

# EVVOSEMI<sup>®</sup>

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

## Product Specification

▶ Domestic	Part Number	ESD0522P
▶ Overseas	Part Number	ESD0522P
▶ Equivalent	Part Number	ESD0522P

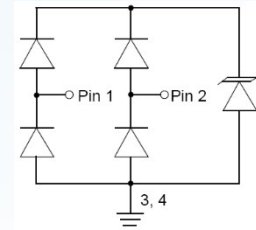
EV is the abbreviation of name EVVO

## Ultra Low Capacitance ESD Protection Array

### DESCRIPTION

ESD0522P is an ultra-low capacitance Transient Voltage Suppressor (TVS) designed to protection for high-speed data interfaces. With typical capacitance of 0.2pF (I/O to I/O) only, ESD0522P is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4( $\pm 15\text{KV}$  air,  $\pm 8\text{KV}$  contact discharge), IEC61000-4-4 (electrical fast transient-EFT) (40A, 5/50ns), very fast charged device model (CDM) ESD and cable discharge event(CDE),etc.

ESD0522P uses ultra-small DFN1610-6L package. Each GESD0522P device can protect two high-speed data lines. The combined features of ultra-low capacitance, ultra-small size and high ESD robustness makes GESD0522P ideal for high-speed data ports and high-frequency lines (e.g., HDMI & DVI) applications. The low clamping voltage of the ESD0522P guarantees a minimum stress on the protected IC.



### FEATURES

- Transient protection for high-speed data lines  
IEC 61000-4-2(ESD)  $\pm 15\text{KV}$ (Air)  
 $\pm 8\text{KV}$ (Contact)  
IEC 61000-4-4(EFT)40A(5/50ns)  
Cable Discharge Event(CDE)
- Package optimized for high-speed lines
- Protects two I/O lines
- Ultra Low capacitance:0.2pf (typical between I/O channel)
- Low operating and clamping voltages

### APPLICATIONS

- High Definition Multi-Media Interface (HDMI)
- USB 1.1/2.0/3.0/OTG
- IEEE 1394 Firewire Ports
- Projection TV Monitors and Flat Panel Displays
- Notebook Computers
- Set Top Box

### MACHANICAL DATA

- DFN1610-6L package
- Flammability Rating: UL 94V-0
- Terminal: Matte tin plated.
- Packaging: Tape and Reel
- High temperature soldering guaranteed:260°C/10s
- Reel size: 7 inch

## Ultra Low Capacitance ESD Protection Array

**ABSOLUTE MAXIMUM RATING**

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power (8/20μs)	60	W
V <sub>ESD</sub>	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±30 ±20	kV
T <sub>OPT</sub>	Operating Temperature	-55/+125	°C
T <sub>STG</sub>	Storage Temperature	-55/+150	°C

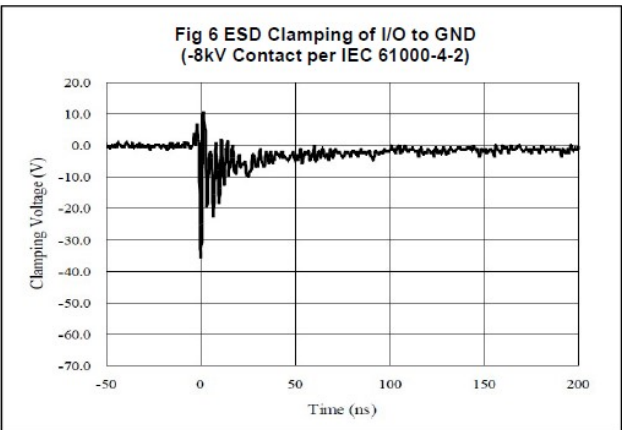
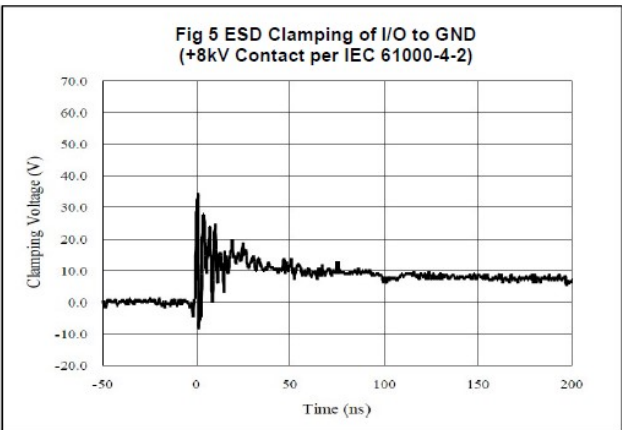
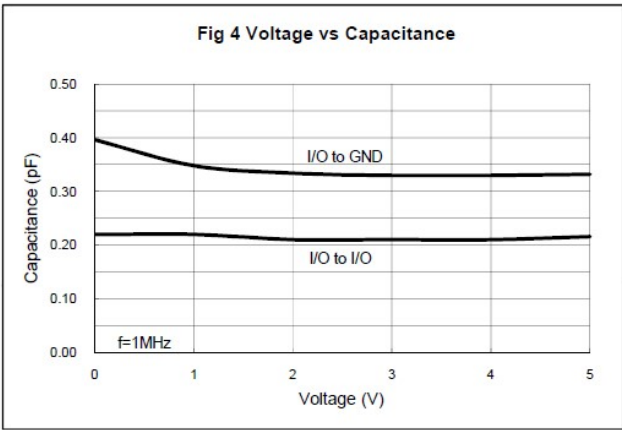
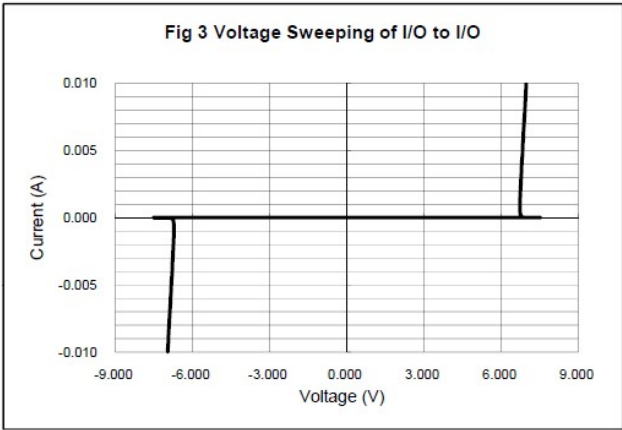
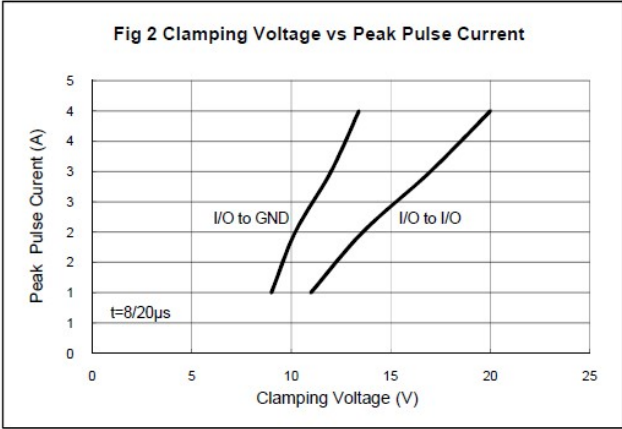
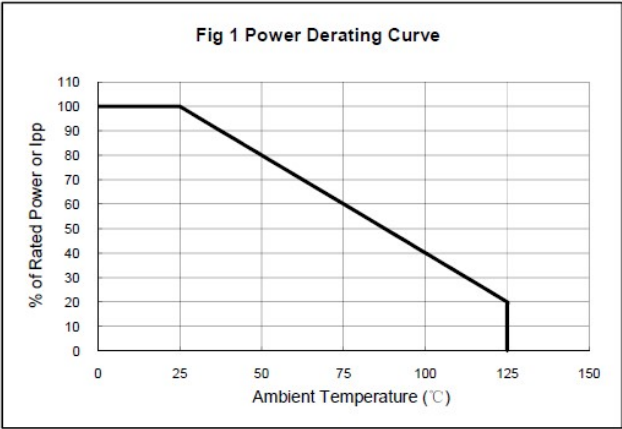
**ELECTRICAL CHARACTERISTICS (T<sub>amb</sub>=25°C)**

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V <sub>RWM</sub>	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA Any I/O pin to GND	6.0			V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 5V Any I/O pin to GND			100	nA
V <sub>F</sub>	Diode Forward Voltage	I <sub>F</sub> = 15 mA Any I/O pin to GND			1.2	V
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, t <sub>p</sub> = 8/20μs Any I/O pin to GND			10	V
		I <sub>PP</sub> = 4A, t <sub>p</sub> = 8/20μs Any I/O pin to GND			15	V
C <sub>ESD</sub>	Capacitance	V <sub>R</sub> = 0V, f = 1MHz Between I/O and GND		0.4	0.6	pF
C <sub>ESD</sub>	Capacitance	V <sub>R</sub> = 0V, f = 1MHz Between I/O and I/O		0.2	0.3	pF

Note: I/O pins are pin 1 and 2, GND pins are pin 3 and 4.

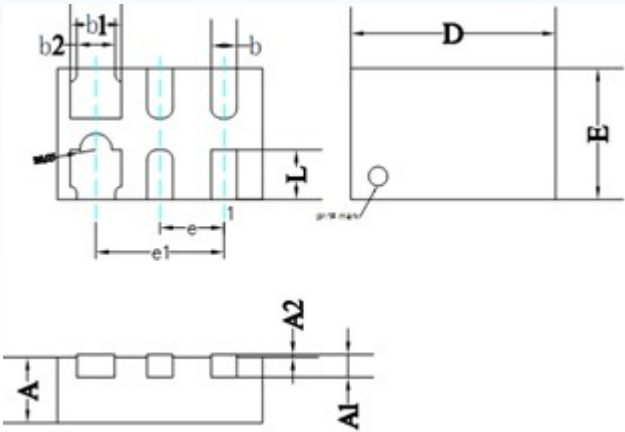
Ultra Low Capacitance ESD Protection Array

ELECTRICAL CHARACTERISTICS CURVE



Ultra Low Capacitance ESD Protection Array

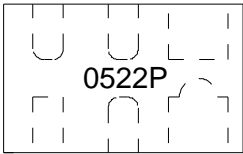
DFN1610-6L PACKAGE OUTLINE DIMENSIONS



ALL DIMENSIONS IN MM

	MIN	NOM	MAX
D	1.55	1.60	1.65
E	0.95	1.00	1.05
L	0.33	0.38	0.43
b	0.15	0.20	0.25
b1	0.35	0.40	0.45
b2	0.25	0.30	0.35
e	0.50BSC		
e1	1.00BSC		
A	0.45	0.50	0.55
A1	0.15REF		
A2	0.00	—	0.05

Marking



Ordering information

Order code	Package	Base qty	Delivery mode
ESD0522P	DFN1610-6L	3000	Tape and reel



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