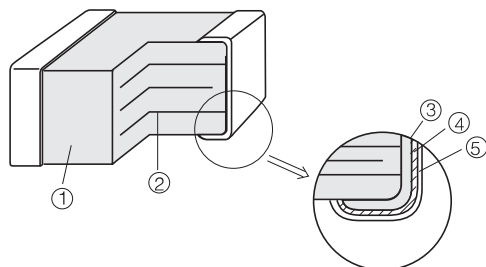


Features

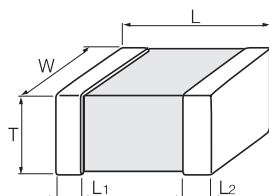
- Excellent ESD suppression due to original advanced material technology
- Having large electrostatic resistance meeting IEC61000-4-2, Level 4 standard
- Having no polarity (bipolar) facilitated replacing Zener Diodes. Capable of replacing 2 Zener Diodes and 1 Capacitor.
- Lead-free plating terminal 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	Terminal electrode	Substrate electrode
④		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

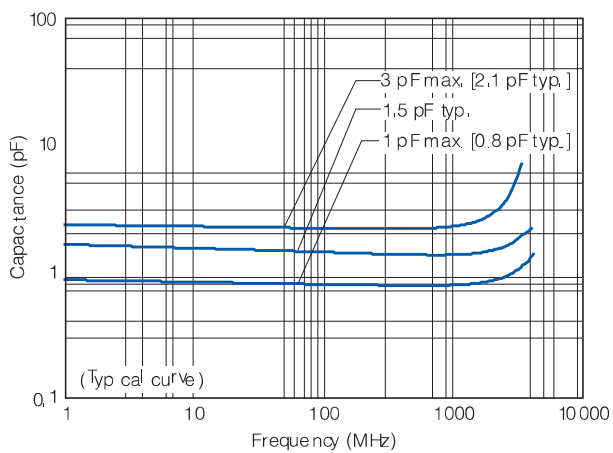
Ratings and Characteristics

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	

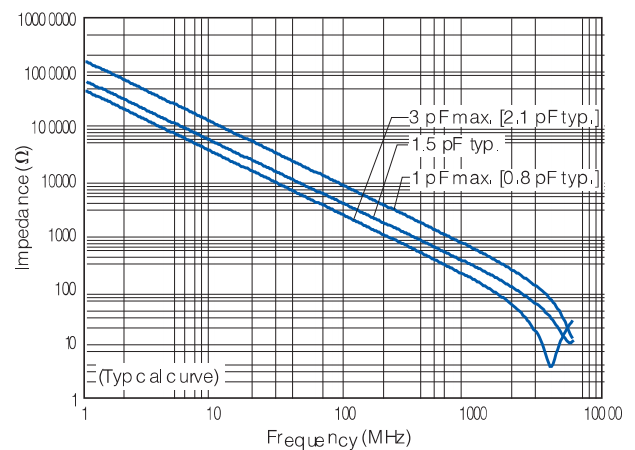
● Operating Temperature Range: -40 to 85 °C

* Recommend soldering method : Reflow soldering

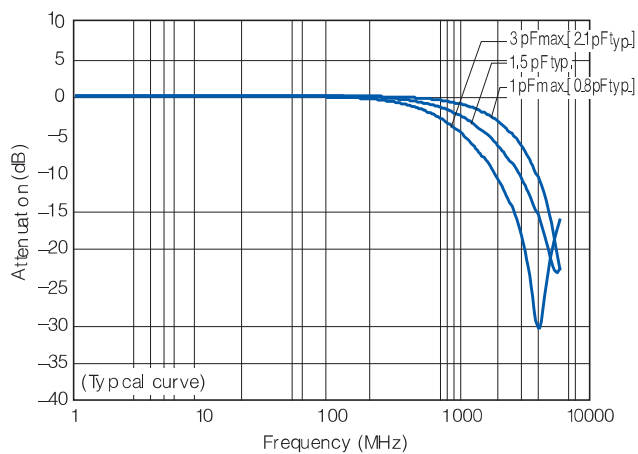
Capacitance vs. Frequency



Impedance vs. Frequency



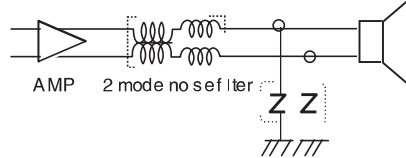
Attenuation vs. Frequency



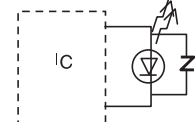
Applications

● Mobile Phone

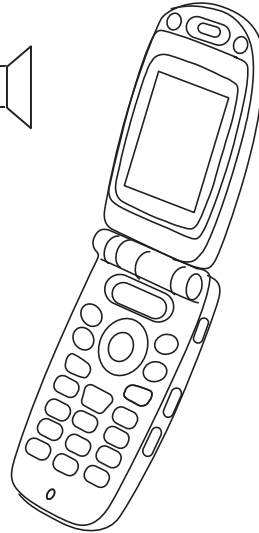
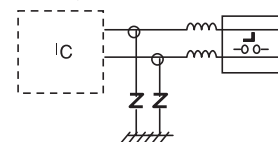
· Audio lines



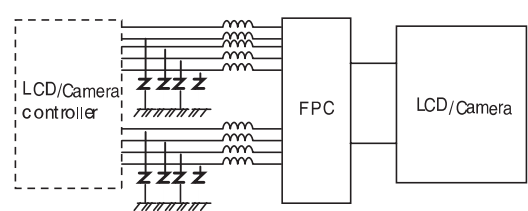
· LED



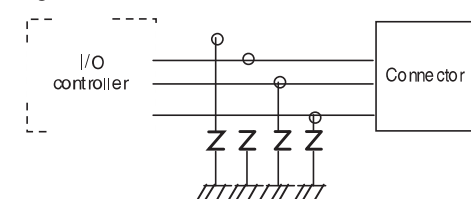
SW/Keyboard



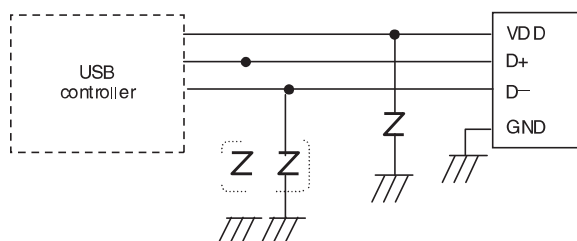
· LCD/Camera lines



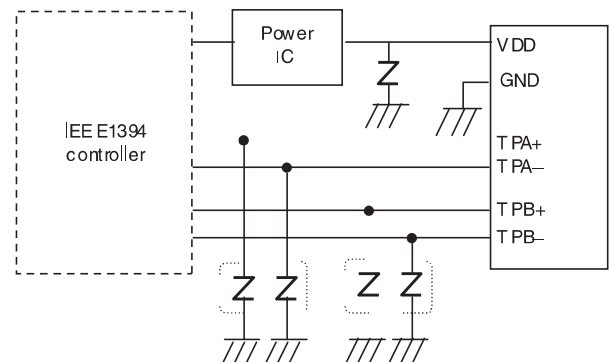
· I/O data lines



● USB1.1/2.0 lines



● IEEE 1394 lines



● HDMI lines

