

Transient Voltage Suppressors for ESD Protection

FEATURES:

- ▮ Low Leakage
- ▮ Response Time is Typically < 1 ns
- ▮ IEC61000-4-2 Level 4 ESD Protection
- ▮ These are Pb-Free Devices
- ▮ We declare that the material of product compliance with RoHS requirements and Halogen Free.

Circuit Diagram & Pin Configuration:



SOD-882



DEVICE MARKING AND ORDERING INFORMATION

| Device | Marking | Shipping |
|--------------|---------|-----------------|
| TESDN121AD82 | H | 10000/Tape&Reel |

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--|----------------------------------|------------|------|
| IEC 61000-4-2 (ESD) Air discharge | | ±15 | kV |
| Contact discharge | | ±8 | kV |
| ESD Voltage Per Human Body Model | | 16 | kV |
| Total Power Dissipation on FR-5 Board (Note 1) @ T _A =25 | PD | 150 | mW |
| Junction and Storage Temperature Range | T _J ,T _{STG} | -55 to 150 | |
| Lead Solder Temperature – Maximum (10 Second Duration) | TL | 260 | |

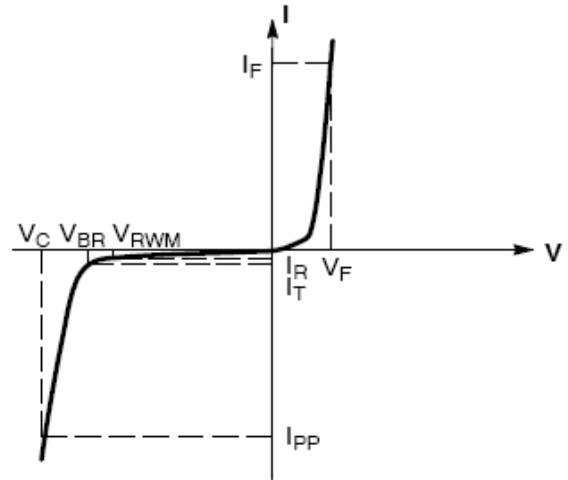
Stresses exceeding Maximum Ratings may damage the device. Maximum Rating are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. FR-5 = 1.0*0.75*0.62 in.

ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$ unless otherwise noted)

| 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} |
| V_{BR} | Breakdown Voltage @ I_T |
| I_T | Test Current |
| I_F | Forward Current |
| V_F | Forward Voltage @ I_F |
| P_{pk} | Peak Power Dissipation |
| C | Max. Capacitance @ $V_R = 0$ and $f = 1\text{ MHz}$ |



Uni-Directional TVS

ELECTRICAL CHARACTERISTICS ($T_A=25$ unless otherwise noted, $V_F=0.9\text{V}$ Max. @ $I_F=10\text{Ma}$ for all types)

| Device | V_{RWM} (V) | I_R (μA) @ V_{RWM} | V_{BR} (V) @ I_T (Note 2) | I_T (mA) | I_{PP} (A) (Note 3) | V_C (V) @ Max I_{PP} (Note 3) | P_{PK} (W) (8*20 μs) | C (pF) |
|--------------|------------------|--|--|---------------|-----------------------------|--|--|-----------|
| | Max | Max | Min | | Max | Max | Typ | Typ |
| TESDN121AD82 | 12 | 1.0 | 13.3 | 1.0 | 5.9 | 23.7 | 140 | 30 |

Other voltage available upon request.

2. V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25

3. Surge current waveform per Figure 3.

TYPICAL CHARACTERISTICS

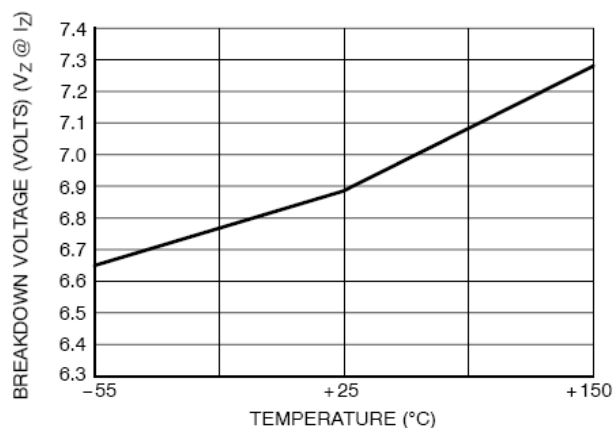


Figure 1. Typical Breakdown Voltage versus Temperature

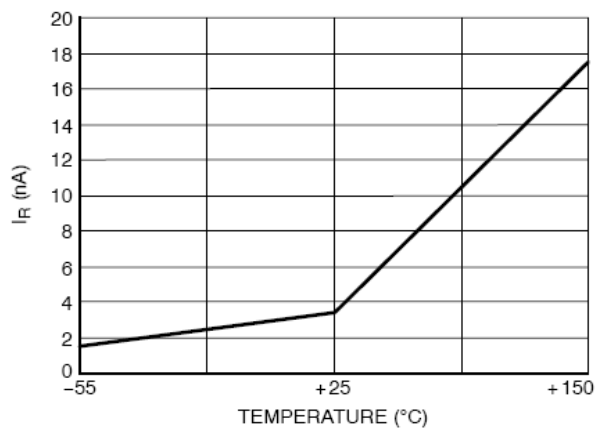


Fig 2. Typical Leakage Current versus Temperature

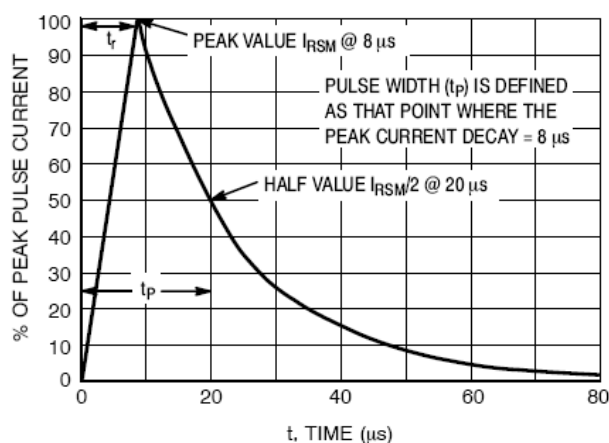


Figure 3. 8*20 s Pulse Waveform

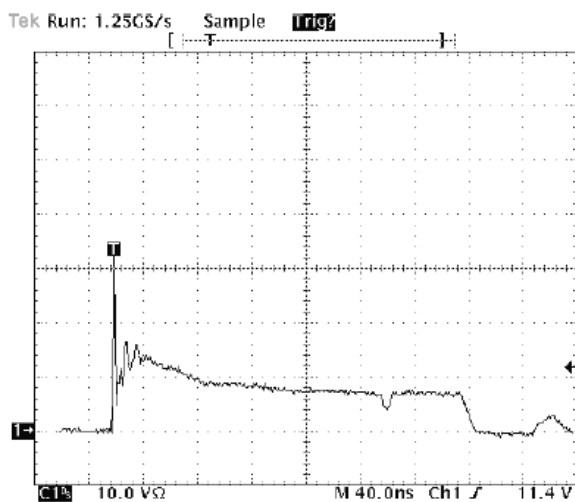


Figure 4. Positive 8kV contact per IEC 61000-4-2

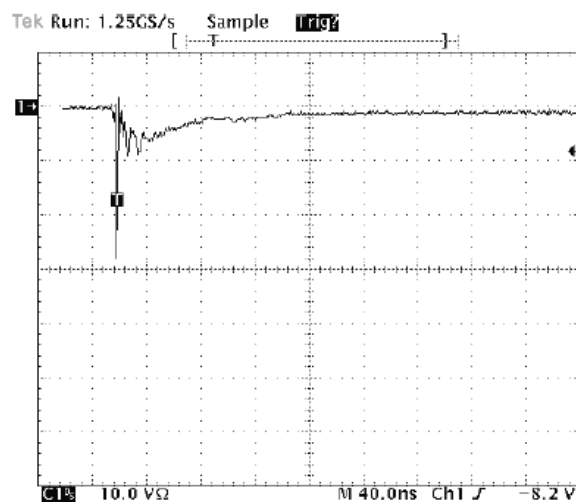
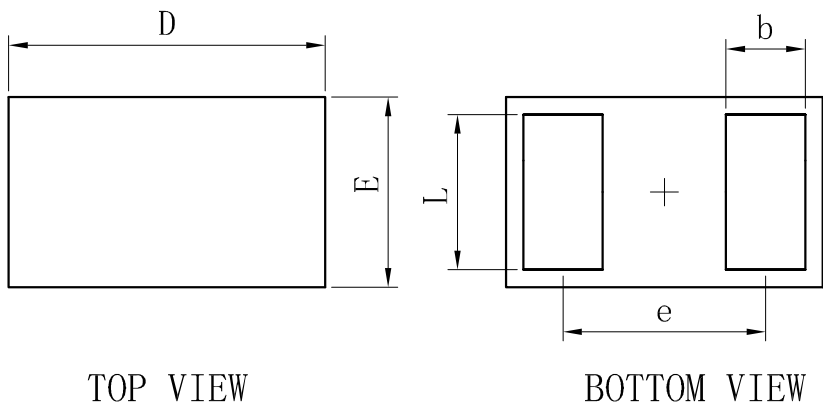
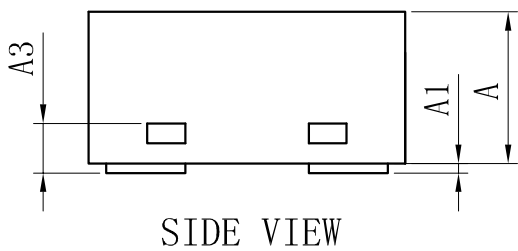


Fig 5. Negative 8kV contact per IEC 61000-4-2

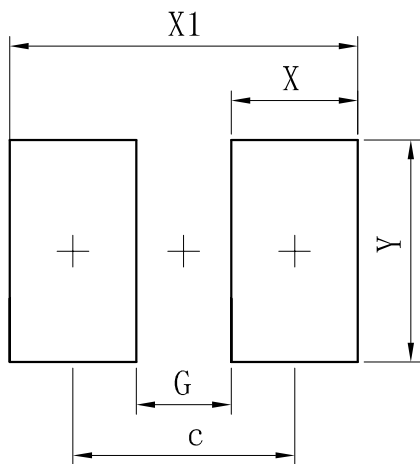
OUTLINE AND DIMENSIONS



| SOD882 | | | |
|----------------------|-----------|------|------|
| Dim | Min | Typ | Max |
| D | 0.95 | 1.00 | 1.05 |
| E | 0.55 | 0.60 | 0.65 |
| e | – | 0.64 | – |
| L | 0.44 | 0.49 | 0.54 |
| b | 0.20 | 0.25 | 0.30 |
| A | 0.43 | 0.48 | 0.53 |
| A1 | 0 | – | 0.05 |
| A3 | 0.127REF. | | |
| All Dimensions in mm | | | |



SOLDERING FOOTPRINT



| Dimensions | (mm) |
|------------|------|
| c | 0.70 |
| G | 0.30 |
| X | 0.40 |
| X1 | 1.10 |
| Y | 0.70 |

NOTICE

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