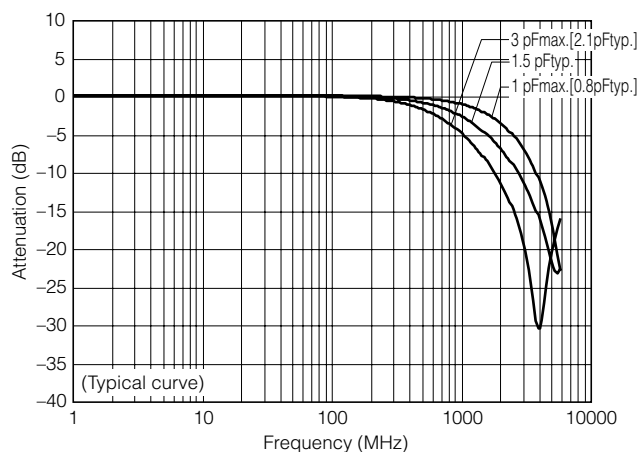
### Frequency vs. Capacitance



### Frequency vs. Impedance



### Frequency vs. Transmission



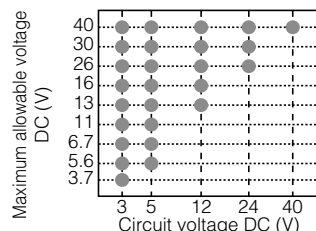
## Multilayer Varistor, Low Voltage Type (Standard Type)

### [DC voltage lines/Low speed signal lines]

#### ■ Features

Multilayer monolithic ceramic construction for use protecting DC voltage lines or signal lines

#### ● Circuit voltage



● Varistor voltage : 6.8 to 65 V [at 1 mA]

● Capacitance : 8.5 to 420 pF typ. [at 1 MHz]

#### ■ Ratings and Characteristics

| Size | Part No.    | Maximum allowable voltage DC (V) | Nominal varistor voltage at 1mA (V) | Capacitance (pF)    |           | Maximum peak current at 8/20μs, 2times (A) | Maximum ESD IEC61000-4-2  |
|------|-------------|----------------------------------|-------------------------------------|---------------------|-----------|--------------------------------------------|---------------------------|
|      |             |                                  |                                     | at 1MHz             | at 1kHz   |                                            |                           |
| 0201 | EZJPZV6R8JA | 3.7                              | 6.8                                 | 220 max. [180 typ.] | 175 typ.  | 5                                          | Contact discharge<br>8 kV |
|      | EZJPZV6R8GA | 3.7                              | 6.8                                 | 100 max. [ 85 typ.] | 100 typ.  | 5                                          |                           |
|      | EZJPZV080GA | 5.6                              | 8                                   | 100 max. [ 85 typ.] | 100 typ.  | 5                                          |                           |
|      | EZJPZV120GA | 7.5                              | 12                                  | 100 max. [ 85 typ.] | 100 typ.  | 5                                          |                           |
|      | EZJPZV120DA | 7.5                              | 12                                  | 27 max. [ 22 typ.]  | 33 typ.   | 1                                          |                           |
|      | EZJPZV120RA | 7.5                              | 12                                  | 20 max. [ 15 typ.]  | 18 typ.   | 1                                          |                           |
|      | EZJPZV150RA | 9                                | 15                                  | 20 max. [ 15 typ.]  | 18 typ.   | 1                                          |                           |
|      | EZJPZV270RA | 16                               | 27                                  | 20 max. [ 15 typ.]  | 16.5 typ. | 1                                          |                           |
|      | EZJPZV270BA | 16                               | 27                                  | 10 max. [8.5 typ.]  | 10 typ.   | 1                                          |                           |
| 0402 | EZJP0V6R8MA | 3.7                              | 6.8                                 | 680 max. [420 typ.] | 650 typ.  | 20                                         |                           |
|      | EZJP0V6R8GA | 3.7                              | 6.8                                 | 100 max. [ 85 typ.] | 100 typ.  | 3                                          |                           |
|      | EZJP0V080MA | 5.6                              | 8                                   | 680 max. [420 typ.] | 650 typ.  | 20                                         |                           |
|      | EZJP0V080KA | 5.6                              | 8                                   | 330 max. [290 typ.] | 480 typ.  | 15                                         |                           |
|      | EZJP0V080GA | 5.6                              | 8                                   | 100 max. [ 65 typ.] | 100 typ.  | 3                                          |                           |
|      | EZJP0V080DA | 5.6                              | 8                                   | 27 max. [ 22 typ.]  | 33 typ.   | 1                                          |                           |
|      | EZJZ0V120JA | 6.7                              | 12                                  | 220 max. [150 typ.] | 175 typ.  | 10                                         |                           |
|      | EZJZ0V180HA | 11                               | 18                                  | 150 max. [120 typ.] | 140 typ.  | 10                                         |                           |
|      | EZJZ0V220HA | 13                               | 22                                  | 150 max. [100 typ.] | 116 typ.  | 10                                         |                           |
|      | EZJP0V270EA | 16                               | 27                                  | 47 max. [ 33 typ.]  | 37 typ.   | 4                                          |                           |
|      | EZJP0V270RA | 16                               | 27                                  | 20 max. [ 15 typ.]  | 16.5 typ. | 1                                          |                           |
|      | EZJZ0V420WA | 30                               | 42                                  | 56 max. [ 40 typ.]  | 45 typ.   | 10                                         |                           |
|      | EZJZ0V650DA | 40                               | 65                                  | 27 max. [ 22 typ.]  | 33 typ.   | 5                                          |                           |
| 0603 | EZJZ1V120KA | 6.7                              | 12                                  | 330 max. [250 typ.] | 290 typ.  | 20                                         |                           |
|      | EZJZ1V180JA | 11                               | 18                                  | 220 max. [180 typ.] | 210 typ.  | 20                                         |                           |
|      | EZJZ1V220JA | 13                               | 22                                  | 220 max. [160 typ.] | 185 typ.  | 20                                         |                           |
|      | EZJZ1V270GA | 16                               | 27                                  | 100 max. [ 85 typ.] | 100 typ.  | 20                                         |                           |
|      | EZJZ1V270EA | 16                               | 27                                  | 47 max. [ 33 typ.]  | 37 typ.   | 20                                         |                           |
|      | EZJZ1V270RA | 16                               | 27                                  | 20 max. [ 15 typ.]  | 16.5 typ. | 3                                          |                           |
|      | EZJZ1V330GA | 26                               | 33                                  | 100 max. [ 85 typ.] | 100 typ.  | 20                                         |                           |
|      | EZJZ1V420FA | 30                               | 42                                  | 68 max. [ 55 typ.]  | 63 typ.   | 15                                         |                           |
|      | EZJZ1V650DA | 40                               | 65                                  | 27 max. [ 22 typ.]  | 33 typ.   | 5                                          |                           |

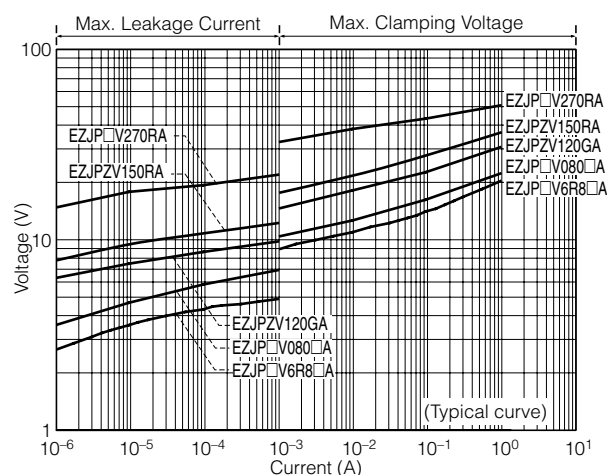
● Operating Temperature Range : -40 to 85 °C \* Recommend soldering method : Reflow soldering

|                           |                                                                                                                   |
|---------------------------|-------------------------------------------------------------------------------------------------------------------|
| Maximum Allowable Voltage | Maximum DC Voltage that can be applied continuously within the operating temperature range                        |
| Varistor Voltage          | Varistor starting voltage between terminals at DC 1 mA, also known as Breakdown voltage                           |
| Maximum Peak Current      | Varistor's maximum current under the standard pulse 8/20μs, 2 times based                                         |
| Maximum ESD               | Varistor's maximum voltage under ESD based on IEC61000-4-2, 10 times (5 times of each positive-negative polarity) |

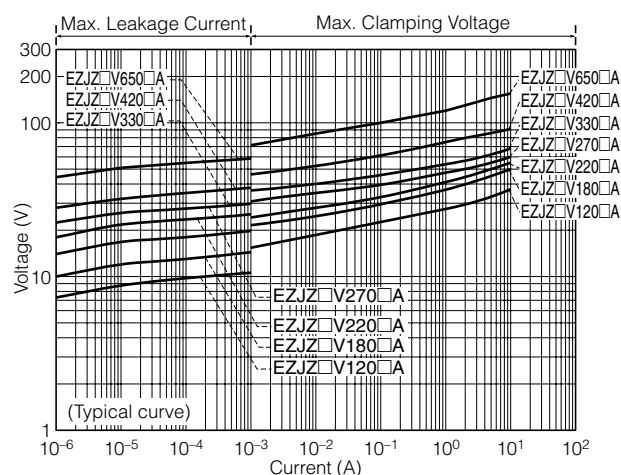
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## ■ Voltage vs. Current

### ● EZJP Series

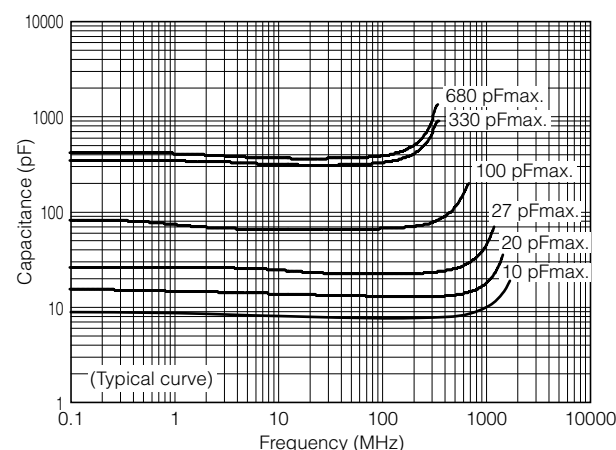


### ● EZJZ Series

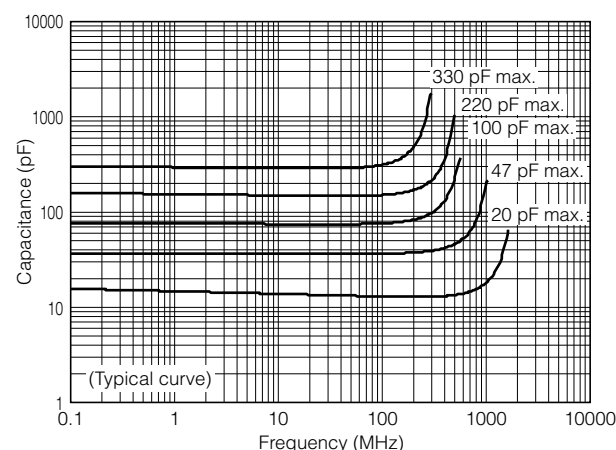


## ■ Frequency vs. Capacitance

### ● EZJP Series

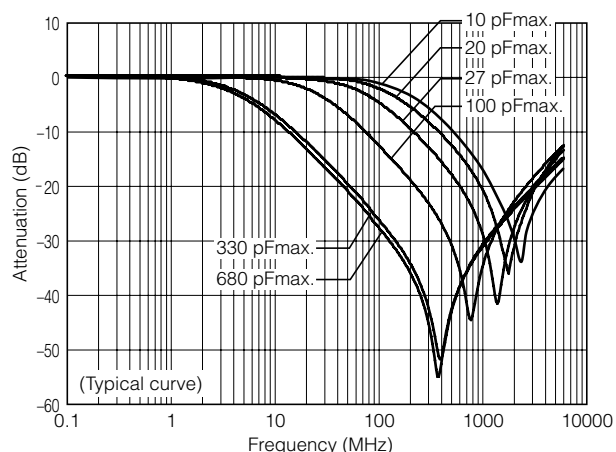


### ● EZJZ Series

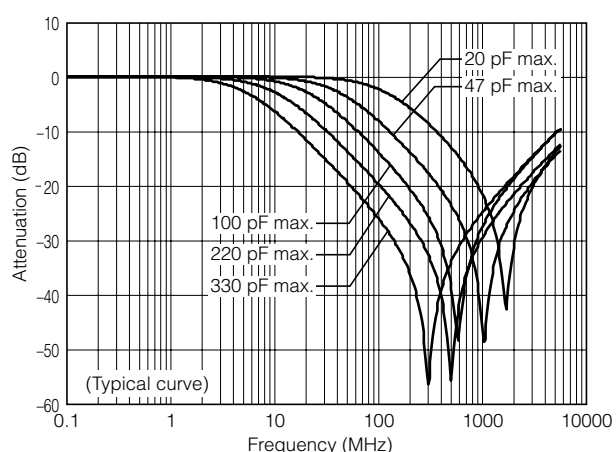


## ■ Frequency vs. Transmission

### ● EZJP Series



### ● EZJZ Series



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