

ESD1.5V02D-ULC

ROHS

Transient Voltage Suppressors for ESD Protection

Description

The ESD1.5V02D-ULC is ultra low capacitance TVS designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over-voltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT(electrical fast transients).

Features

- ◆ 12 Watts Peak Pulse Power Per Line (tp=8/20μs)
- ◆ Solid-State Silicon-Avalanche Technology
- ◆ Capacitance: 0.2pF(Typ.)
- ◆ Low Clamping Voltage
- ◆ Low Leakage Current
- ◆ RoHS Compliant
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (LIGHTING) 4.0A (8/20μs)
- ◆ IEC61000-4-2(ESD) : ±15kV (air discharge)
±12kV (contact discharge)

Applications

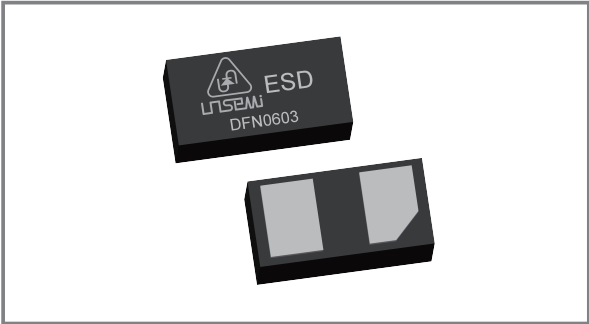
- ◆ Consumer Electronics
- ◆ Thunderbolt Interface
- ◆ USB Type-C Interface
- ◆ USB 3.1 / 3.2 / 4.0 Interface
- ◆ Handheld Portable Application

Mechanical Characteristics

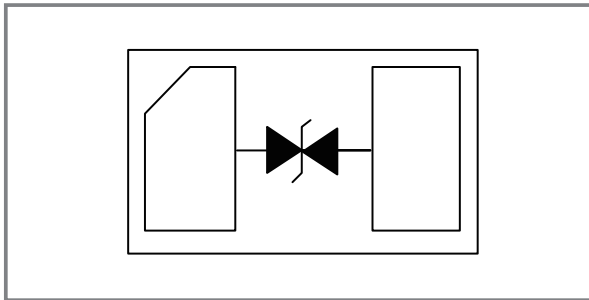
Parameter	Symbol	Value	Units
Peak Pulse Power (Tp=8/20μs Waveform)	PPP	12	Watts
Lead Soldering Temperature	TL	260 (10 sec.)	°C
Storage Temperature Range	TSTG	-55 to +150	°C
Operating Junction Temperature Range	TJ	-55 to +125	°C



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Typic Application Schematic



Mechanical Data

- ◆ 0201/DFN0603 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 0.3 Milligrams(Approximate)
- ◆ Mounting Position: Any

Electrical Characteristics @ 25°C Unless Otherwise Specified)

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	VRWM	--	--	--	1.5	V
Reverse Breakdown Voltage	VBR	IT=0.1mA	4.5	6.5	--	V
Reverse Leakage Current	IR	VRWM=1.5V , T=25°C	--	--	0.1	μA
Platform Clamping Voltage	VCP	I _{PP} =1.0A , TP=8/20μs	--	1.75	--	V
		I _{PP} =4.0A , TP=8/20μs	--	2.9	--	V
Junction capacitance	CJ	V _{DC} =1.0V , f=1MHz	--	0.25	--	pF

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

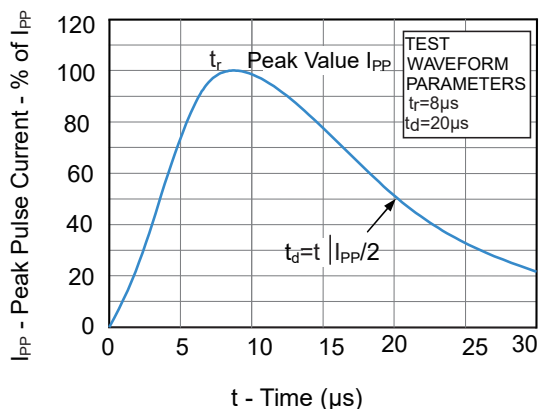


Fig2. Power Derating Curve

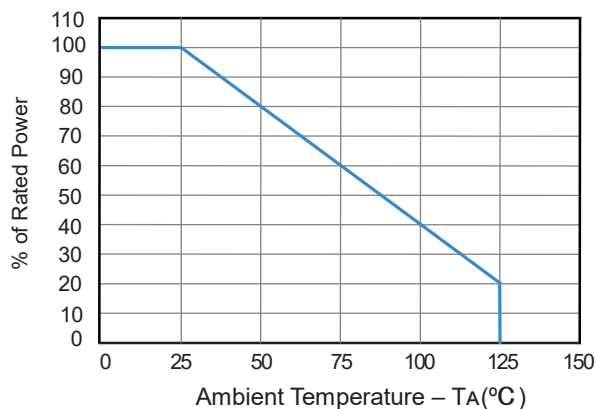


Fig3. Dynamic Resistance With Positive Clamping Voltage

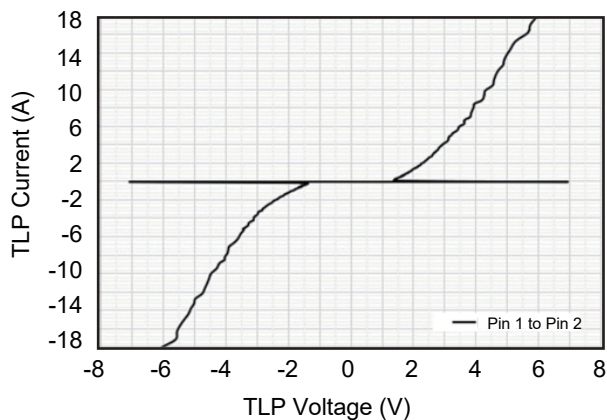
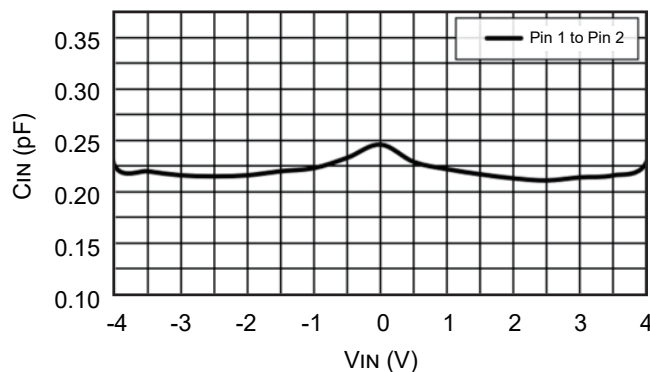
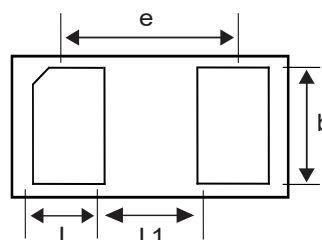
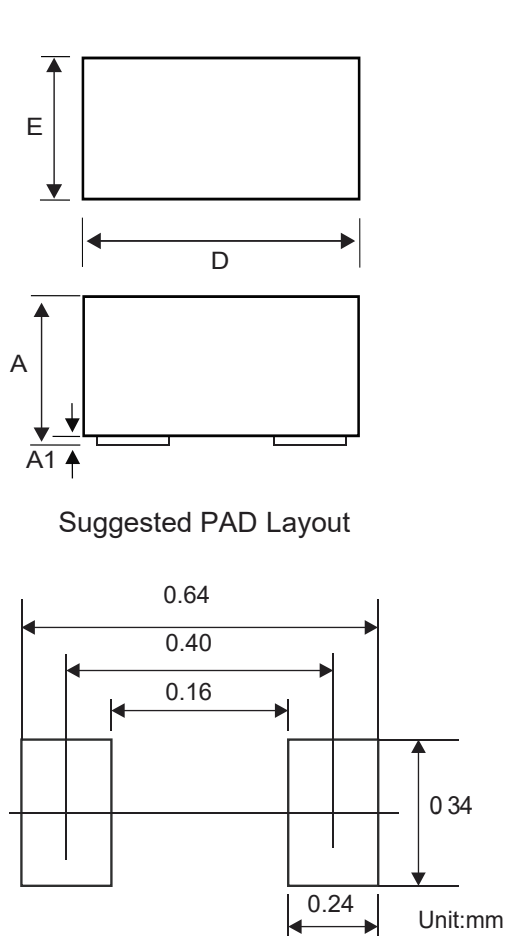


Fig4. Typical Variation of CIN vs. VIN



0201/DFN0603 Package Outline & Dimensions

0201/DFN0603



Symbol	Millimeters		
	Min	Nom	Max
A	0.270	0.300	0.340
A1	0	0.020	0.050
D	0.550	0.600	0.650
E	0.250	0.300	0.350
e	0.340REF		
L	0.140	0.180	0.240
b	0.200	0.250	0.300
L1	0.150REF		

Ordering Information

Device	Marking	Package	Quantity	Reel Size
ESD1.5V02D-ULC	1S	0201/DFN0603	10,000pcs/Reel	7 inch

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