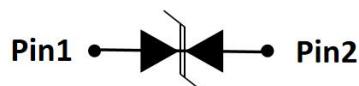


1. General Description

The MESD5V0SF06B 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.



Circuit Diagram



DFN0603-2L

2. Specification Features

- Small Body Outline Dimensions: nom 0.024" x 0.012" (0.6x0.3 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
- IEC 61000-4-5 (Lightning) 6A (8/20us)
- This is a Pb-Free Device

3. Application

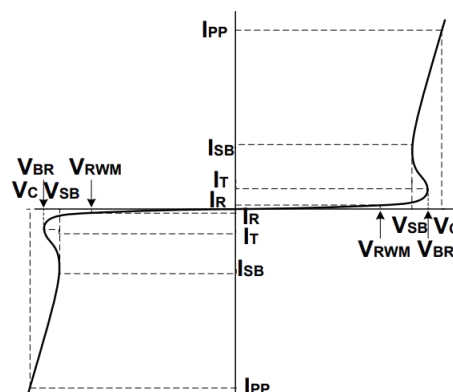
- Mic and Audio data Port protect
- Cellular handsets and accessories
- Portable electronics
- Communication systems
- Computers and peripherals

4. Maximum Ratings

Rating		Symbol	Value	Unit
IEC 61000-4-2 (ESD)	Contact		±15	kV
ESD Voltage	Per Human Body Model		16	kV
	Per Machine Model		400	kV
Peak Power Per 8 x 20μs Waveform		P _{PK}	60	W
Total Power Dissipation on FR-5 ^① Board @ TA = 25°C		P _D	80	mW
Junction and Storage Temperature Range		T _J , T _{stg}	-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 @ 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	Capacitance @ $V_R = 0$ and freq.=1 MHz



Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	$I_T=1mA$	5.5		8.5	V
Reverse Leakage Current	I_R	$V_{RWM}=5.0V$		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

Note1: Surge current wave form per figure 3.

6. Typical Characteristics

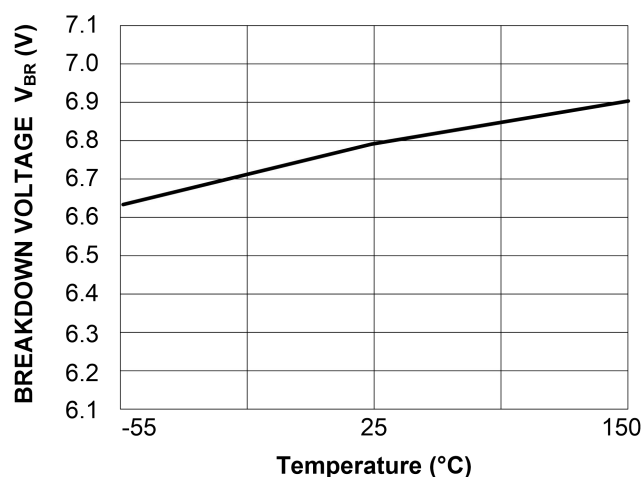


Figure 1: Typical Breakdown Voltage versus Temperature

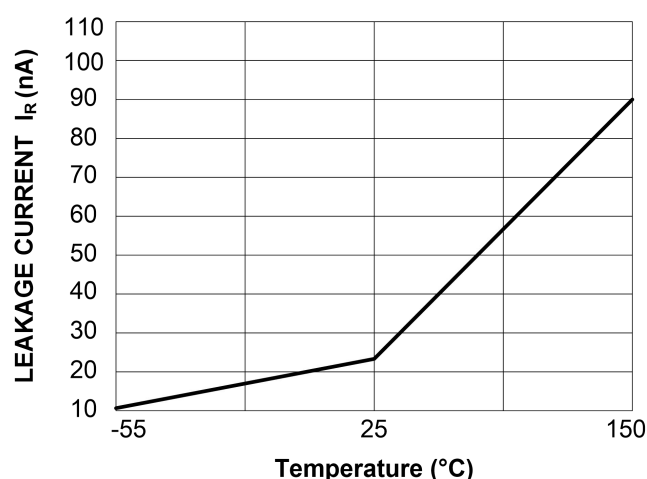


Figure 2: Typical Leakage Current versus Temperature

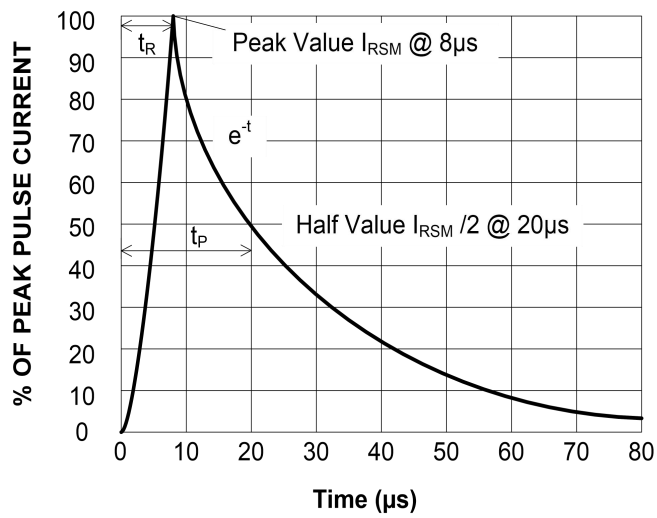


Figure 3: 8/20 μs Pulse Wave Form

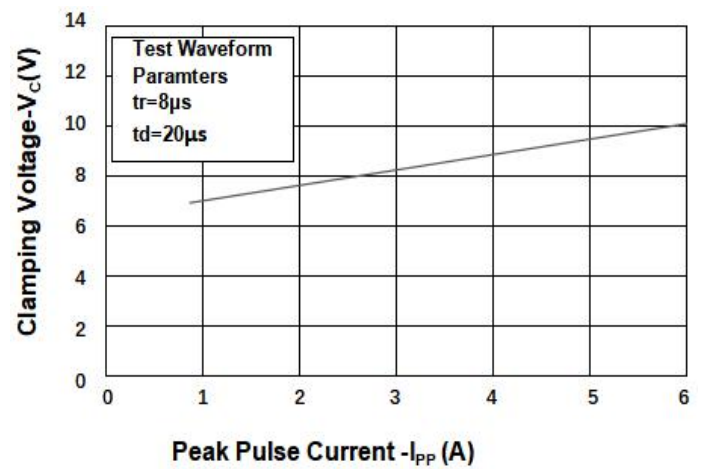
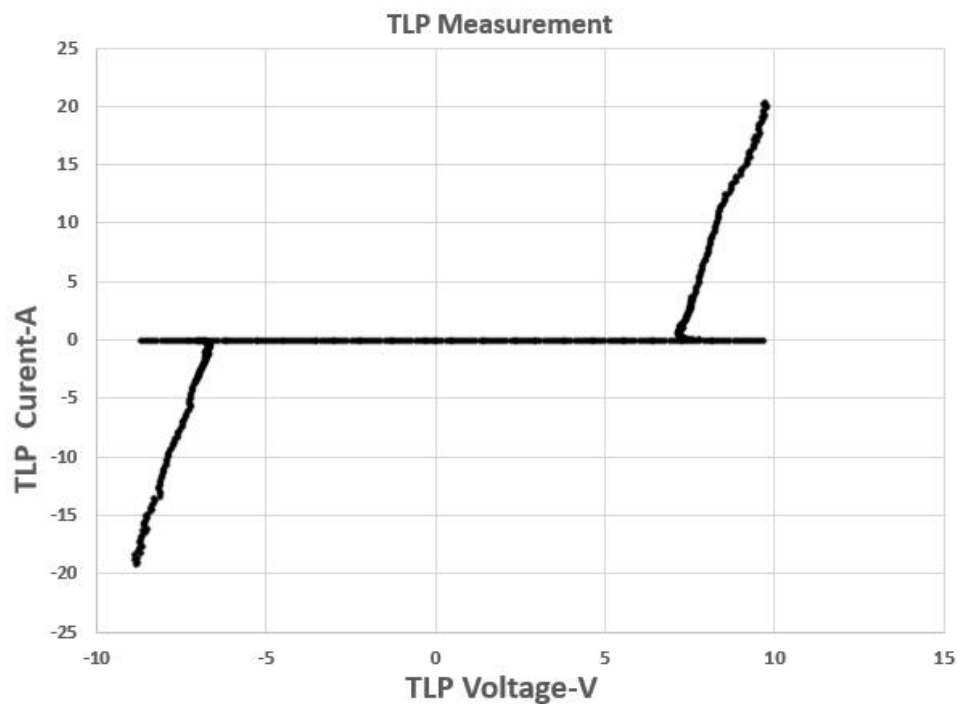
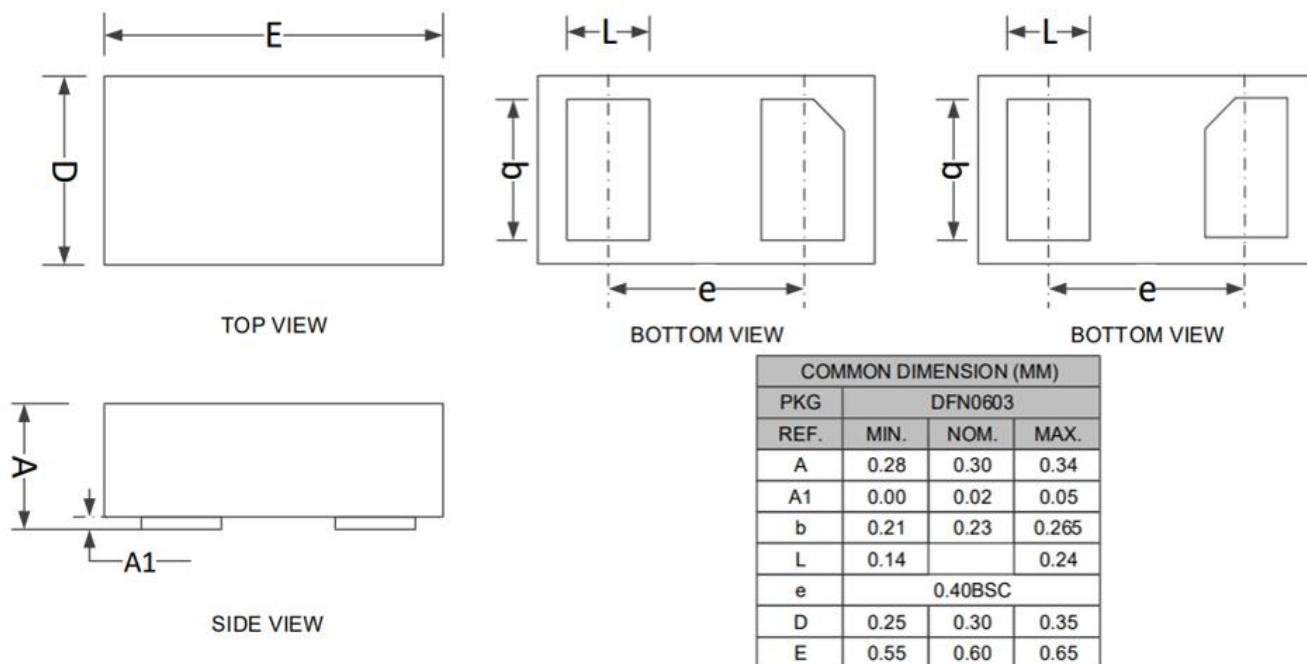


Figure 4: Clamping Voltage VS. I_{PP}



7. Package Outline Dimensions

Marking	Device	Package	Reel size	Tape width	Quantity
C5	MESD5V0SF06B	DFN0603-2L	7inch	8mm	15000



8. RESTRICTIONS 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.