

1.Description

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.

3.Applications

- High Definition Multi-Media Interface (HDMI)
- USB 1.1/2.0/3.0/OTG
- IEEE 1394 Firewire Ports

4.Mechanical Data

- DFN1610-6L package
- Flammability Rating: UL 94V-0
- Terminal: Matte tin plated.

2.Features

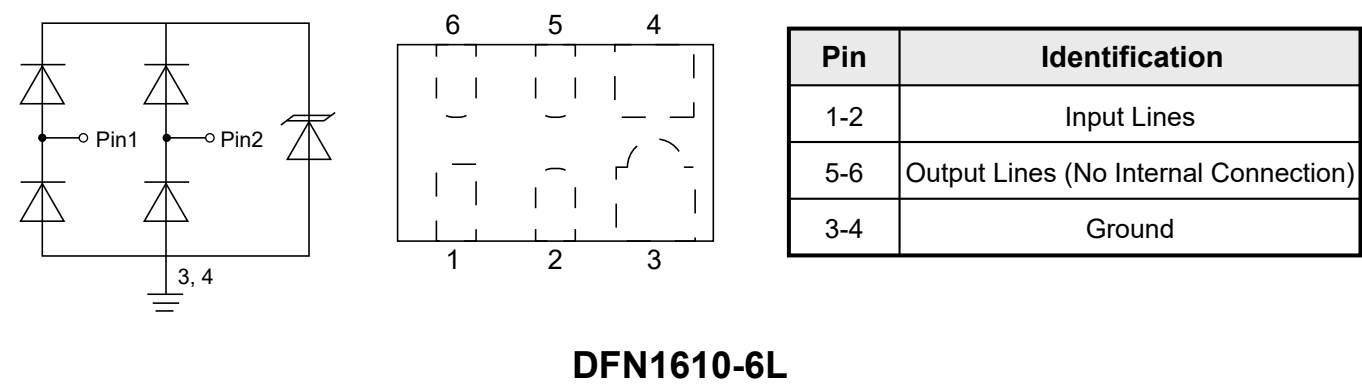
- Transient protection for high-speed data lines
IEC 61000-4-2(ESD) $\pm 15\text{KV}$ (Air)
 $\pm 8\text{KV}$ (Contact)
IEC 61000-4-4(EFT)40A(5/50ns)
Cable Discharge Event(CDE)
- Package optimized for high-speed lines
- Protects two I/O lines
- Ultra Low capacitance:0.2pf (typical between I/O channel)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

- Projection TV Monitors and Flat Panel Displays
- Notebook Computers
- Set Top Box

- Packaging: Tape and Reel
- High temperature soldering guaranteed:260℃/10s
- Reel size: 7 inch



5.Pinning information



6.Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Peak Pulse Power (8/20μs)	P _{PP}	60	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±15	kV
ESD per IEC 61000-4-2 (Contact)		±8	kV
Junction Temperature	T _{OPT}	-55 to 125	°C
Storage Temperature	T _{STG}	-55 to 150	°C



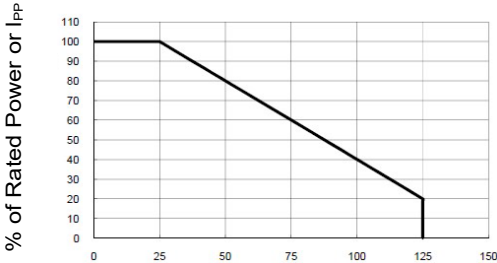
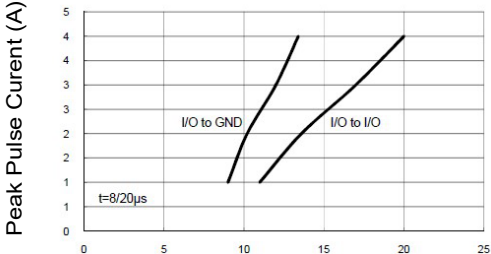
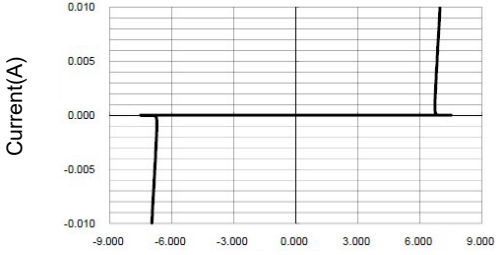
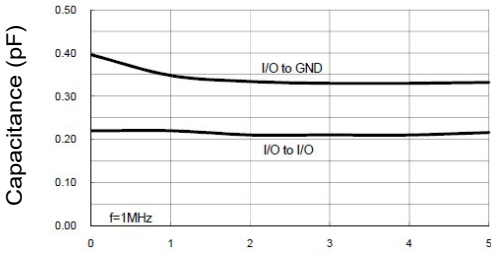
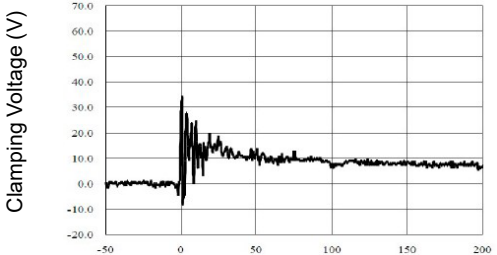
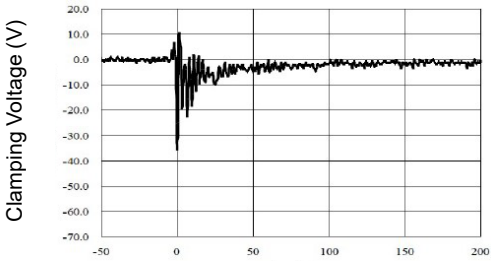
7. Electrical Characteristics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}	Any I/O pin to GND			5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$, Any I/O pin to GND	6			V
Reverse Leakage Current	I_R	$V_{RWM}=5V$, Any I/O pin to GND			100	nA
Diode Forward Voltage	I_{PP}	$I_F=15mA$, Any I/O pin to GND			1.2	V
Clamping Voltage	V_C	$I_{PP}=1A$, $t_p=8/20\mu s$, Any I/O pin to GND			10	V
		$I_{PP}=4A$, $t_p=8/20\mu s$, Any I/O pin to GND			15	V
Capacitance	C_{ESD}	$V_R=0V$, $f=1MHz$, Between I/O and GND		0.4	0.6	pF
		$V_R=0V$, $f=1MHz$, Between I/O and I/O		0.2	0.3	pF

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

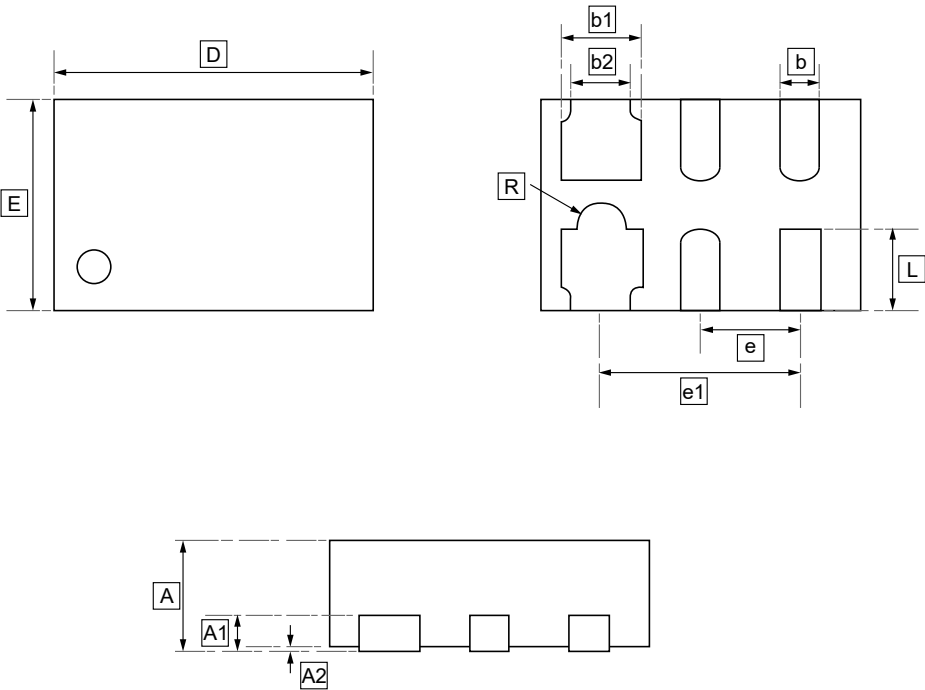


8. Typical characteristic

 <p>Figure 1: Power Derating Curve</p>	 <p>Figure 2: Clamping Voltage vs Peak Pulse Current</p>
 <p>Figure 3: Voltage Sweeping of I/O to I/O</p>	 <p>Figure 4: CVoltage vs Capacitance</p>
 <p>Figure 5: ESD Clamping of I/O to GND (+8kV Contact per IEC 61000-4-2)</p>	 <p>Figure 6: ESD Clamping of I/O to GND (-8kV Contact per IEC 61000-4-2)</p>



9.DFN1006 Package Outline Dimensions

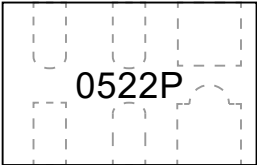


DIMENSIONS (mm are the original dimensions)

Symbol	D	E	L	b	b1	b2	e	e1	R	A	A1	A2
Min	1.55	0.95	0.33	0.15	0.35	0.25	0.50	1.00	0.125	0.45	0.152	-
Max	1.65	1.05	0.43	0.25	0.45	0.35	BSC	BSC	BSC	0.55	REF	0.05



10.Ordering information



Order Code	Package	Base QTY	Delivery Mode
UMW ESD0522P	DFN1610-6L	3000	Tape and reel



11.Disclaimer

UMW reserves the right to make changes to all products, specifications. Customers should obtain the latest version of product documentation and verify the completeness and currency of the information before placing an order.

When applying our products, please do not exceed the maximum rated values, as this may affect the reliability of the entire system. Under certain conditions, any semiconductor product may experience faults or failures. Buyers are responsible for adhering to safety standards and implementing safety measures during system design, prototyping, and manufacturing when using our products to prevent potential failure risks that could lead to personal injury or property damage.

Unless explicitly stated in writing, UMW products are not intended for use in medical, life-saving, or life-sustaining applications, nor for any other applications where product failure could result in personal injury or death. If customers use or sell the product for such applications without explicit authorization, they assume all associated risks.

When reselling, applying, or exporting, please comply with export control laws and regulations of China, the United States, the United Kingdom, the European Union, and other relevant countries, regions, and international organizations.

This document and any actions by UMW do not grant any intellectual property rights, whether express or implied, by estoppel or otherwise. The product names and marks mentioned herein may be trademarks of their respective owners.