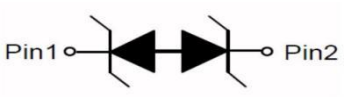
1. General Description

The MESD5V0UF11B 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（Bottom View）



Circuit Diagram

2. Specification Features

- Mall 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

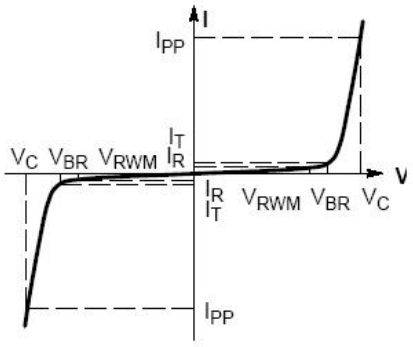
- USB 3.0 and Universal Flash Storage (UFS) data lines
- Cellular handsets and accessories
- Portable electronics
- Communication systems
- Computers and peripherals

4. Maximum Ratings

Rating	Symbol	Value	Unit
IEC 61000-4-2 (ESD) Contact		±15	kV
ESD Voltage Per Human Body Model Per Machine Model		16 400	kV V
Peak Power Per 8 x 20μs Waveform	P_{PK}	100	W
Total Power Dissipation on FR-5① Board @ TA = 25°C	P_D	100	mW
Junction and Storage Temperature Range	T_J, Tstg	-55 to +150	°C
Lead Solder Temperature - Maximum (10 Second Duration)	T_L	260	°C

5. Characteristics

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



Bi-Directional TVS

Mark	V_{RWM}	I_R (μA) @ V_{RWM}		V_{BR} (V) @ I_T			I_T	Max. V_C (V)	C(Pf)	
	(V)	Typ.	Max.	Min.	Type	Max.	(mA)	@ I_{PP}[2]=4A	Type	Max
M8	5	0.05	1	6.0	8.3	9	1	25	0.4	0.55

Note: Surge current wave form per figure 3.

6. Typical Characteristics

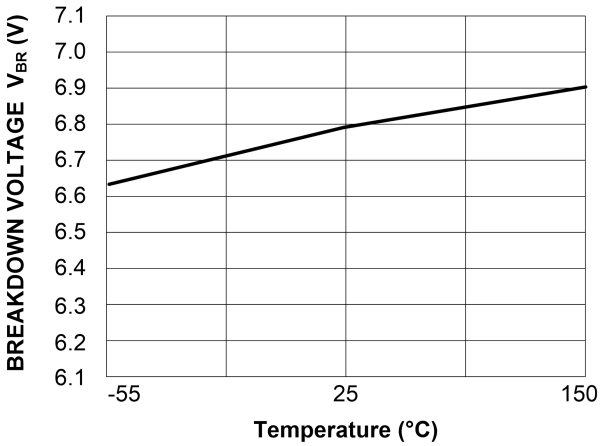


Figure 1: Typical Breakdown Voltage versus Temperature

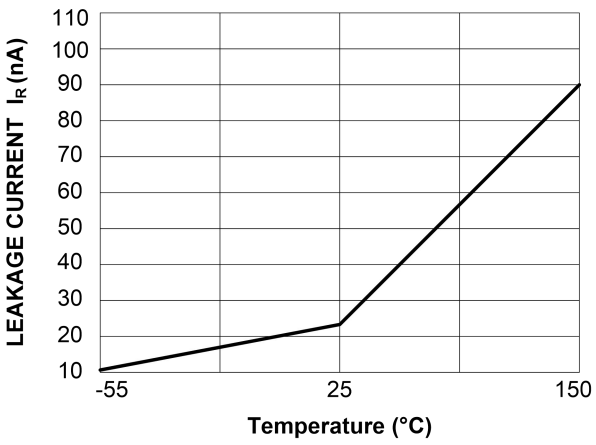


Figure 2: Typical Leakage Current versus Temperature

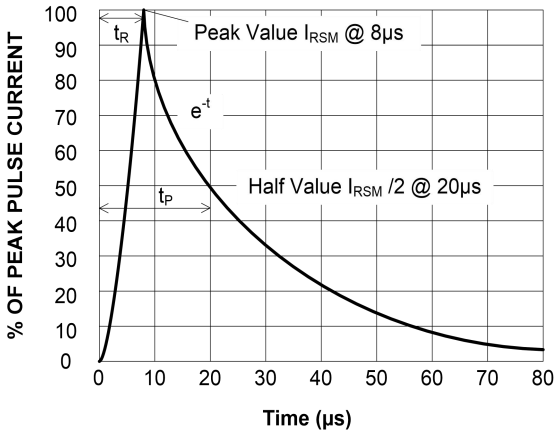
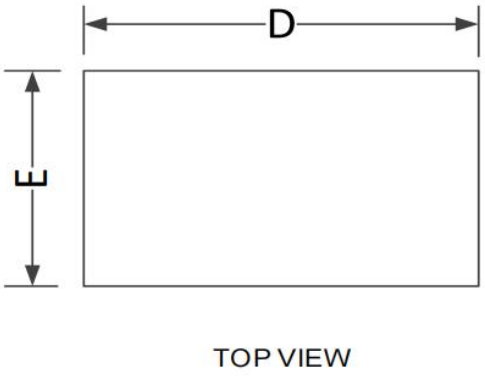


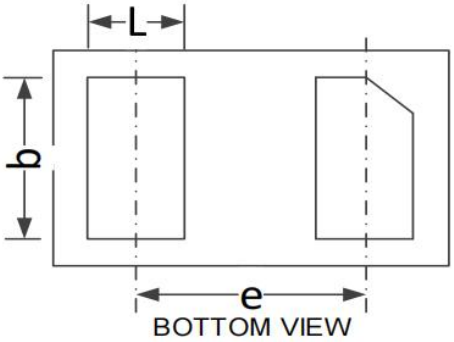
Figure 3: 8/20μs Pulse Wave Form

7. Package Outline Dimensions

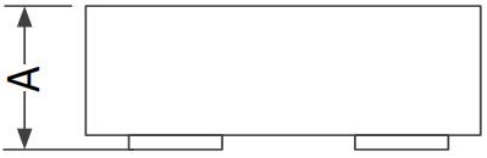
Device Marking	Device	Package	Reel size	Tape width	Quantity
M8	MESD5V0UF11B	DFN1006-2L	7inch	8mm	12K



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. RICTIONS ON PRODUCT USE

- The information contained herein is subject to change without notice.
- Miller semiconductor Co., Ltd. exerts the greatest possible effort to ensure high quality and reliability. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing Miller semiconductor products, to comply with the standards of safety in making a safe design for the entire system, including redundancy, fire-prevention measures, and malfunction prevention, to prevent any accidents, fires, or community damage that may ensue. In developing your designs, please ensure that Miller semiconductor products are used within specified operating ranges as set forth in the most recent Miller semiconductor products specifications.
- The Miller semiconductor products listed in this document are intended for usage in general electronics applications (computer, personal equipment, office equipment, measuring equipment, industrial robotics, domestic appliances, etc.). These Miller semiconductor products are neither intended nor warranted for usage in equipment that requires extraordinarily high quality and/or reliability or a malfunction or failure of which may cause loss of human life or bodily injury (“Unintended Usage”). Unintended Usage include atomic energy control instruments, airplane or spaceship instruments, transportation instruments, traffic signal instruments, combustion control instruments, medical instruments, all types of safety devices, etc.. Unintended Usage of Miller semiconductor products listed in this document shall be made at the customer’s own risk.