ESD1.5V02D-ULC

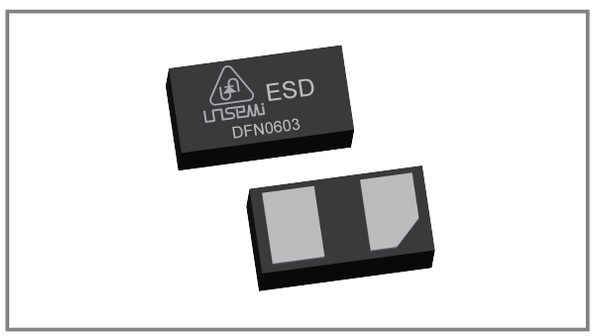
ROHS

Transient Voltage Suppressors for ESD Protection

www.unsemi.com

Description

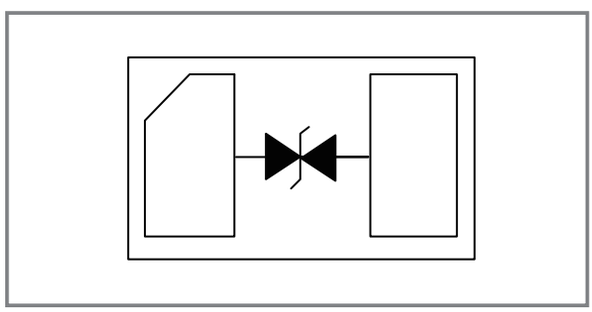
The ESD1.5V02D-ULC is ultra low capacitance TVS designed to protect high speed data interfaces. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from over-voltage caused by ESD (electrostatic discharge), CDE (Cable 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
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (LIGHTNING) 4.0A (8/20μs)
- IEC 61000-4-2(ESD) : ±15kV (air discharge)
  ±12kV (contact discharge)

Typic Application Schematic



Applications

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

Mechanical Data

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

Mechanical Characteristics

Parameter	Symbol	Value	Units
Peak Pulse Power (Tp=8/20μs Waveform)	P_{PP}	12	Watts
Lead Soldering Temperature	T_L	260 (10 sec.)	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C
Operating Junction Temperature Range	T_J	-55 to +125	°C

Electrical Characteristics(@ 25℃ Unless Otherwise Specified)

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Reverse Working Voltage	V_{RWM}	--	--	--	1.5	V
Reverse Breakdown Voltage	V_{BR}	I_T=0.1mA	4.5	6.5	--	V
Reverse Leakage Current	I_R	V_{RWM}=1.5V , T=25°C	--	--	0.1	μA
Platform Clamping Voltage	V_{CP}	I_{PP}=1.0A , T_P=8/20μs	--	1.75	--	V
		I_{PP}=4.0A , T_P=8/20μs	--	2.9	--	V
Junction capacitance	C_J	V_{DC}=1.0V , f=1MHz	--	0.25	--	pF

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

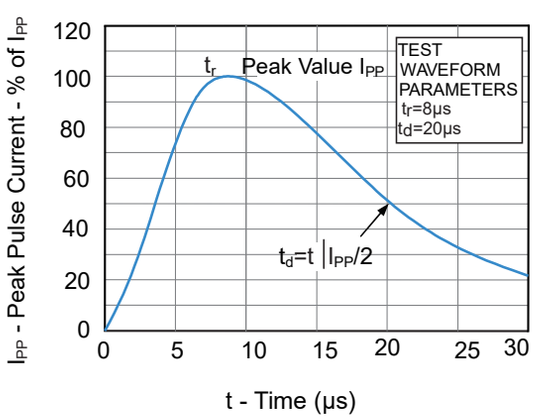


Fig2. Power Derating Curve

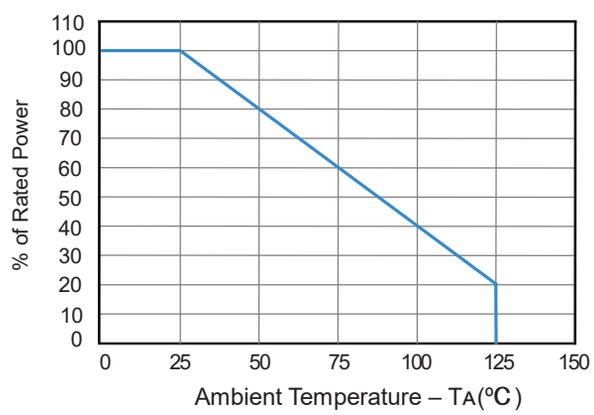


Fig3. Dynamic Resistance With Positive Clamping Voltage

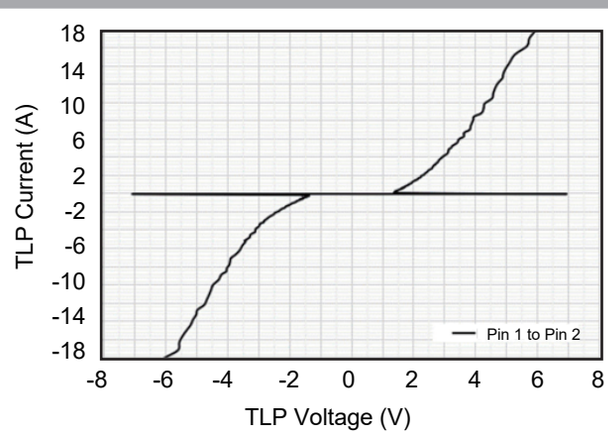
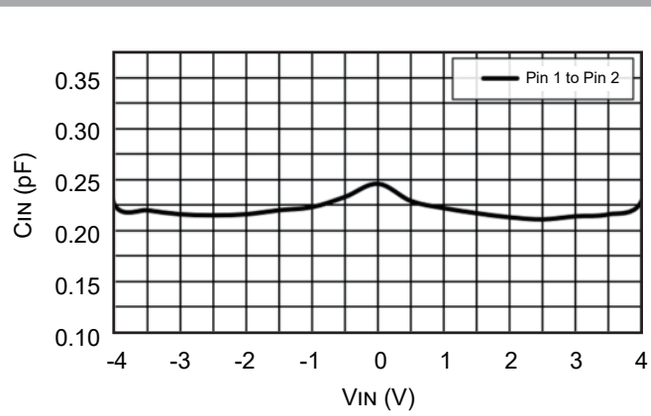
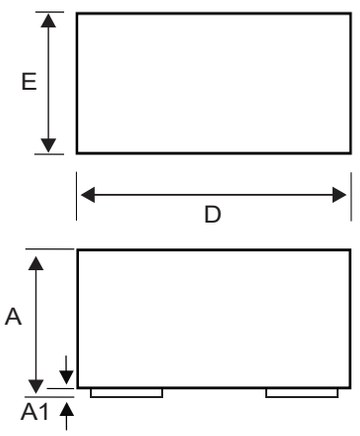


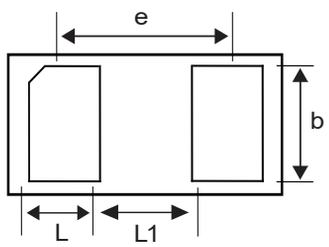
Fig4. Typical Variation of C_{IN} vs. V_{IN}



0201/DFN0603 Package Outline & Dimensions

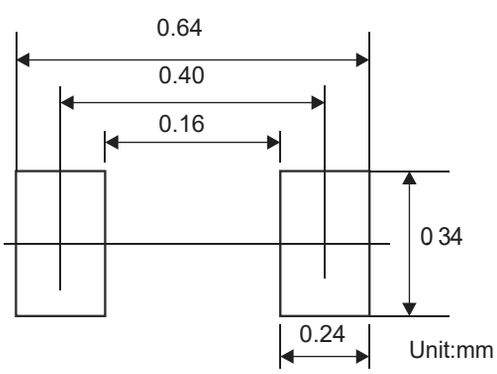
0201/DFN0603





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		

Suggested PAD Layout



Ordering Information

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

ROHS

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