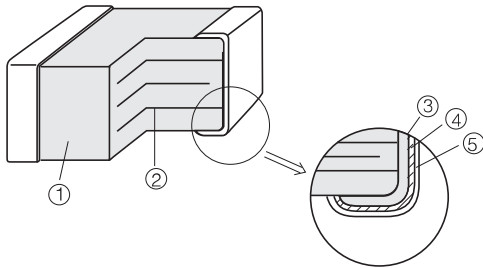


Features

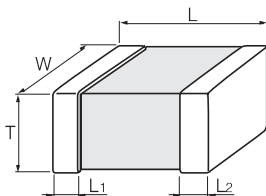
- Excellent ESD suppression due to original advanced material technology
- Having large electrostatic resistance meeting IEC61000-4-2, Level 4 standard
- Having no polarity (bipolar) facilitated replacing Zener Diodes. Capable of replacing 2 Zener Diodes and 1 Capacitor.
- Lead-free plating terminal electrodes enabling great solderability
- Wide range of products is available by adopting multilayer structure, meeting various needs.
- Low capacitance versions for DC voltage lines of high speed busses
- Ultra low capacitance for high speed signal line
- Applicable to high-speed signal lines, such as interfaces (e.g. USB 2.0, IEEE1394, HDMI, and so on), due to our original ultra-low capacitance technology.
- RoHS compliant

Construction



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

Dimensions in mm (not to scale)



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

Features

- Multilayer monolithic ceramic construction for high speed signal lines
- Ideal for USB 2.0, IEEE1394, and HDMI high speed data busses
- Applicable to high-speed signal lines, such as interfaces (e.g. USB 2.0, IEEE1394, HDMI, and so on), due to our original material technology and multilayer technology.
- Capacitance: 0.8 to 2.1 pF typ.

Recommended Applications

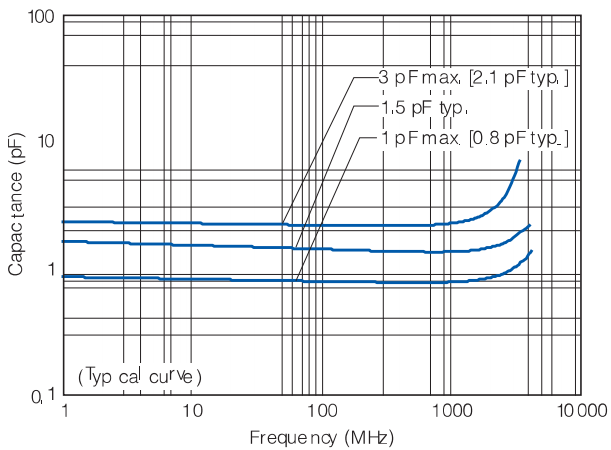
| | |
|--------------|-------------------------------|
| Mobile phone | Antenna circuit, External IF |
| DSC, DVC | USB2.0, IEEE1394 |
| PC, PDA | USB2.0, IEEE1394, LAN1000BASE |
| TV, DVD | USB2.0, IEEE1394, HDMI |
| Game console | Controller, External IF |

Ratings and Characteristics

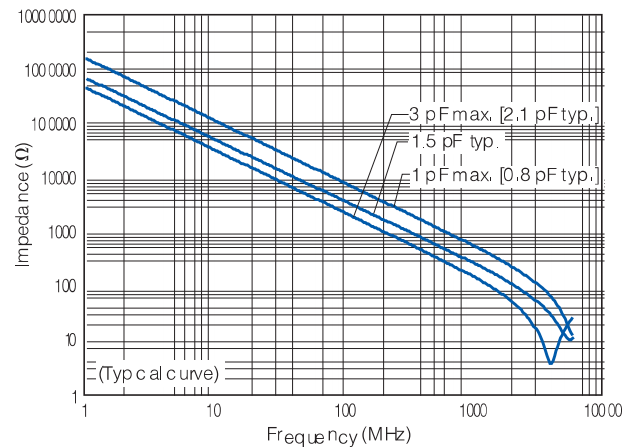
| Size | Part No. | Maximum allowable voltage DC (V) | Nominal varistor voltage at 1mA (V) | Capacitance (pF) at 1MHz | Maximum ESD IEC61000-4-2 |
|------|-------------|----------------------------------|-------------------------------------|--------------------------|--------------------------|
| 0402 | 0402ESDA-05 | 5 | 25 | 5 | Contact discharge : 8kV |
| | 0402ESDA-09 | 9 | 30 | 3 | |
| | 0402ESDA-LF | 18 | 200 | 3 | |
| | 0402ESDA-LC | 24 | 200 | 1 | |
| | 0402ESDA-LP | 24 | 200 | 0.6 | |
| 0603 | 0603ESDA-05 | 5 | 25 | 5 | |
| | 0603ESDA-09 | 9 | 30 | 3 | |
| | 0603ESDA-LF | 18 | 200 | 3 | |
| | 0603ESDA-LC | 24 | 200 | 1 | |

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

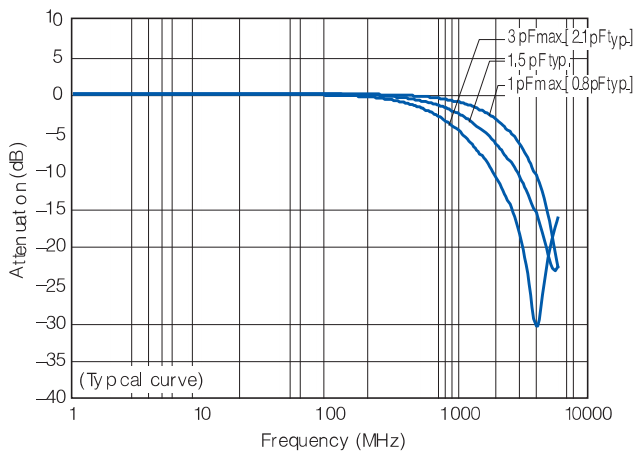
Capacitance vs. Frequency



Impedance vs. Frequency

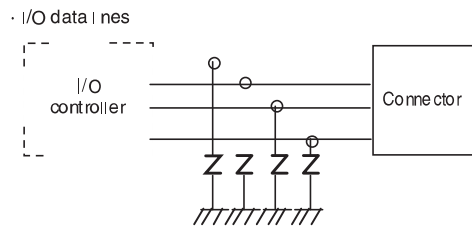
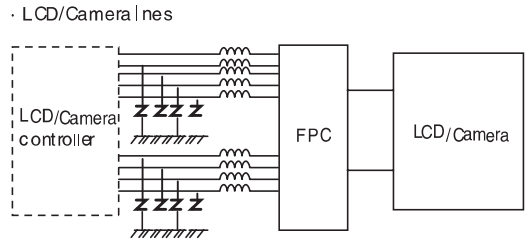
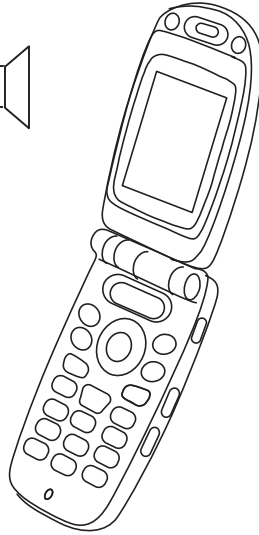
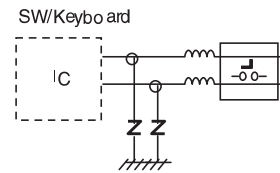
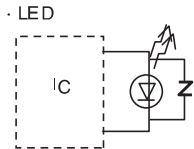
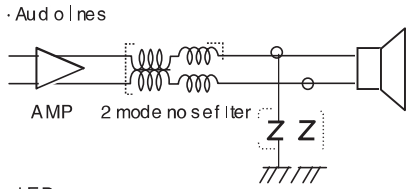


Attenuation vs. Frequency

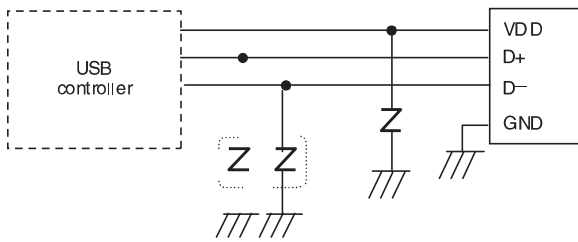


Applications

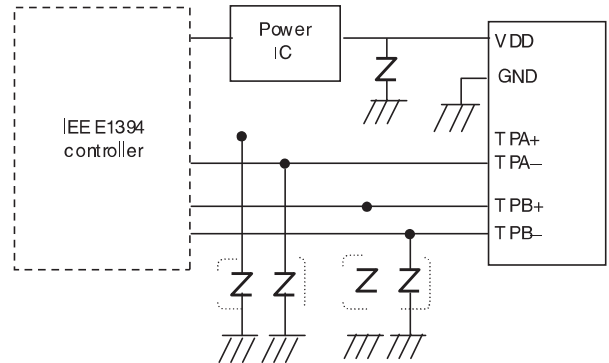
● Mobile Phone



● USB 1.1/2.0 lines



● IEEE 1394 lines



● HDMI lines

