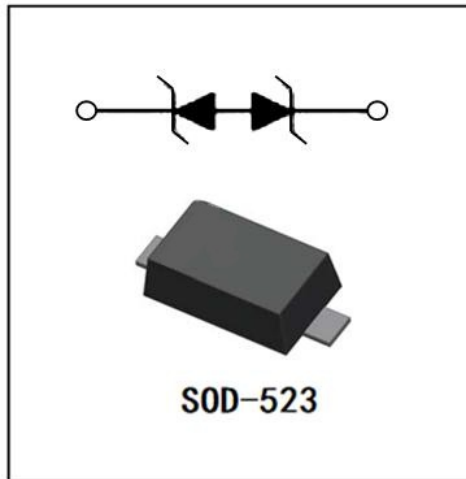


ESD Protection Diode



Features

- For sensitive ESD protection
- Low leakage
- Bi-directional ESD protection of one line
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Mechanical Data

- **Package:** SOD523
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** See Bellow



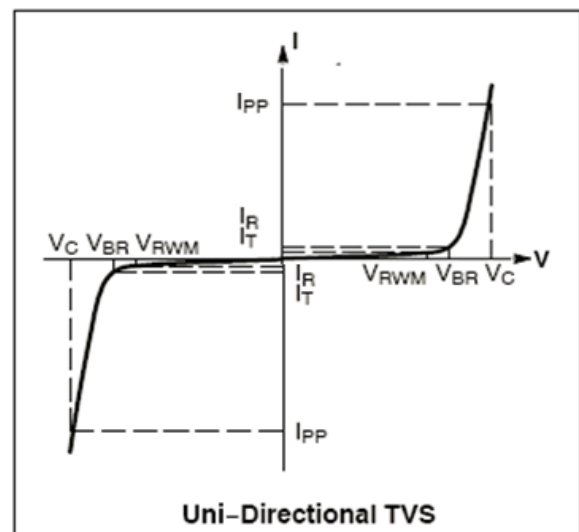
Maximum Ratings

| PARAMETER | SYMBOL | LIMITS | UNIT |
|--|-------------------|-------------|------|
| Operating Junction & Storage Temperature | T_J & T_{STG} | -45 to +125 | °C |
| IEC61000-4-2(ESD)Air | V_{ESD} | ±30 | KV |
| IEC61000-4-2(ESD)Contact | | ±30 | KV |
| JESD22-A114-B(ESD)Machine | | ±0.4 | KV |
| JESD22-A114-B(ESD)Human Body | | ±16 | KV |
| Peak Pulse Current | $I_{PP}^{(1)}$ | 8 | A |

(1). Non-repetitive current pulse 8/20 μ s exponential decay waveform according to IEC61000-4-5.

Electrical Parameter

| PARAMETER | SYMBOL |
|--|-----------|
| Clamping Voltage@ I_{PP} | V_C |
| Breakdown Voltage@ I_T | V_{BR} |
| Peak Pulse Current | I_{PP} |
| Test Current | I_T |
| Reverse Leakage Current@ V_{RWM} | I_R |
| Reverse Standoff Voltage | V_{RWM} |
| Peak Power Dissipation | P_{PK} |
| Max. Capacitance @ $V_R=0$ and $f=1$ MHz | C |





ESD3V3D5B

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

| PARAMETER | Symbol | UNIT | Conditions | Min | Typ | Max |
|--------------------------|---------------------------------|------|---|-----|-----|-----|
| Reverse Standoff Voltage | V _{RWM} ⁽¹⁾ | V | | | | 3.3 |
| Reverse Leakage Current | I _R | uA | V _{RWM} =3.3V | | | 0.5 |
| Breakdown Voltage | V _(BR) | V | I _T =1mA | 3.6 | | 5.0 |
| Clamping voltage | V _C ⁽²⁾ | V | I _{PP} = 16A, t _p = 100ns | | 11 | |
| Clamping voltage | V _C ⁽³⁾ | V | V _{ESD} = 8kV | | 10 | |
| Clamping Voltage | V _C ⁽⁴⁾ | V | I _{pp} =1A | | | 8 |
| Clamping Voltage | V _C ⁽⁴⁾ | V | I _{pp} =8A | | | 11 |
| Peak Power Dissipation | P _{Pk} | W | T _p =8/20us | | | 88 |
| Junction Capacitance | C _J | pF | V _R =0V, f=1MHz | | 15 | |

(1).Other voltages available upon request.

(2) TLP parameter: Z₀ = 50Ω, t_p = 100ns, t_r = 2ns, averaging window from 60ns to 80ns.

(3) Contact discharge mode, according to IEC61000-4-2.

(4).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|-------------------|----------------------|-------------------------|----------------------------|---------------|
| ESD3V3D5B | F2 | Approximate 0.002 | 8000 | 80000 | 320000 | 7" reel |

■ Characteristics (Typical)

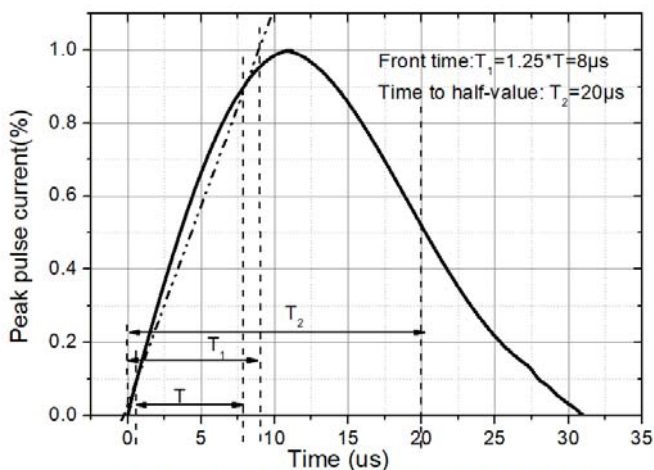


Figure 1. 8/20μs waveform per IEC61000-4-5

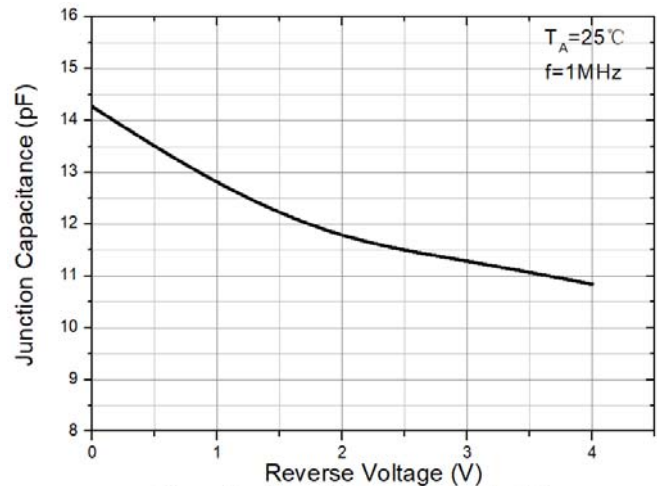


Figure2. Capacitance Characteristics



ESD3V3D5B

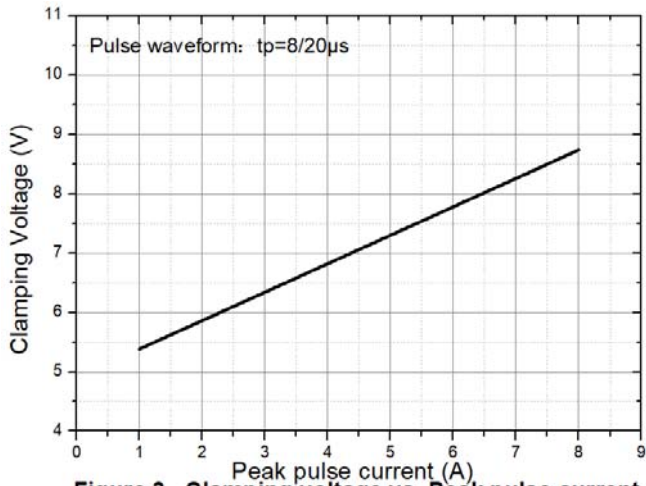


Figure 3. Clamping voltage vs. Peak pulse current

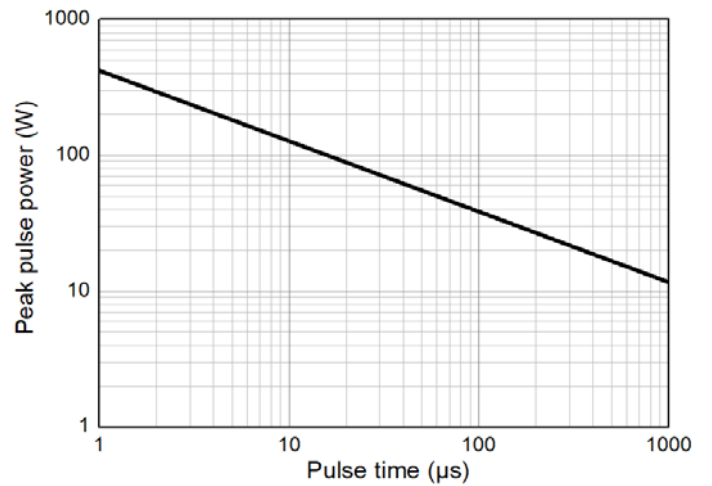


Figure 4 Non-repetitive peak pulse power vs. Pulse time

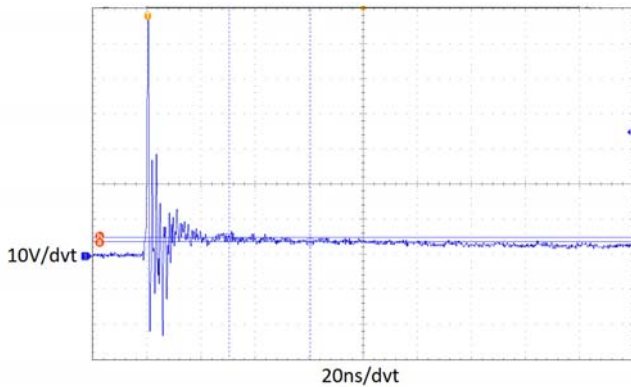


Figure 5. ESD clamping
(+8kV contact discharge per IEC61000-4-2)

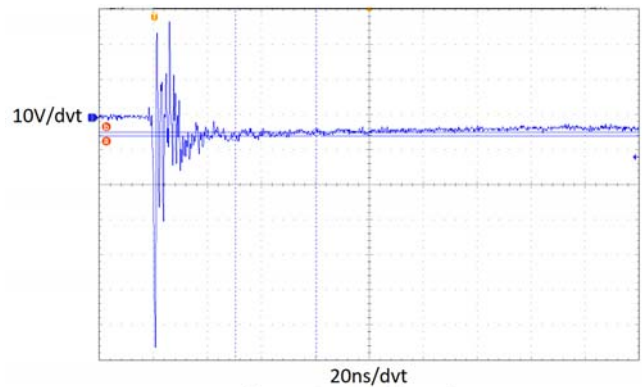


Figure 6. ESD clamping
(-8kV contact discharge per IEC61000-4-2)

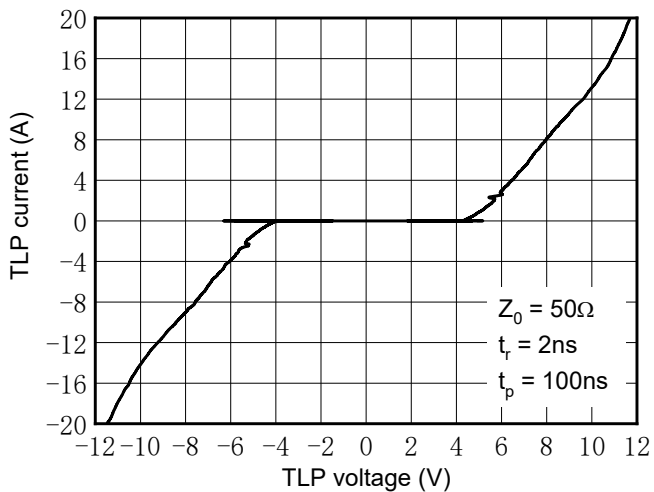
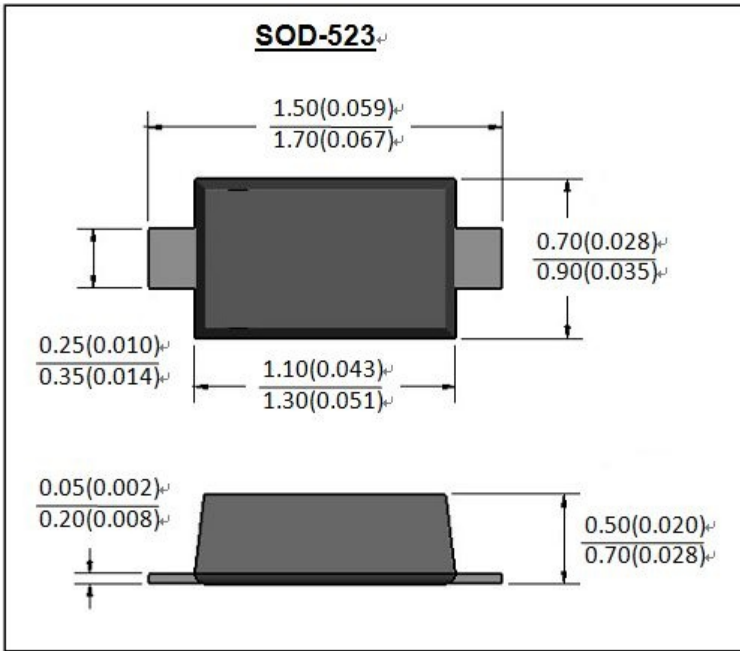
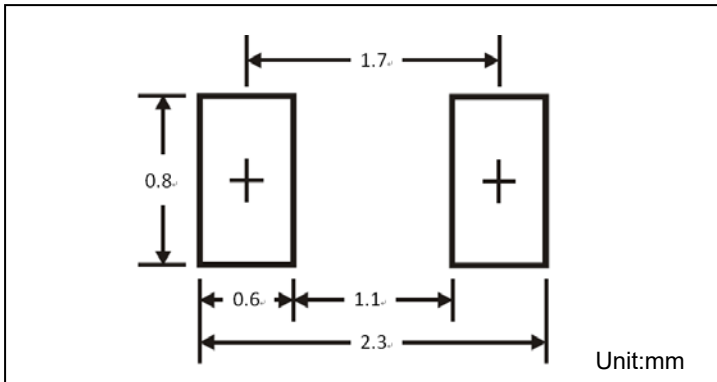


Figure 7. TLP Measurement

■ Outline Dimensions



■ Soldering Footprint





ESD3V3D5B

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