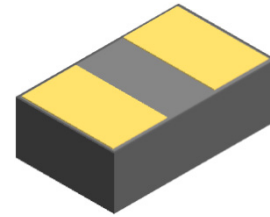


1 Channel Ultra-low Capacitance ESD Protection

Feature

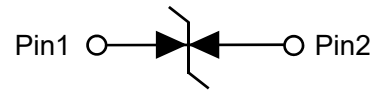
- Ultra-Low capacitance:0.05pF(typ.)
- Low leakage current(<100nA)
- Fast response time(<1ns)
- Bi-directional, single line protection
- Transient protection for data lines to IEC 61000-4-2(ESD) 25kV(air), 15kV(contact);



Bottom View

Applications

- USB 3.0/3.1
- HDMI 1.3/1.4/2.0
- RF Antenna
- SATA and eSATA Interface



Circuit Diagram

Absolute maximum rating@25°C

Rating	Symbol	Value	Units
Operating Temperature Range	T_A	-55~+125	°C
Storage Temperature Range	T_{STG}	-55~+125	°C
ESD Protection-Contact Discharge	V_{ESD}	15	kV
ESD Protection-Air Discharge	V_{ESD}	25	kV

Electrical characteristics per line@25°C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Continuous Operating Voltage	V_{DC}	-	-	-	24	V
Trigger Voltage	V_T	$V_{ESD} = 8kV$	-	300	-	V
Clamping Voltage	V_C	$V_{ESD} = 8kV$	-	35	-	V
Leakage Current	I_L	$V_{DC} = 24V$	-	0.01	0.1	μA
Junction Capacitance	C_J	$f = 10MHz$	-	0.05	-	pF

Typical Characteristics

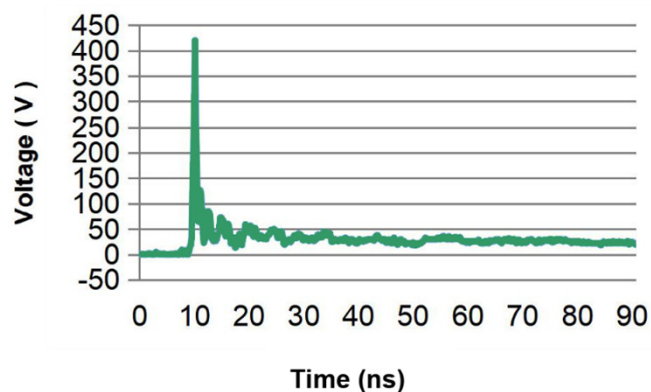


Fig.1 Typical ESD Response
(IEC 61000-4-2, 8kV contact discharge)

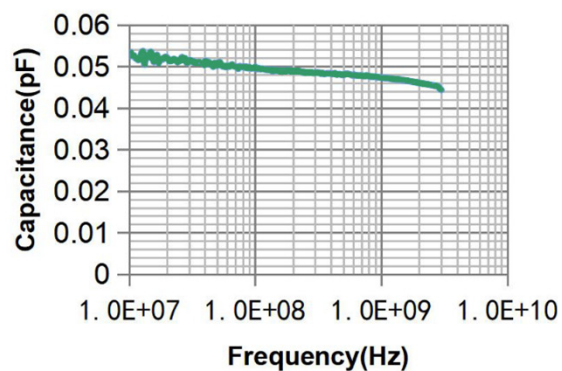


Fig.2 Typical Device Capacitance VS. Frequency

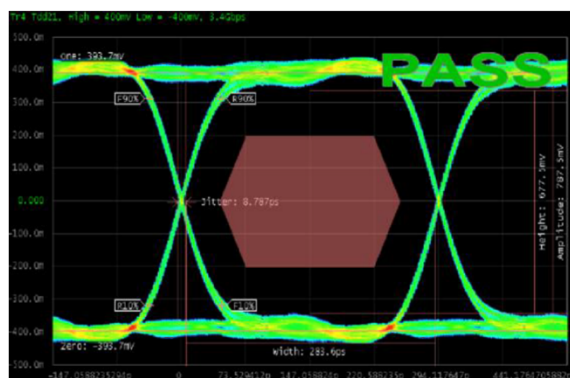


Fig.3 HDMI 1.4 Mask at 3.4 Gbps

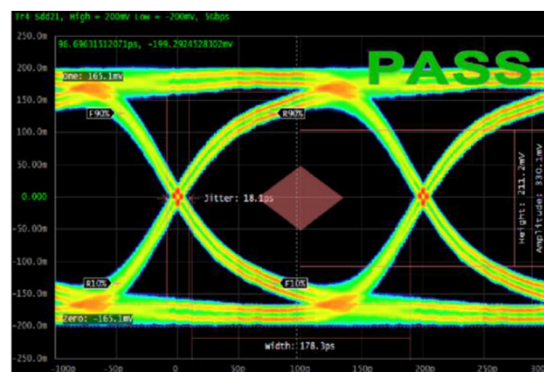


Fig.4 USB 3.0 Mask at 5.0 Gbps

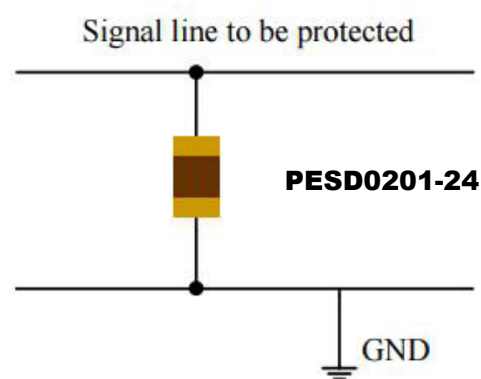
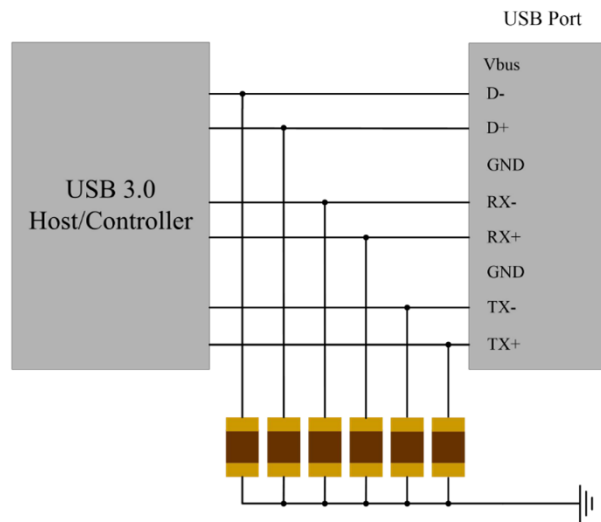


Fig.5 HDMI 2.0 Mask at 6.0 Gbps

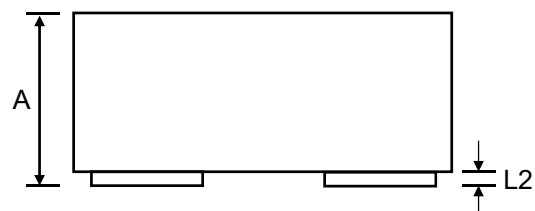
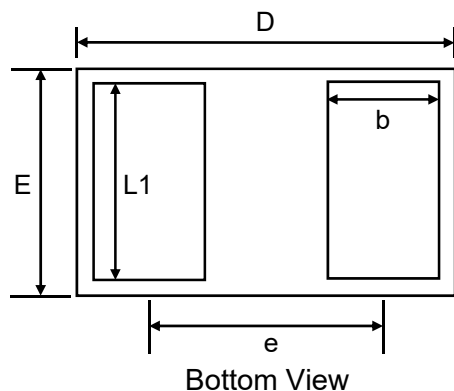
ESD Protection for Signal Line

The PESD is designed for the protection of one bidirectional data line from ESD damage.

- Place the PESD as close to the input terminal or connector as possible.
- Minimize the path length between the PESD and the protected signal line.
- Use ground planes whenever possible.

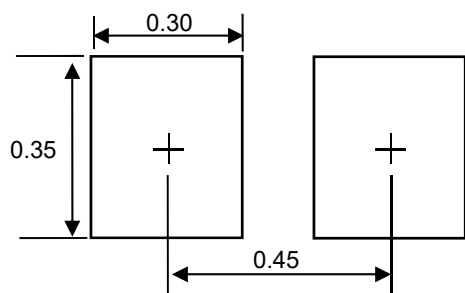


Product dimension (0201)



Side View

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	0.25	0.40	0.010	0.016
b	0.15	0.20	0.006	0.008
D	0.50	0.70	0.020	0.028
E	0.25	0.35	0.010	0.014
e	0.35 BSC		0.014 BSC	
L1	0.20	0.30	0.008	0.012
L2	0.00	0.05	0.000	0.002



Unit:mm

Suggested PCB Layout

Ordering information

Package	Reel	Shipping
0201	7"	15000 / Tape & Reel

IMPORTANT NOTICE

 and **Prisemi**[®] are registered trademarks of **Prisemi Electronics Co., Ltd** (Prisemi), Prisemi reserves the right to make changes without further notice to any products herein. Prisemi makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Prisemi assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in Prisemi data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Prisemi does not convey any license under its patent rights nor the rights of others. The products listed in this document are designed to be used with ordinary electronic equipment or devices, Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

Website: <http://www.prisemi.com>

For additional information, please contact your local Sales Representative.

©Copyright 2009, Prisemi Electronics

 **Prisemi**[®] is a registered trademark of Prisemi Electronics.

All rights are reserved.