

1. General Description

The MESD5V0SF11B Series is designed to protect voltage sensitive components from damage or latch-up due to ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD for board level. Because of its small size and bi-directional design, it is ideal for use in cellular phones, MP3 players, and portable applications that require audio line protection.



DFN1006-2L



Circuit Diagram

2. Specification Features

- Small Body Outline Dimensions: nom 0.039" x 0.024" (1.0x0.6 mm)
- Low Body Height: nom 0.019" (0.5 mm)
- Low Clamping Voltage
- Reverse Working (Stand-off) Voltage: 5.0 V
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- This is a Pb-Free Device

3. Application

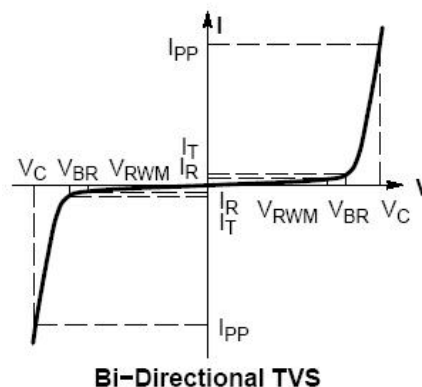
- Protection of common interface such as key interface.
- Cellular handsets and accessories
- Portable electronics
- Communication systems
- Computers and peripherals

4. Maximum Ratings

Rating		Symbol	Value	Unit
IEC 61000-4-2 (ESD)	Contact		±20	kV
	Air		±20	kV
ESD Voltage	Per Human Body Model		16	kV
	Per Machine Model		300	V
Peak Power Per 8 x 20µs Waveform		P _{PK}	60	W
Total Power Dissipation on FR-5 ^① Board @ T _A = 25°C		P _D	150	mW
Junction and Storage Temperature Range		T _J , T _{stg}	-55 to +150	°C
Lead Solder Temperature - Maximum (10 Second Duration)		TL	260	°C

5. Characteristics

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
P_{PK}	Peak Power Dissipation
C	Max.Capacitance @ $V_R = 0$ and freq.=1 MHz



Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T=1mA$	5.6		9	V
Reverse Leakage Current	I_R	$V_{RWM}=5V$		0.05	1	μA
Clamping Voltage	V_C	$I_{PP}=6A$, $t_p=8/20\mu s$			10	V
Junction Capacitance	C_J	$V_{DC}=0V$, $f=1MHz$			16	pF

Note: Surge current wave form per figure 3.

6. Typical Characteristics

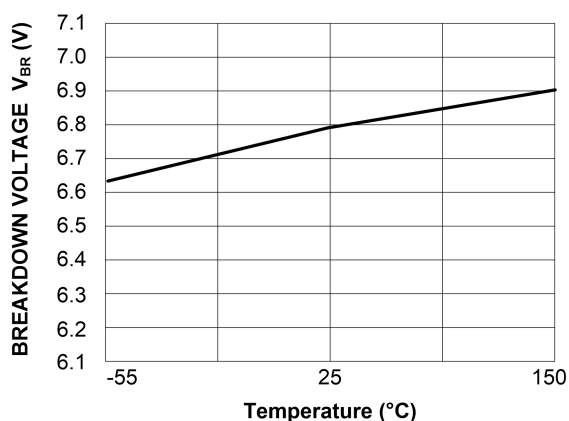


Figure 1: Typical Breakdown Voltage versus Temperature

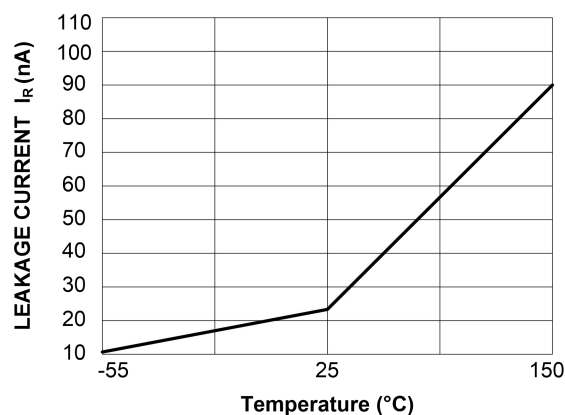


Figure 2: Typical Leakage Current versus Temperature

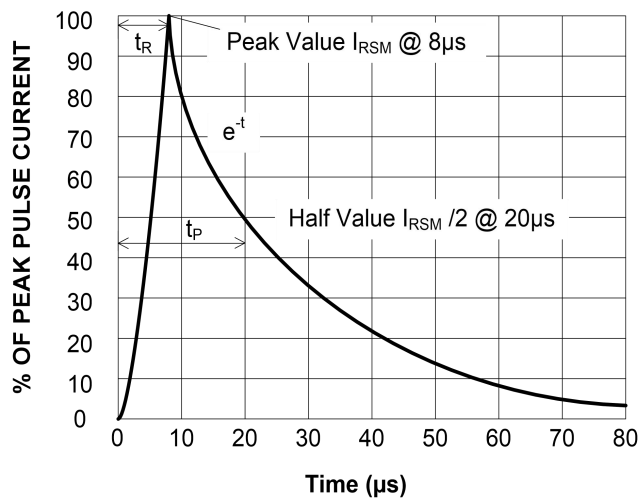


Figure 3: 8/20µs Pulse Wave Form

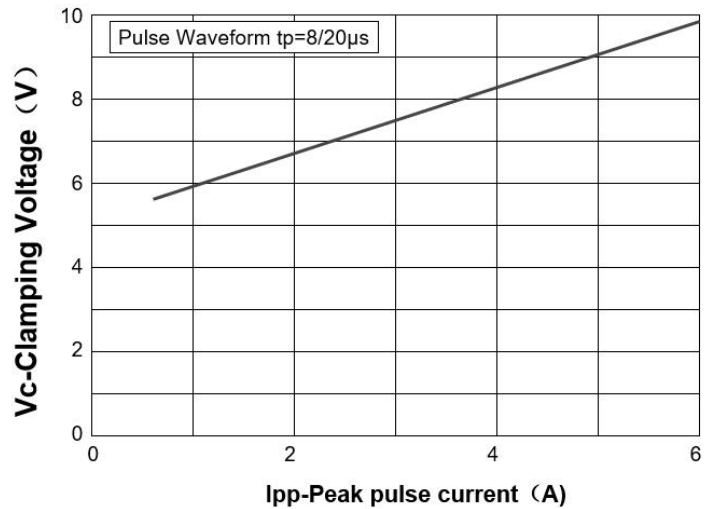
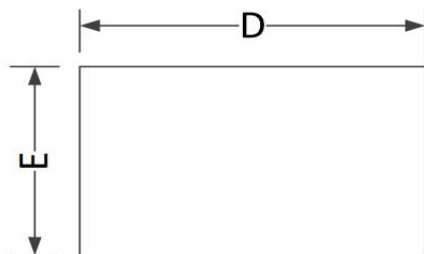


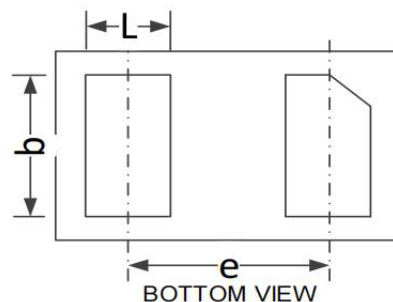
Figure 4: Clamping voltage vs. Peak pulse current

7. Package Outline Dimensions

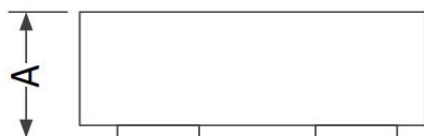
Marking	Device	Package	Reel size	Tape width	Quantity
PB	MESD5V0SF11B	DFN1006-2L	7inch/13inch	8mm	12000/40000



TOP VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSION (MM)			
PKG	DFN1006		
REF.	MIN.	NOM.	MAX.
A	0.40		0.55
b	0.45	0.50	0.55
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
L	0.20	0.25	0.30

8. RESTRICTIONS ON PRODUCT USE

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