

Capacitance ESD Protection Diode

DESCRIPTION

FTVESD05D6BU is a low-capacitance Transient Voltage Suppressor (TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 0.25pF, FTVESD05D6BU is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 ($\pm 25\text{kV}$ air, $\pm 20\text{kV}$ 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. FTVESD05D6BU uses ultra-small DFN0603 package. Each FTVESD05D6BU 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 FTVESD05D6BU ideal for high-speed data port and high-frequency line applications, such as cellular phones and HD visual devices.

FEATURES

- Transient protection for high-speed data lines
IEC 61000-4-2 (ESD) $\pm 25\text{kV}$ (Air)
 $\pm 20\text{kV}$ (Contact)
IEC 61000-4-4 (EFT) 40A (5/50 ns)
Cable Discharge Event (CDE)
- Package optimized for high-speed lines
- Ultra-small package (0.6mm \times 0.3mm \times 0.3mm)
- Protects one data, control line
- Low capacitance: 0.25pF (Typical)
- Low leakage current
- Low clamping voltage
- AEC-Q101 qualified

MACHANICAL DATA

- DFN0603 package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed: $260^\circ\text{C}/10\text{s}$
- Reel size: 7 inch

ORDERING INFORMATION

- Device: FTVESD05D6BU
- Package: DFN0603
- Marking: 5BU
- Material: Halogen free
- Packing: Tape & Reel
- Quantity per reel: 15,000pcs

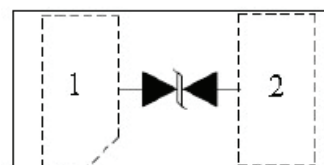
APPLICATIONS

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

PIN CONFIGURATION



CIRCUIT DIAGRAM





FTVESD05D6BU

Low Capacitance ESD Protection Diode

ABSOLUTE MAXIMUM RATING			
Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	± 20 ± 20	kV
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

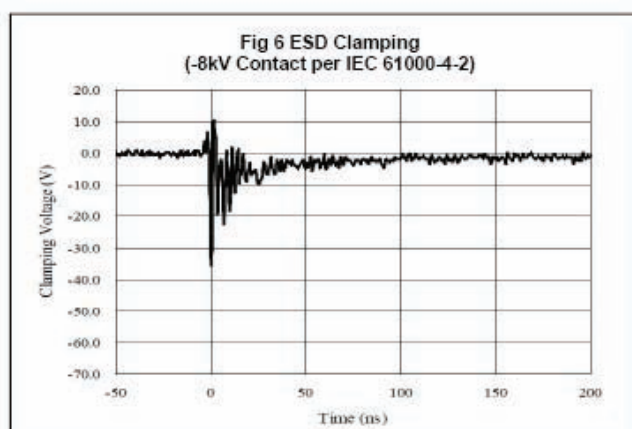
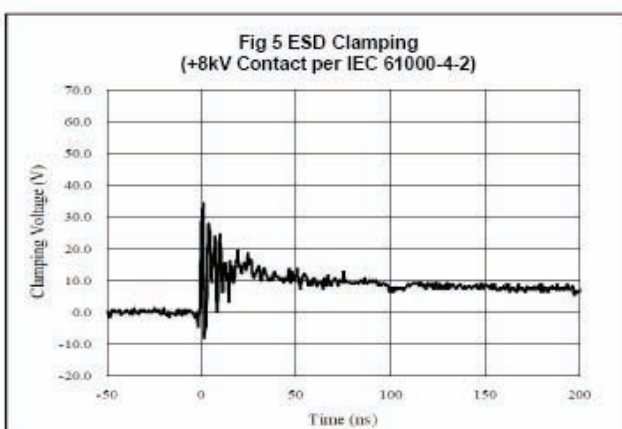
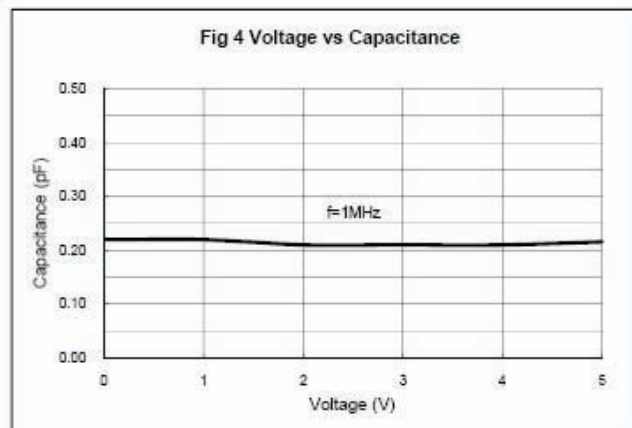
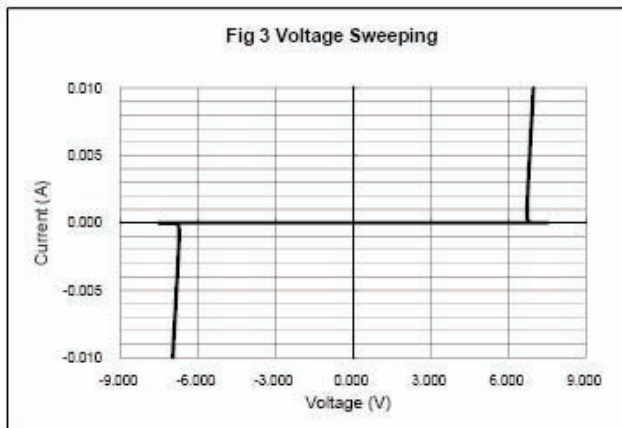
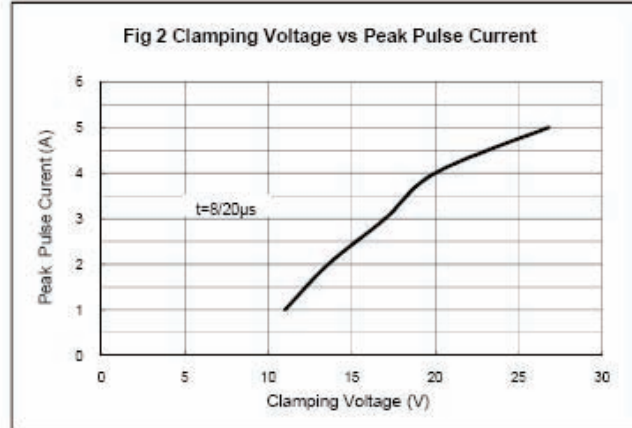
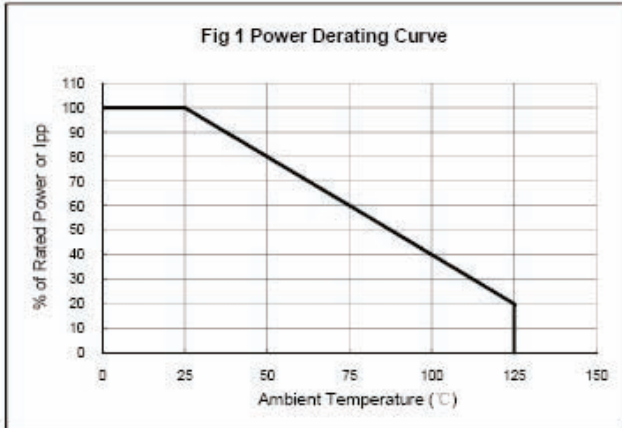
ELECTRICAL CHARACTERISTICS (Tamb=25°C)						
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	6.0			V
I_R	Reverse Leakage Current	$V_{RWM} = 5\text{V}$			100	nA
V_C	Clamping Voltage	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$			13	V
		$I_{PP} = 4\text{A}, t_p = 8/20\mu\text{s}$			23	V
C_J	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$		0.25		pF



FTVESD05D6BU

Ultra Low Capacitance ESD Protection Diode

ELECTRICAL CHARACTERISTICS CURVE

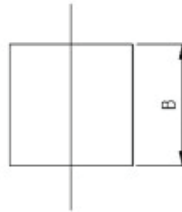
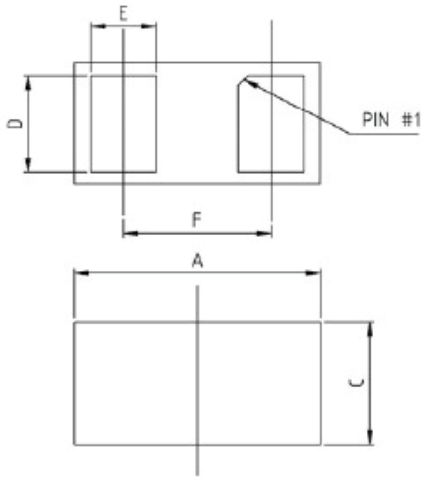




FTVESD05D6BU

Ultra Low Capacitance ESD Protection Diode

DFN0603 PACKAGE OUTLINE DIMENSIONS



Dimensions In
Millimeterer

Symbol	MIN	TYP	MAX
A	0.58	0.60	0.65
B	0.28	0.30	0.35
C	0.28	0.30	0.34
D	0.20	0.24	0.26
E	0.13	0.16	0.19
F	-	0.36	-