

ESD1501BU

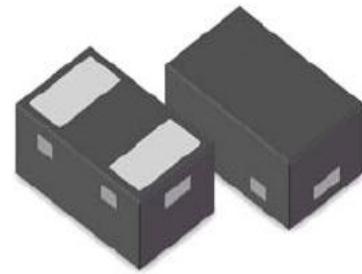
Transient Voltage Suppressors ESD Protection Diode

GENERAL DESCRIPTION

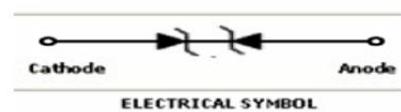
Silicon Protection Diode in a DFN1006 Package.

FEATURES

- Transient protection for high-speed data lines
IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (Contact)
 $\pm 20\text{kV}$ (Air)
- Cable Discharge Event (CDE)
- Package optimized for high-speed lines
- Protects one data, control line
- Low capacitance: 0.25pF (Typical)
- Low leakage current
- Low clamping voltage



DFN1006 Package



ELECTRICAL SYMBOL

Device Marking:

Device Type	Marking	Shipping
ESD1501BU	15BU	10,000/Reel

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
P_{pp}	Peak pulse power	70	W
T_{stg}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_{opt}	Operating Temperature	-55 to +125	$^\circ\text{C}$
V_{ESD}	ESD per IEC 61000-4-2 (Contact) ESD per IEC 61000-4-2 (Air)	± 15 ± 20	kV

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V_{BR}	Reverse Breakdown Voltage	$I_T=1\text{mA}$			16	V
V_{RWM}	Reverse Working Voltage		15.0			V
I_R	Reverse Leakage Current	$V_{RWM}=15\text{V}$			500	μA
V_c	Clamping Voltage(IEC 61000-4-5)	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$			25	V
		$I_{PP} = 2\text{A}, t_p = 8/20\mu\text{s}$			35	V
C_J	Junction Capacitance	$V_R=0\text{V}, f= 1\text{MHz}$		0.25	0.40	pF

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ELECTRICAL CHARACTERISTICS CURVE

Fig 1 Power Derating Curve

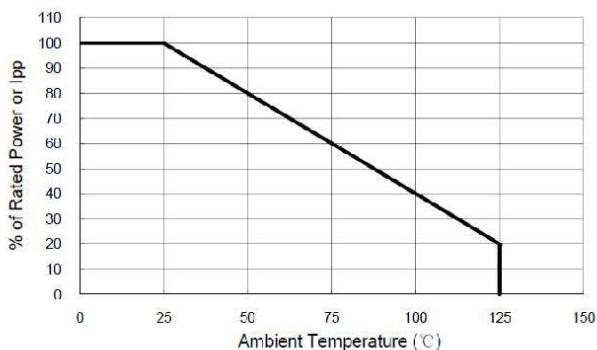


Fig 2 8/20μs Waveform per IEC61000-4-5

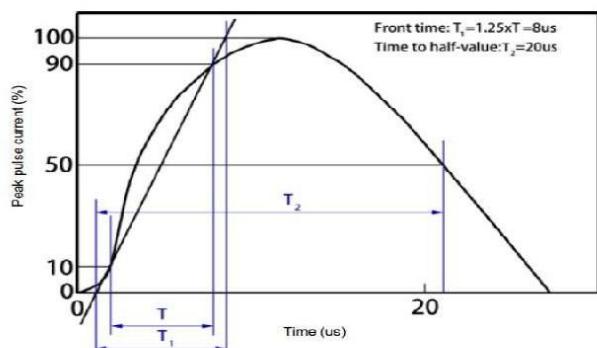


Fig 3 Clamping Voltage vs Peak Pulse Current

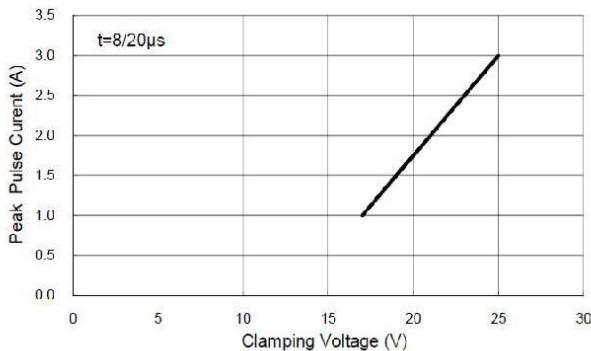


Fig 4 Voltage vs Capacitance

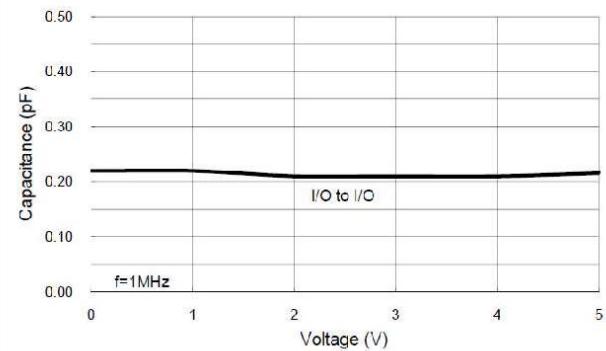


Fig 5 ESD Clamping of I/O to GND (+8kV Contact per IEC 61000-4-2)

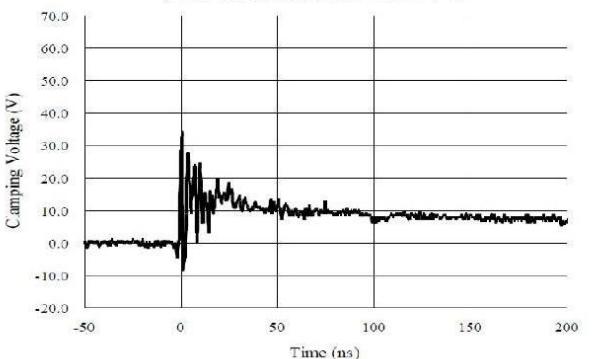
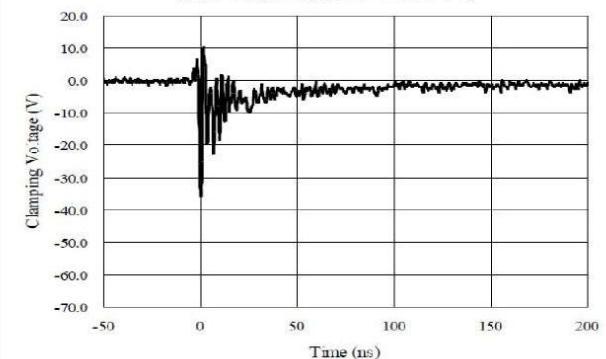
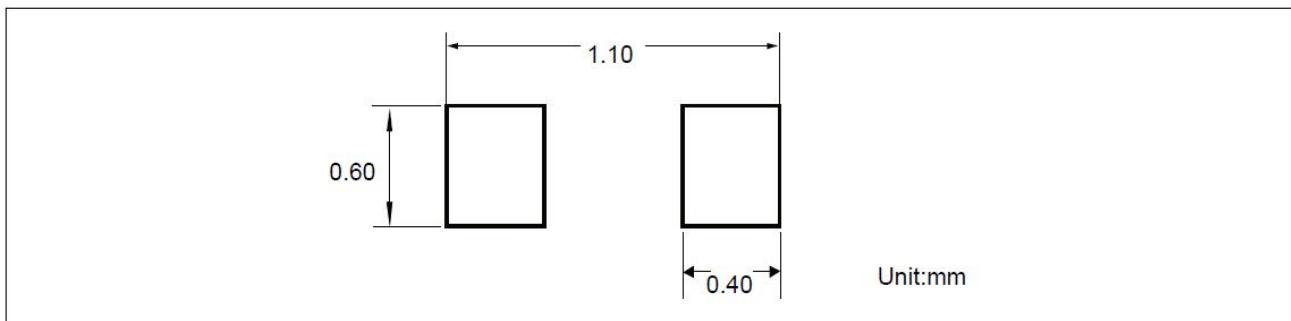
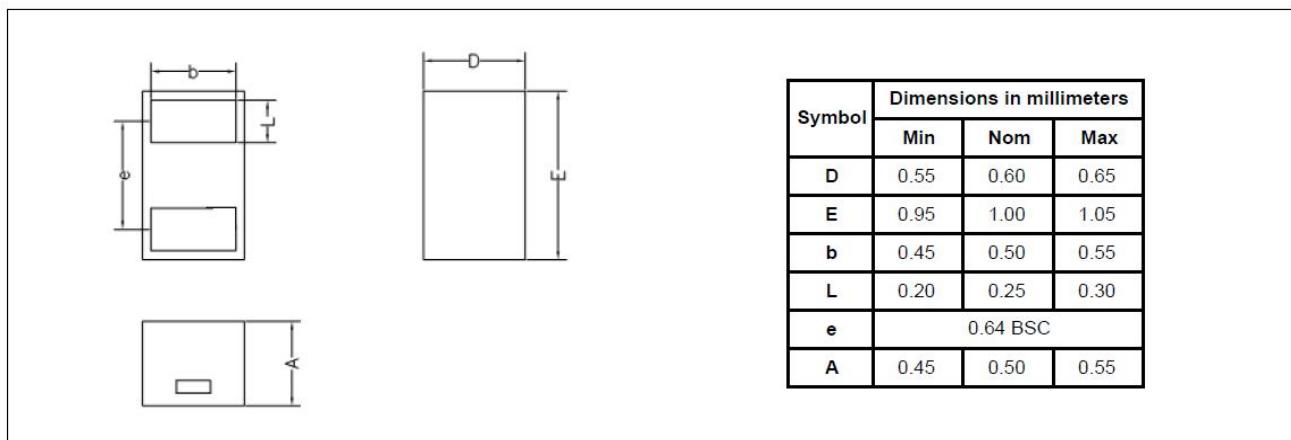


Fig 6 ESD Clamping of I/O to GND (-8kV Contact per IEC 61000-4-2)



ESD1501BU

DFN1006 Package Outline



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