

# Surface Mount ESD Suppressors

## Surface Mount ESD Suppressor Array, EC1004L4V012AT



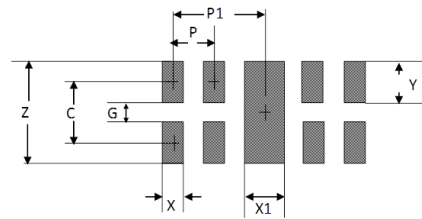
### Features:

- Extremely quick response time (<1ns) present ideal ESD protection
- Extremely low capacitance (0.1pF typical)
- Extremely low leakage current (0.01μA)
- Zero signal distortion
- SMD (Surface Mount Device)
- Protection against ESD voltages and currents (IEC61000-4 -2 Level 4)
- Lead free, RoHS Compliance
- Operating temperature -55°C ~ +125°C
- Storage temperature range -55°C ~ +125°C

### Application:

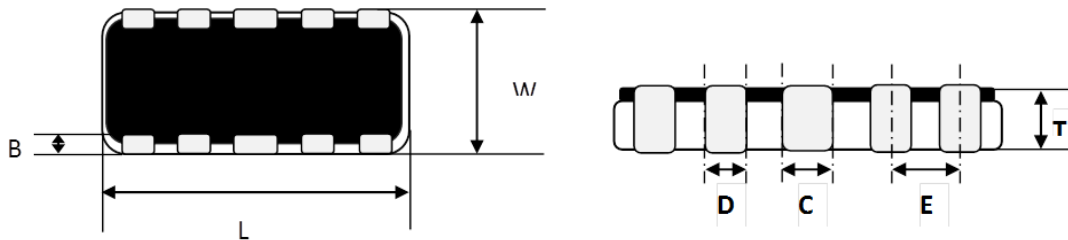
- Antenna circuit
- DVI
- USB2.0/3.0
- HDMI1.3/1.4
- IEEE-1394

### Recommended Foot Print Dimensions:



Unit	Inch	mm
Y	0.024	0.6
G	0.008	0.2
Z	0.055	1.4
X	0.008	0.2
XL	0.012	0.3
P	0.020	0.5
P1	0.039	1.0
C	0.031	0.8

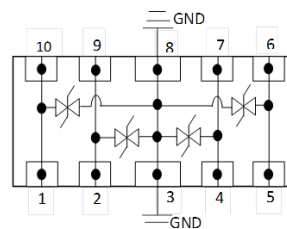
### Shape and Dimensions:



Size Inch/(mm)	L	W	T	B	C	D	E
<b>1004 (2510)</b>	0.098±0.004 (2.5±0.1)	0.039±0.004 (1.0±0.1)	0.020±0.004 (0.5±0.1)	0.008±0.004 (0.2±0.1)	0.012±0.002 (0.3±0.05)	0.008±0.002 (0.2±0.05)	0.020±0.002 (0.5±0.05)

### Circuit Symbol:

Pin	Description
1,2,4,5	Data Lines
6,7,9,10	Data Lines (No Internal Connection)
3,8	Ground



### Packaging Information:

Package	Tape & Reel Quantity (piece)
<b>1004 (2510)</b>	5,000

### Storage Conditions:

Storage Time: 12 months max  
 Storage Temperature : 5°C to 30°C  
 Relative Humidity: < 60% RH

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### Electrical Characteristics (@25°C):

Characteristic	Value
IEC61000-4-2 Direct Discharge IEC61000-4-2 Air Discharge	Level 4 - 10 kV Level 4 - 15 kV
Trigger Voltage	300 V typical (measured per IEC61000-4-2, 8kV Direct Discharge)
Clamping Voltage	30 V typical (measured per IEC61000-4-2, 8kV Direct Discharge)
Response Time	Less than 1 ns
Capacitance @ f = 1MHz	0.1 pF typical
Leakage Current @ 12 V <sub>DC</sub>	0.01 μA max.
Rated Voltage	12 V <sub>DC</sub> max.
ESD Pulse Withstand	1000 Pulses typical

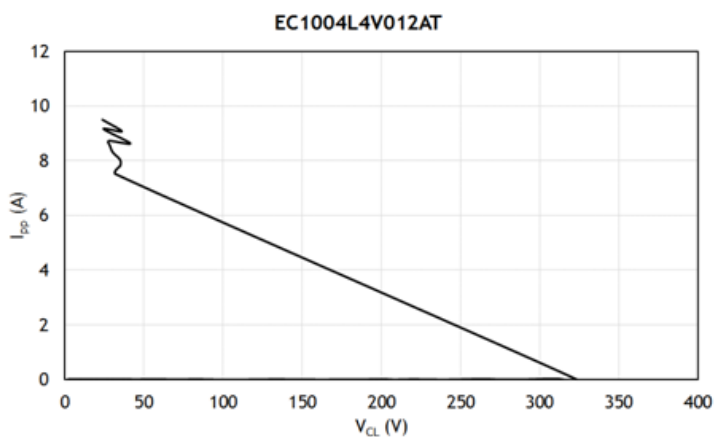


Fig. 1  
Dynamic resistance with positive clamping voltage  
 $t_p = 100\text{ns}$ ; Transmission Line Pulse (TLP)

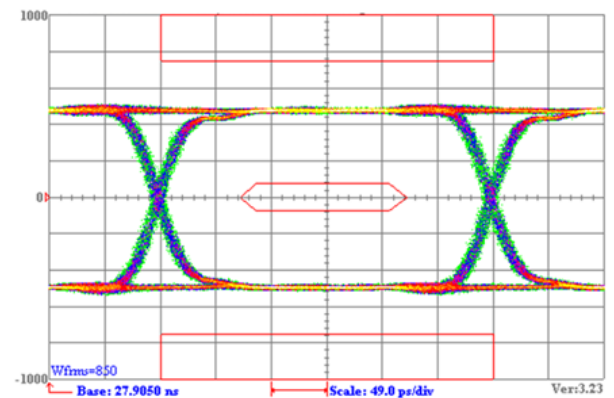


Fig. 1  
Eye Diagram (HDMI 1.3)

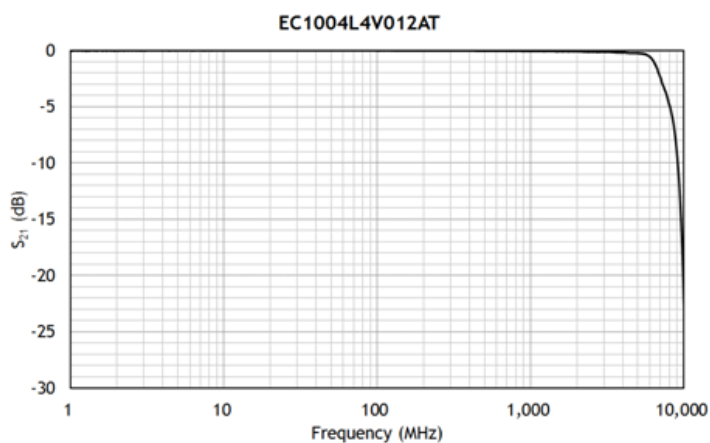
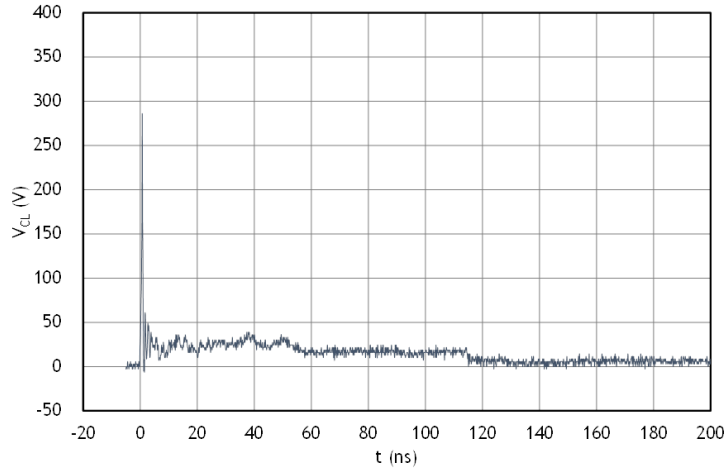


Fig. 3 Insertion loss; typical value

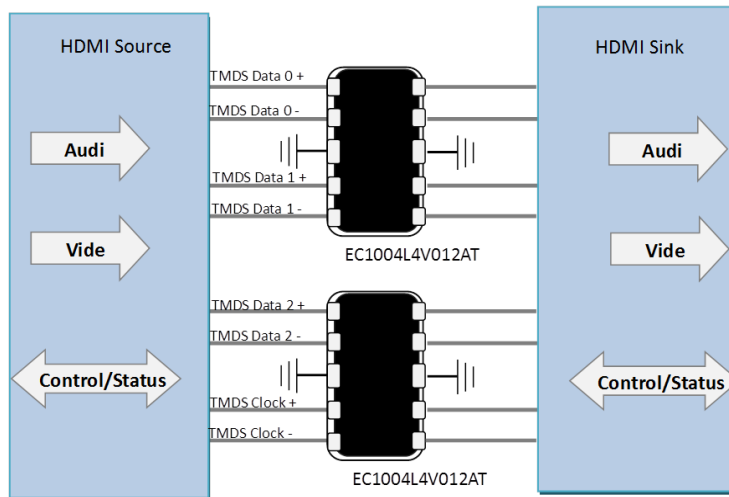
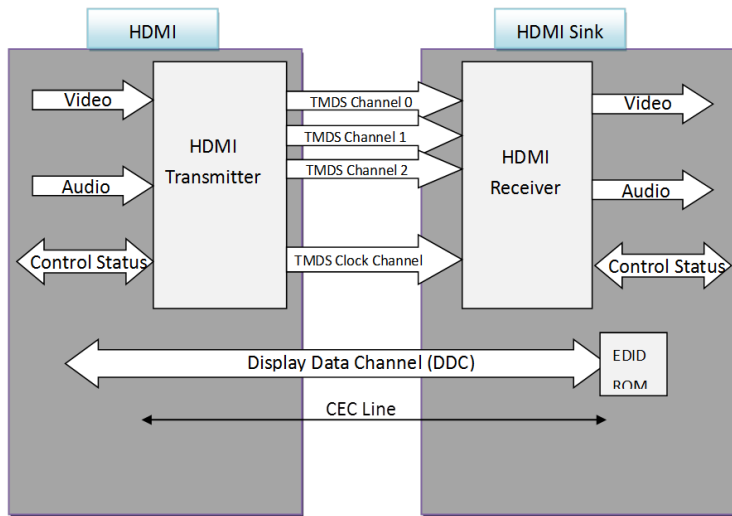
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### Representative Test Waveform Per IEC61000-4-2 Level 4, 8kv Direct Discharge:



### HDMI Interface Application:



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