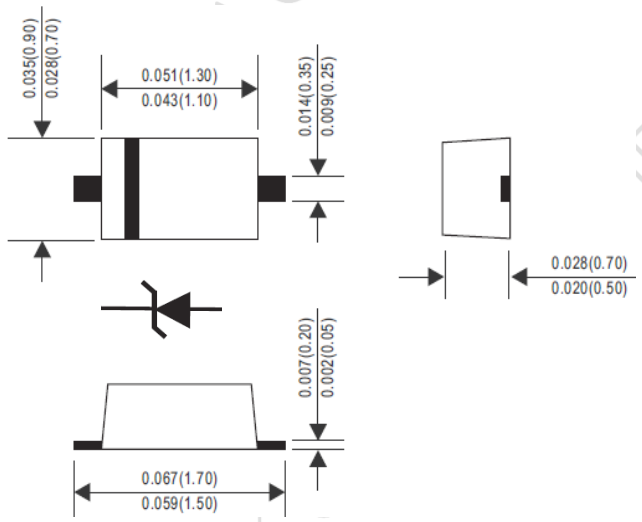
SMD ULTRA LOW CAPACITANCE UNI-DIRECTIONAL TVS FOR ESD PROTECTION DIODE, 5V



PRODUCT FEATURES

1. FLAMMABILITY CLASSIFICATION 94V-0
2. RESPONSE TIME <1ns TYP.
3. ULTRA LOW CAPACITANCE, 0.5pF TYP.
4. IEC COMPATIBILITY:
   IEC61000-4-2 (ESD) ±15KV (AIR), ±10KV (CONTACT)
   IEC61000-4-4 (EFT) 80A (5/50nS)
   IEC61000-4-5 (LIGHTNING) >1A (8/20μS)
5. LOW LEAKAGE CURRENT
6. CASE: TRANSFER MOLDED, SOD-523FL
7. DIMENSIONS IN INCHES AND (MILLIMETERS)
8. LEADS: SOLDERABILITY PER MIL-STD-750 METHOD 2026
9. WEIGHT: 0.002 GRAMS
10. RoHS COMPLIANT, ADD SUFFIX “H” FOR HALOGEN FREE
    i.e. ESD5L5.0-H: RoHS COMPLIANT/HALOGEN FREE

ELECTRICAL CHARACTERISTICS

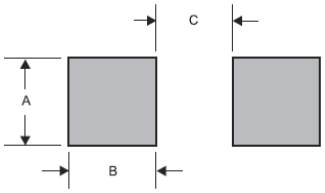
MAXIMUM RATINGS (T_A =25°C UNLESS OTHERWISE NOTED) AND ELECTRICAL CHARACTERISTICS

RATING	SYMBOL		UNITS
TOTAL POWER DISSIPATION, NOTE 1	P_D	0.2	W
TYPICAL THERMAL RESISTANCE	$R_{\theta JA}$	635	°C/W
	$R_{\theta JC}$	350	°C/W
STORAGE TEMPERATURE RANGE	T_{STG}	- 55 TO +150	°C
OPERATING JUNCTION TEMPERATURE RANGE	T_J	- 55 TO +125	°C

PART NUMBER	Max. V_{RWM} (V)	Max I_R @V_{RWM} (μA)	Min V_{BR} @ I_T=1mA (A)	Max V_C @ I_{PP}=1A (V)	Max I_{PP} (A)	MAX P_{PK} (W) (NOTE 2)	MAX C_J (pF)	MARKING
ESD5L5.0	5.0	1	5.4	9.8	1	40	0.9	5L

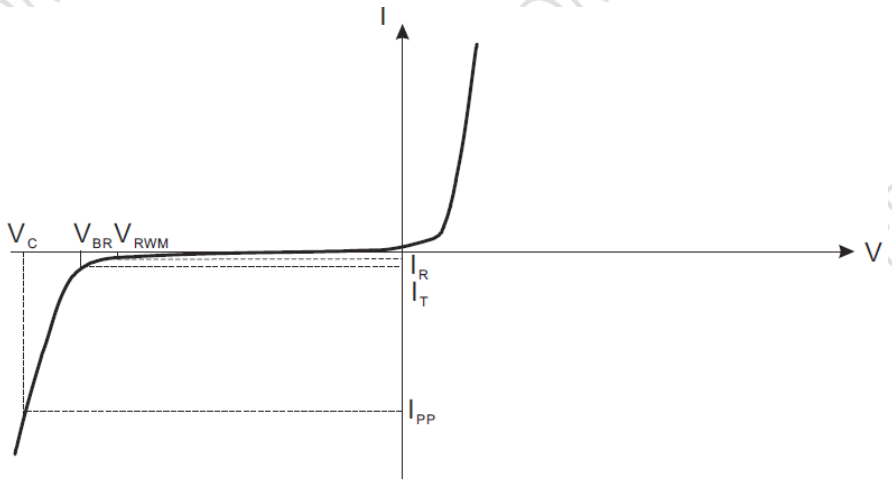
NOTE：1. ON 1”x0.75”x0.62” FR-5 PCB
2. SURGE CURRENT WAVEFORM PER FIG 5.
3. UNLESS SPECIFIED OTHERWISE, THE ELECTRICAL TEST IS PERFORMED AT T_A=25°C, V_F=1V@I_F=10Ma
4. SEE FIGURE 3 AND 4 FOR TEST SETUP

LAYOUT RECOMMENDATION



PACKAGE	A	B	C
SOD-523FL	0.032 (0.80)	0.024 (0.60)	0.044 (1.10)

RATINGS AND CHARACTERISTIC CURVES



Uni-Directional TVS

V_C : Clamping Voltage @ I_{PP}
I_{PP} : Maximum Reverse Peak Pulse Current
V_{RWM} : Maximum Working Peak Reverse voltage
I_R : Maximum Reverse Leakage Current @V_{RWM}
V_{BR} : Breakdown voltage @I_T
I_T : Test Current
P_{PP} : Peak Pulse Power
C_J : Max. Capacitance @V_R = 0V and f = 1MHz

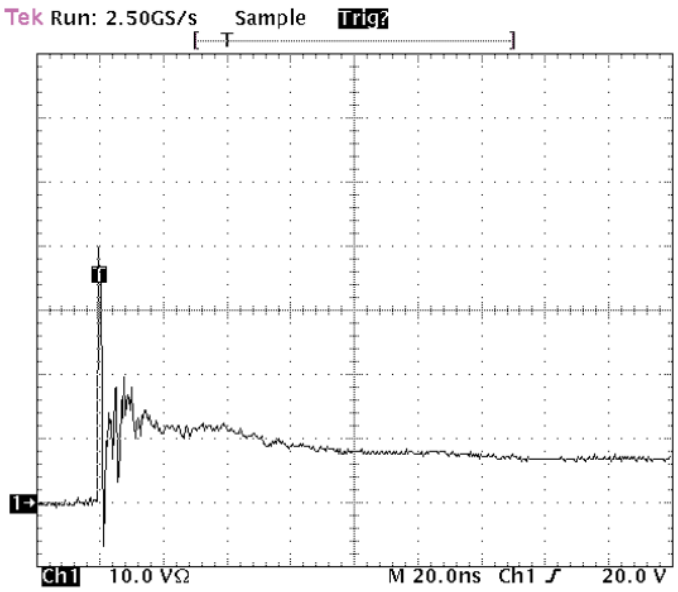


Figure 1. ESD clamping voltage screenshot
Positive 8 kV contact per IEC 61000−4−2

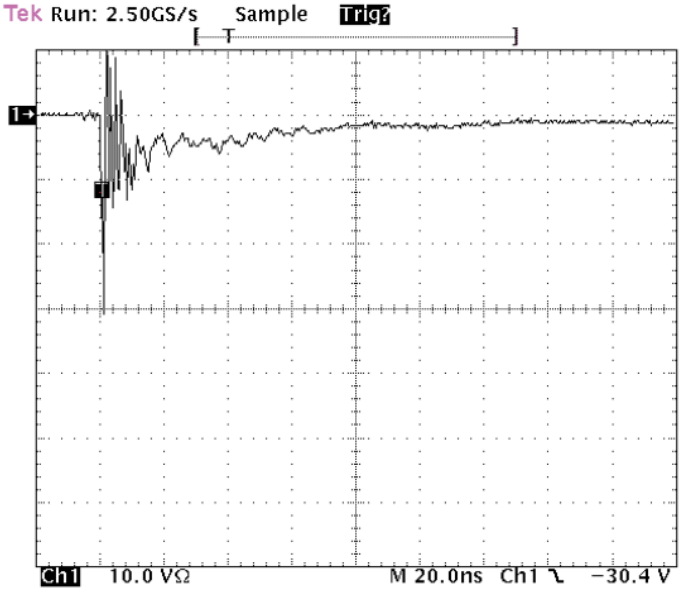


Figure 2. ESD clamping voltage screenshot
Negative 8 kV contact per IEC 61000−4−2

IEC 61000−4−2 Spec.

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

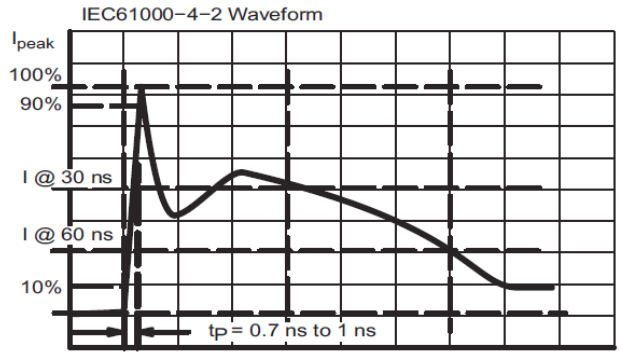


Figure 3. IEC61000 −4−2 Spec

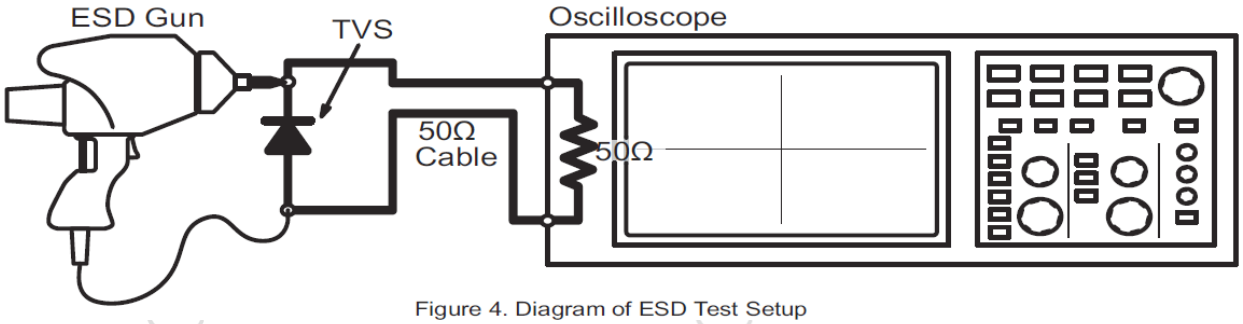


Figure 4. Diagram of ESD Test Setup

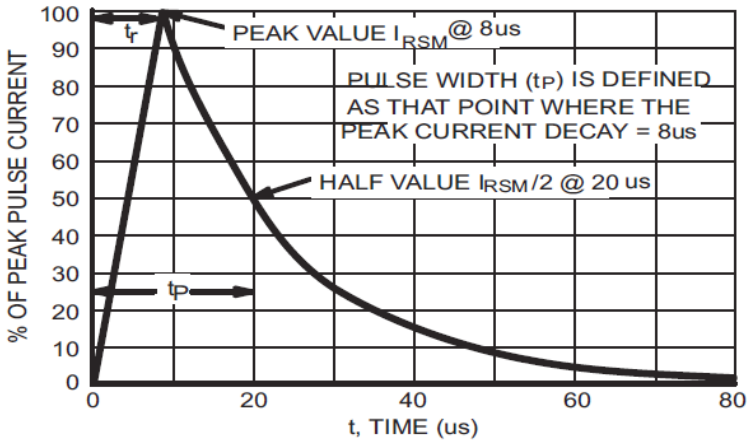


Figure 5. 8 X 20us Pulse Waveform