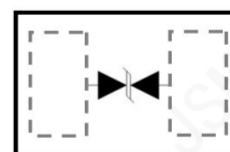
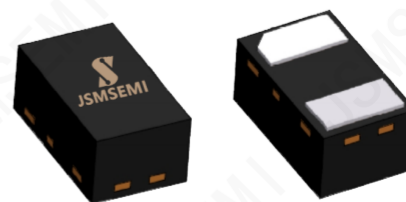


DESCRIPTION

ESD0301BL is a low-capacitance Transient Voltage Suppressor(TVS) designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. With typical capacitance of 0.25 pF, ESD0301BL is designed to protect parasitic sensitive system 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), IEC61000-4-4(electrical fast transient - EFT)(40A, 5/50 ns), very fast charged device model(CDM)ESD and cable discharge event(CDE), etc.ESD0301BL uses ultra-small DFN1006 package.Each ESD0301BL 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 ESD0301BL ideal for high-speed data port and high-frequency line applications.

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 $\times$ 0.6mm $\times$ 0.5mm)
- ◆ Protects one data, control line
- ◆ Low capacitance: 0.25pF (Typical)
- ◆ Low leakage current
- ◆ Low clamping voltage



APPLICATIONS

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

MECHANICAL DATA

- ◆ DFN1006 package
- ◆ Flammability Rating: UL 94V-0
- ◆ Packaging: Tape and Reel
- ◆ High temperature soldering guaranteed:
260 $^{\circ}\text{C}$ /10s
- ◆ Reel size: 7 inch

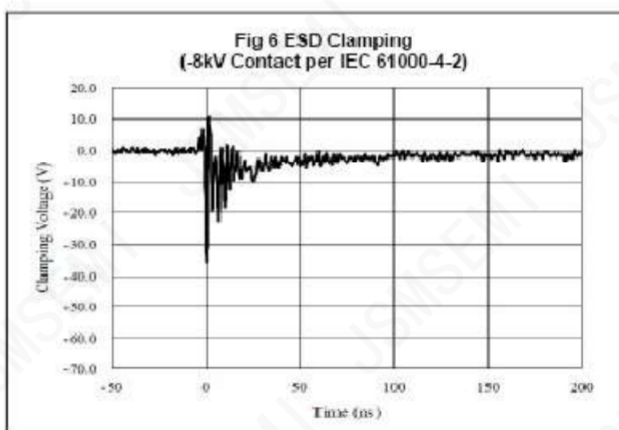
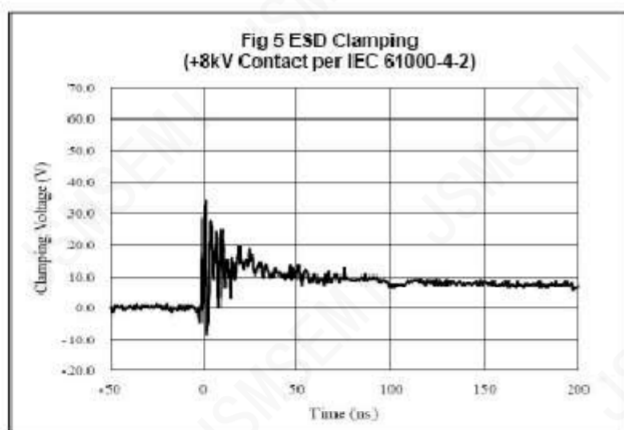
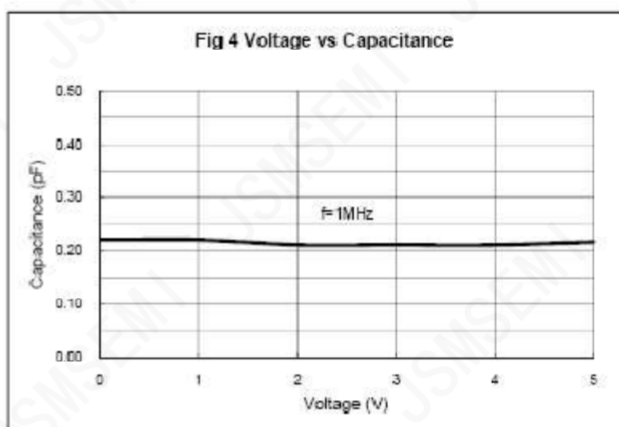
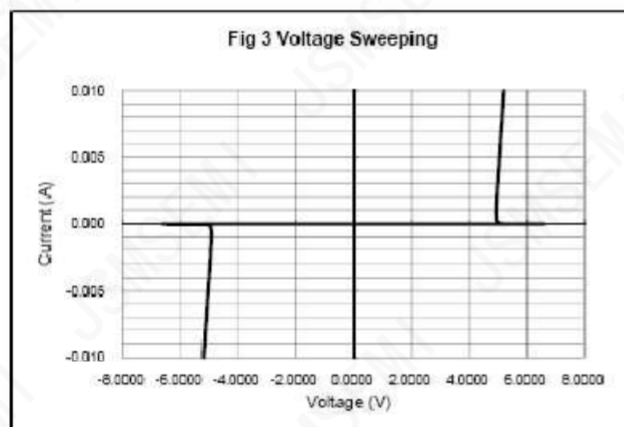
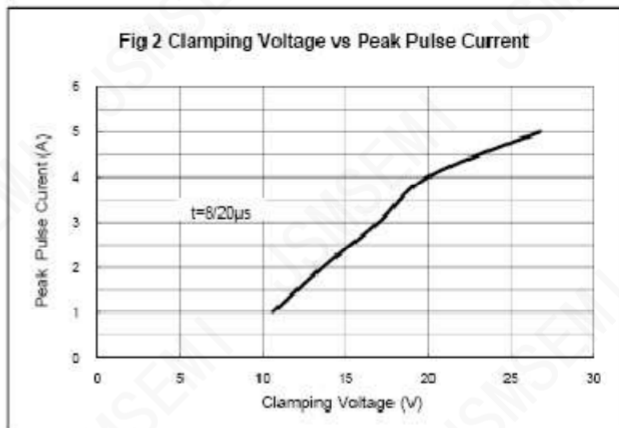
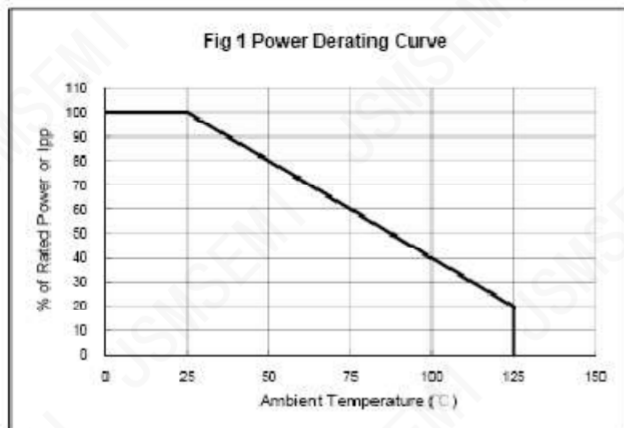
ABSOLUTE MAXIMUM RATING

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	$^{\circ}$ C
T_{STG}	Storage Temperature	-55~150	$^{\circ}$ C

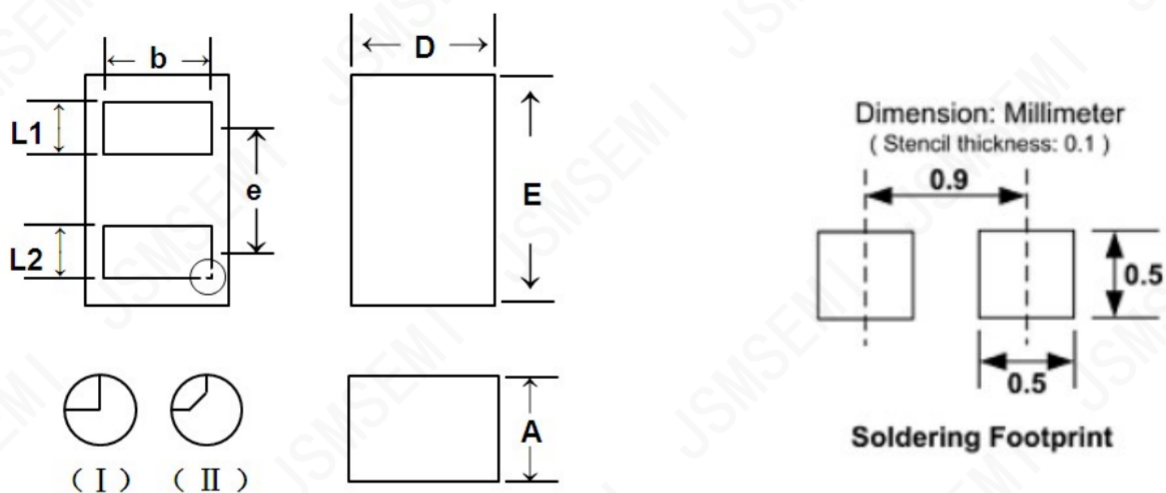
ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}$ C)

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	$V_R = 0V, f = 1MHz$		0.30	0.50	pF

ELECTRICAL CHARACTERISTICS CURVE



DFN1006 PACKAGE OUTLINE DIMENSIONS



	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	

NOTE: ALL DIMENSIONS IN MM

Revision History

Rev.	Change	Date
V1.0	Initial version	6/27/2021

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