

DESCRIPTION

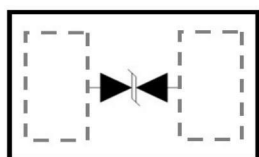
The KESD0301BU is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 0.5pF, KESD0301BU designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

Each KESD0301BU device can protect one high-speed data line. It offers system designers flexibility to protect single data line where space is a premium concern. The combined features of low capacitance, ultra-small size and high ESD robustness make KESD0301BU ideal for high-speed data port and high-frequency line applications, such as cellular phones and HD visual devices.

ORDERING INFORMATION

- ◇ Package: DFN1006
- ◇ Marking: 3BL or 3BU
- ◇ Material: Halogen free
- ◇ Packing: Tape & Reel
- ◇ Quantity per reel: 10,000pcs

PIN CONFIGURATION



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 (5/50 ns)
Cable Discharge Event (CDE)
- ◇ Package optimized for high-speed lines
- ◇ Ultra-small package (1.0mm×0.6mm×0.5mm)
- ◇ Protects one data, control line
- ◇ Low capacitance: 0.5pF (Typical)
- ◇ Low leakage current
- ◇ Low clamping voltage

MACHANICAL DATA

- ◇ DFN1006 package
- ◇ Packaging: Tape and Reel
- ◇ High temperature soldering guaranteed:
260°C/10s
- ◇ Reel size: 7 inch

APPLICATIONS

- ◇ Serial ATA
- ◇ Desktops, Servers and Notebooks
- ◇ Cellular Phones
- ◇ MDDI Ports
- ◇ USB Data Line Protection
- ◇ Display Ports
- ◇ Digital Visual Interfaces (DVI)

PACKAGE OUTLINE



ABSOLUTE MAXIMUM RATING

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air)	± 20	kV
	ESD per IEC 61000-4-2 (Contact)	± 20	
P_{PP}	Peak Pulse Power (8/20 μ s)	100	W
T_{OPT}	Operating Temperature	-55~125	°C
T_{STG}	Storage Temperature	-55~150	°C

ELECTRICAL CHARACTERISTICS (T_{amb}=25. °C)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				3.3	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1mA$	4.2			V
I_R	Reverse Leakage Current	$V_{RWM} = 3.3V$			100	nA
V_C	Clamping Voltage	$I_{PP} = 1A, t_p = 8/20\mu s$			12	V
		$I_{PP} = 4A, t_p = 8/20\mu s$			25	V
C_J	Junction Capacitance	$V_R = 0V, f = 1MHz$		0.5		pF

ELECTRICAL CHARACTERISTICS CURVE

Fig 1 Power Derating Curve

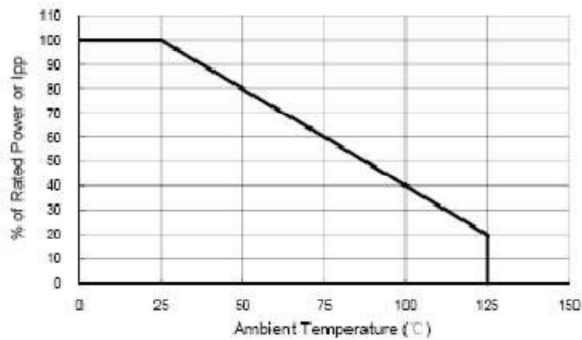


Fig 2 Clamping Voltage vs Peak Pulse Current

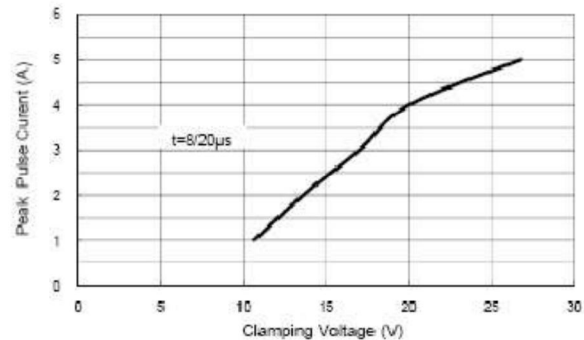


Fig 3 Voltage Sweeping

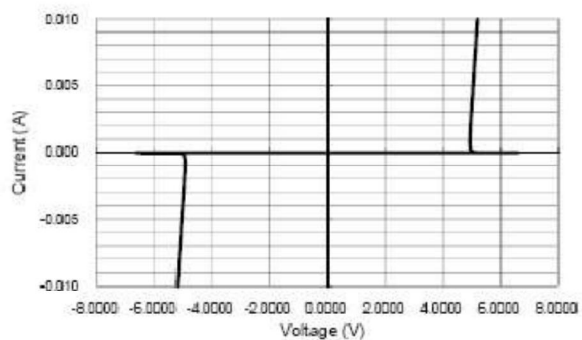


Fig 4 Voltage vs Capacitance

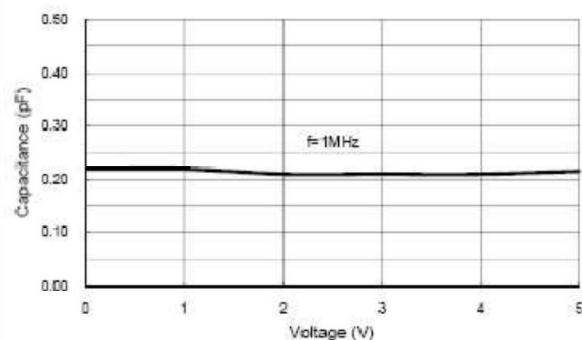


Fig 5 ESD Clamping
(+8kV Contact per IEC 61000-4-2)

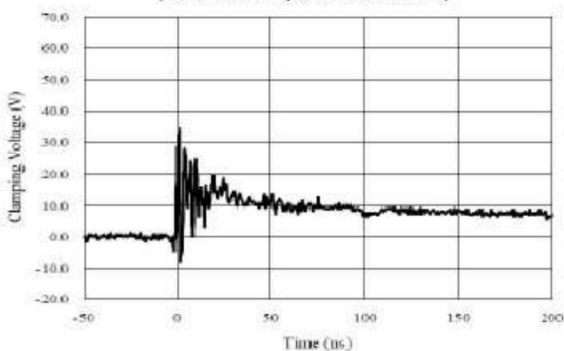
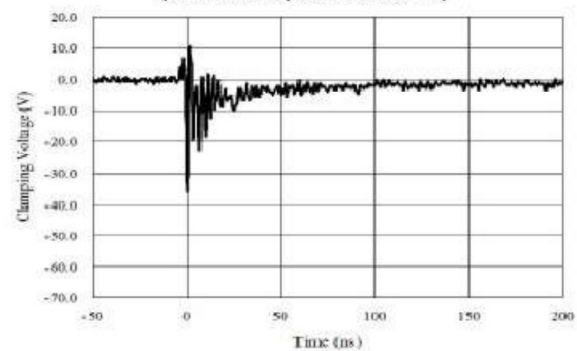
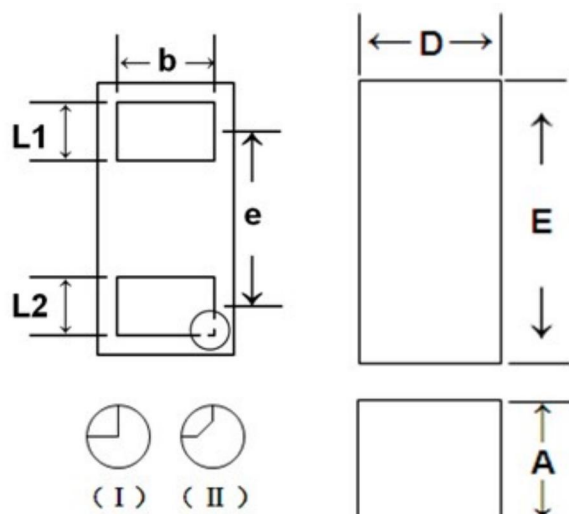


Fig 6 ESD Clamping
(-8kV Contact per IEC 61000-4-2)



DFN1006 PACKAGE OUTLINE DIMENSIONS



NOTE: ALL DIMENSIONS IN MM

	MIN	NOM	MAX
D	0.55	0.60	0.65
E	0.95	1.00	1.05
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
A	0.45	0.50	0.55
b	0.45	0.50	0.55
e		0.64BSC	

