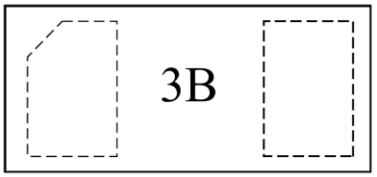
MESD3V3L1P2R0

Deep Snap Back ESD

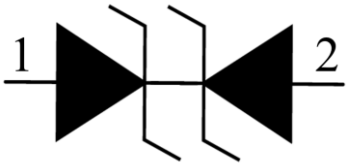
Features

- ◆ IEC 61000-4-2 Level 4 ESD Protection
  - ±15kV Air Discharge
  - ±15kV Contact Discharge
- ◆ Peak Pulse Power Capability: 50W
- ◆ Peak Pulse Current Capability: 6.5A
- ◆ Working Voltage: 3.3V
- ◆ Low Clamping Voltage: 5.5V
- ◆ Low Junction Capacitance: 0.14pF
- ◆ Protecting One Bi-directional Line

Simplified Outline



Chip Block Diagram



Applications

- ◆ TVs and Monitors
- ◆ HDMI and USB 3.2
- ◆ High-speed Interfaces
- ◆ Cellular Handsets and Accessories
- ◆ Digital Cameras, Portable Electronics and Notebooks

Ordering Information

Part Number	Marking	Package	Reel	Inner Box	Outer Carton
MESD3V3L1P2R0	3B	DFN0603-2L	10000 Pcs	10 Reels	4 Boxes

Absolute Maximum Ratings T_A = 25°C Unless Otherwise Noted

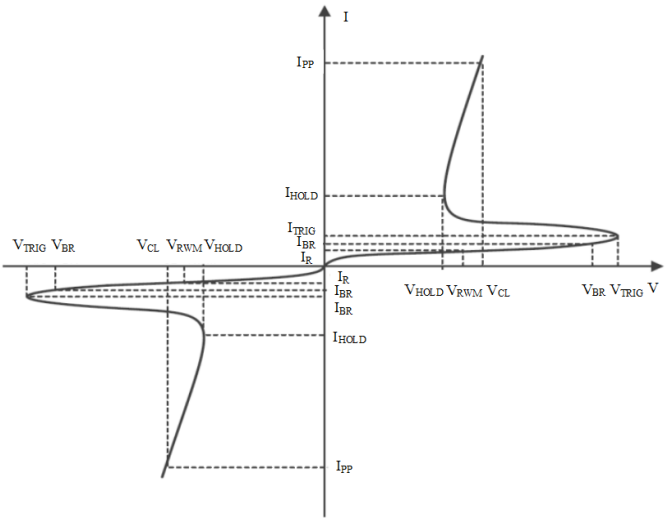
Symbol	Parameter		Min.	Max.	Unit
P_{pk}	Peak Pulse Power	IEC 61000-4-5; t_p = 8/20μs	-	50	W
I_{PP}	Peak Pulse Current	IEC 61000-4-5; t_p = 8/20μs	-	6.5	A
V_{ESD}	ESD	IEC 61000-4-2 Air Discharge	-	±15	kV
		IEC 61000-4-2 Contact Discharge	-	±15	
T_J	Junction Temperature		-	150	°C
T_L	Lead Temperature		-	260	
T_{OP}	Operating Temperature		- 50	125	
T_{STG}	Storage Temperature		- 55	150	

Electrical Characteristics T_A = 25°C Unless Otherwise Noted

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_{RWM}	Reverse Stand-off Voltage	-	-	3.3	5.0	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA	6.0	8.1	-	
V_{CL}	Clamping Voltage	I_{PP} = 1.0A; t_p = 8/20μs	-	2.5	-	
		I_{PP} = 6.5A; t_p = 8/20μs	-	5.5	-	
I_R	Reverse Leakage Current	V_{RWM} = 3.3V	-	-	100	nA
R_{DYN}	Dynamic Resistance	-	-	400	-	mΩ
C_J	Junction Capacitance	V_R = 0V; f = 1MHz	-	0.14	0.20	pF

Definitions of Electrical Characteristics

Symbol	Parameter
V_{RWM}	Reverse Stand-off Voltage
V_{BR}	Reverse Breakdown Voltage
V_{CL}	Clamping Voltage
V_{TRIG}	Reverse Trigger Voltage
V_{HOLD}	Reverse Holding Voltage
I_R	Reverse Leakage Current
I_{BR}	Reverse Breakdown Current
I_{TRIG}	Reverse Trigger Current
I_{HOLD}	Reverse Holding Current
I_{PP}	Peak Pulse Current



■ Characteristic Curve

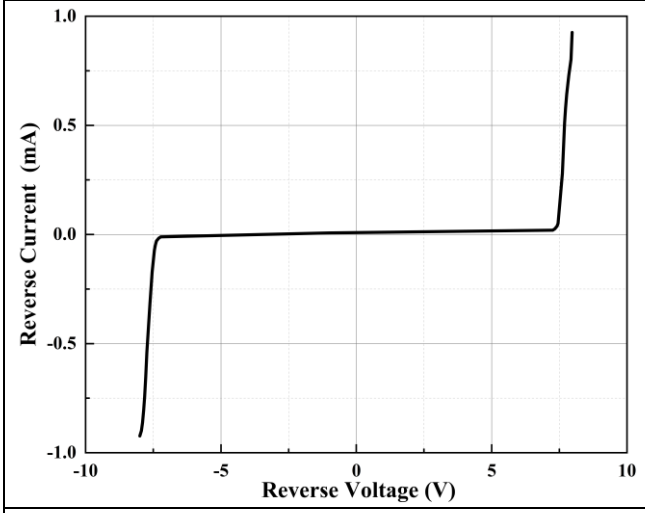


Figure 1. Reverse Current vs. Reverse Voltage

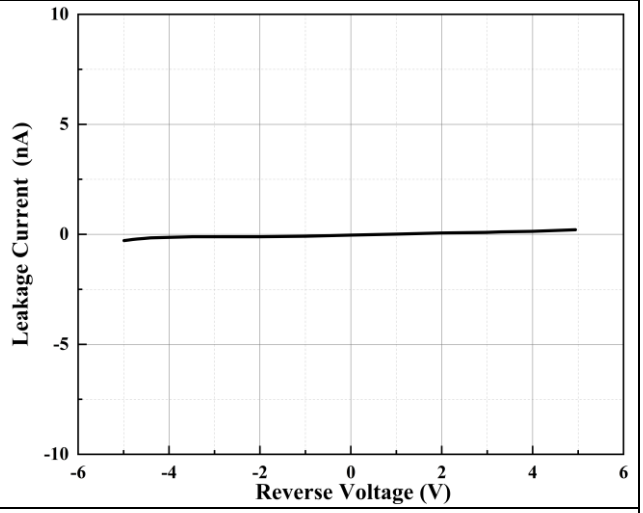


Figure 2. Leakage Current vs. Reverse Voltage

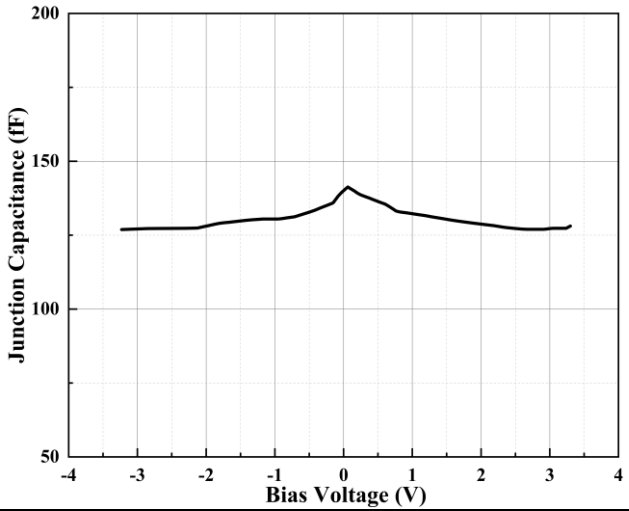


Figure 3. Junction Capacitance vs. Bias Voltage

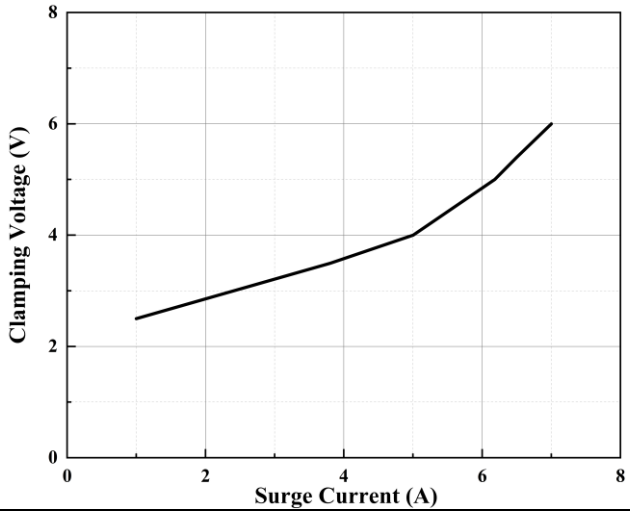


Figure 4. Clamping Voltage vs. Surge Current

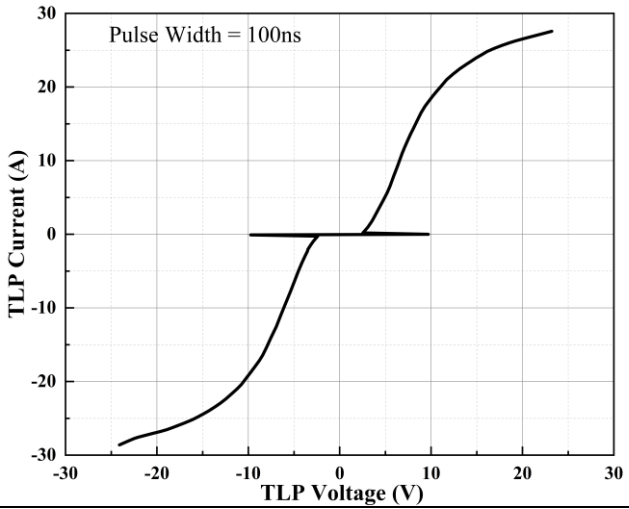


Figure 5. TLP Current vs. TLP Voltage

■ Measurement Wave According to IEC Standard

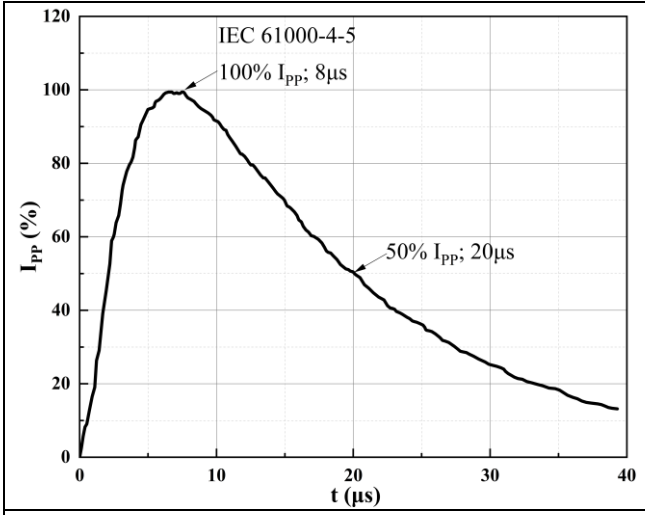


Figure 6. 8/20μs Pulse Waveform

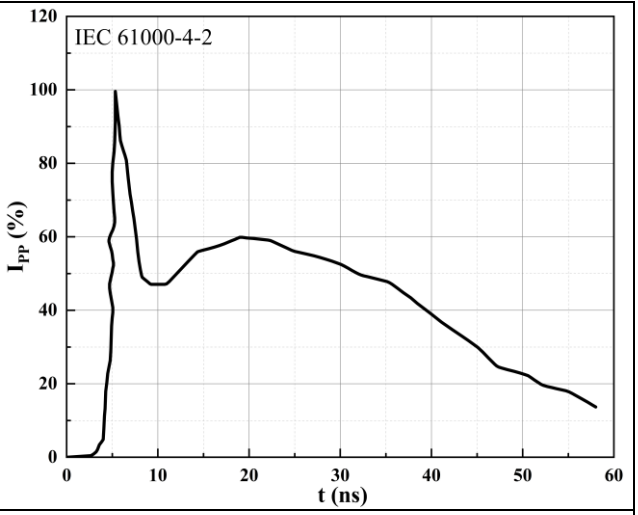
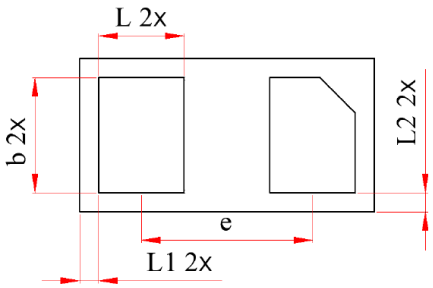


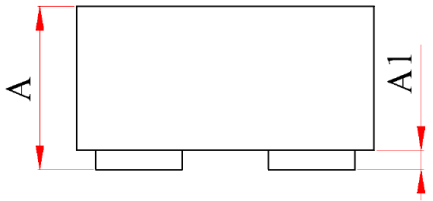
Figure 7. ESD Pulse Waveform

■ Package Information

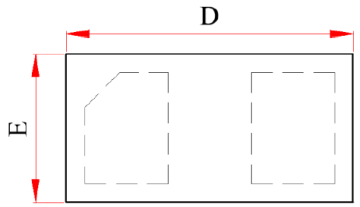
DFN0603-2L



Bottom View

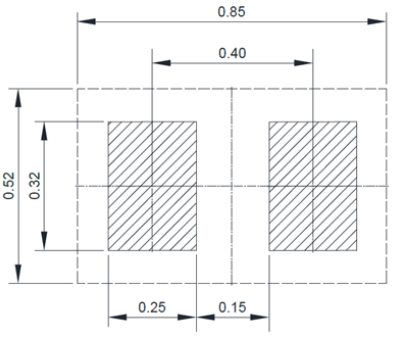


Side View



Top View

Symbol	Dimension In Millimeters			Dimension In Inches		
	Normal	Min	Max	Normal	Min	Max
A	--	0.280	0.340	--	0.011	0.013
A1	--	--	0.050	--	--	0.002
D	0.620	0.590	0.640	0.024	0.023	0.025
E	0.320	0.290	0.340	0.013	0.011	0.013
b	0.240	0.215	0.265	0.009	0.008	0.010
L	0.180	0.155	0.205	0.007	0.006	0.008
L1	0.040 REF			0.002 REF		
L2	0.040 REF			0.002 REF		
e	0.360 BSC			0.014 BSC		

■ Recommended Soldering Footprint

Unit:mm