

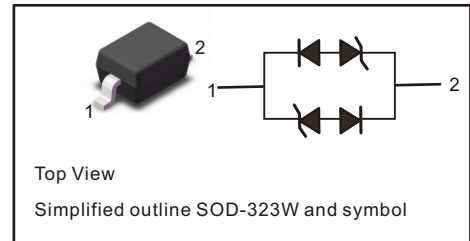


Descriptions

The ESD3W3V3DUB is a low capacitance TVS (Transient Voltage Suppressor) array designed to protect high speed data interfaces. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by Electrostatic Discharge (ESD), cable discharge events (CDE), lightning and other induced voltage surges.

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |



FEATURES

- Stand-off voltage: 3.3V Max
- Transient protection for each line according to IEC61000-4-2 (ESD): $\pm 30\text{kV}$ (contact discharge)
IEC61000-4-4 (EFT): 40A - 5/50ns
IEC61000-4-5 (surge): 20A (8/20 μs)
- Low capacitance: $C_J = 1\text{pF}$ typ
- Ultra-low leakage current: $I_R = 0.1\text{nA}$ typ
- Low clamping voltage

Applications

- 10/100M Ethernet
- STB
- Router
- Networking
- Modem

Maximum Ratings (Ta=25°C unless otherwise specified)

| Parameter | Symbols | ESD3W3V3DUB | Units |
|---|-----------|-------------|-------|
| Peak pulse power ($t_p = 8/20\mu\text{s}$) | P_{PK} | 340 | W |
| Peak Pulse Current ($t_P = 8/20\mu\text{S}$) | I_{PP} | 20 | A |
| ESD according to IEC61000-4-2 air discharge | V_{ESD} | ± 30 | kV |
| ESD according to IEC61000-4-2 contact discharge | | ± 30 | |
| Junction Temperature | T_J | 125 | °C |
| Storage temperature | T_{STG} | -55 ~ +125 | °C |



Electrical Characteristics (Ta=25 unless otherwise specified)

| Parameter | Symbol | Test conditions | Min | Typ | Max | Unit |
|---------------------------|-----------|---|-----|-----|-----|------|
| Reverse Stand-off Voltage | V_{RWM} | | | | 3.3 | V |
| Reverse Breakdown Voltage | V_{BR} | $I_t = 1 \text{ mA}$ | 4.0 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 3.3\text{V}, T = 25^\circ\text{C}$ | | | 100 | nA |
| Clamping Voltage | V_C | $I_{PP} = 1\text{A}, t_P = 8/20\mu\text{s}$ | | | 8 | V |
| | | $I_{PP} = 5\text{A}, t_P = 8/20\mu\text{s}$ | | | 10 | |
| | | $I_{PP} = 20\text{A}, t_P = 8/20\mu\text{s}$ | | | 17 | |
| Junction Capacitance | C_j | $V_R = 0\text{V}, f = 1\text{MHz}$ | | 1.0 | 1.5 | pF |

Fig.1 V_C ---- I_{PP}

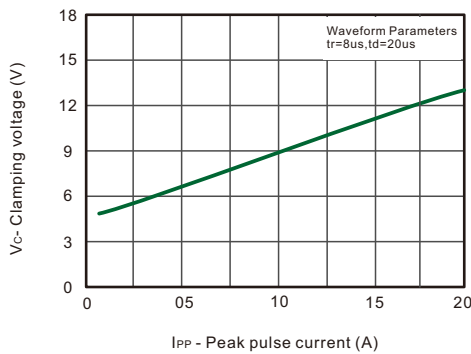


Fig.2 V_R — C_j

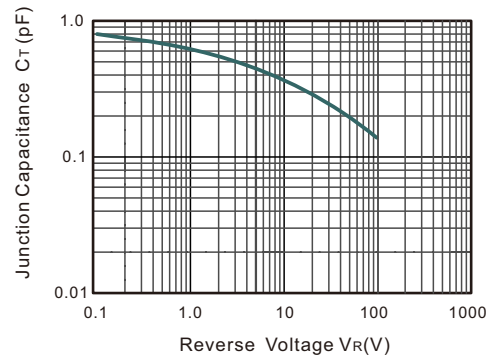


Fig.3 Non-repetitive peak pulse power vs. Pulse time

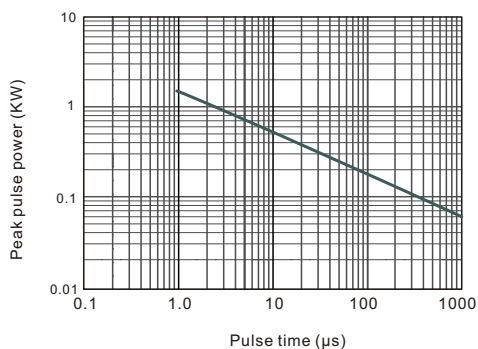


Fig.4 Power Derating Curve

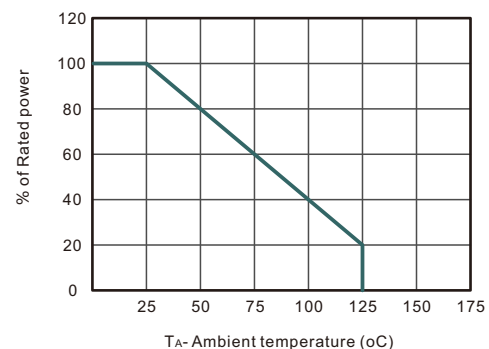


Fig.5 Contact discharge current waveform per IEC61000-4-2

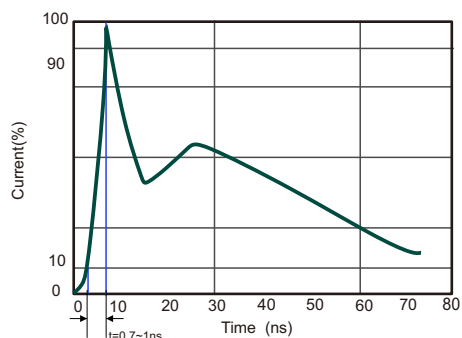
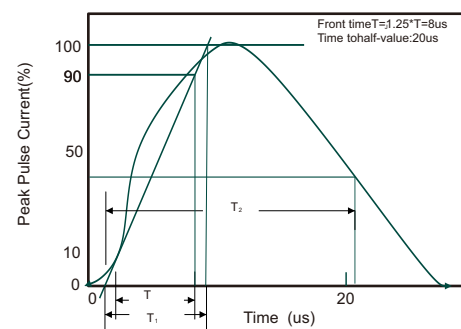


Fig.6 8/20us waveform per IEC61000-4-5

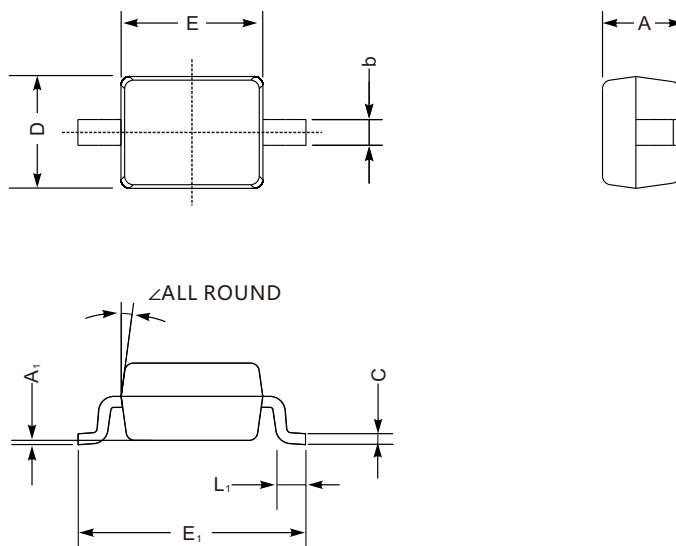




PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

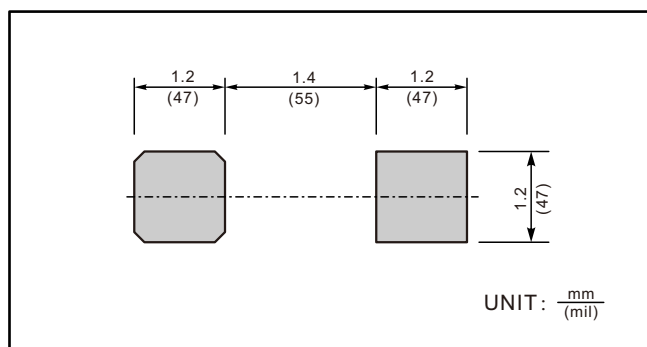
SOD-323W



SOD-323W mechanical data

| UNIT | | A | C | D | E | E ₁ | b | L ₁ | A ₁ | ∠ |
|------|-----|-----|------|-----|-----|----------------|------|----------------|----------------|----|
| mm | max | 1.1 | 0.15 | 1.4 | 1.8 | 2.75 | 0.4 | 0.45 | 0.2 | 9° |
| | min | 0.8 | 0.08 | 1.2 | 1.4 | 2.55 | 0.25 | 0.2 | — | |
| mil | max | 43 | 5.9 | 55 | 70 | 108 | 16 | 16 | 8 | |
| | min | 32 | 3.1 | 47 | 63 | 100 | 9.8 | 7.9 | — | |

The recommended mounting pad size



Marking

| Type number | Marking code |
|-------------|--------------|
| ESD3W3V3DUB | EB3 |