

1.Features

- Unidirectional ESD protection of one line
- Low diode capacitance: $C_d=34\text{pF}$
- Low clamping voltage: $V_{CL}=11\text{V}$
- Very low leakage current: $I_{RM}=100\text{nA}$
- ESD protection up to 30 kV
- IEC 61000-4-2; level 4 (ESD)
- AEC-Q101 qualified

3.Applications

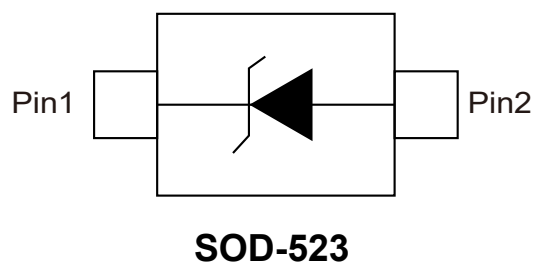
- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Communication systems
- FireWire

2.Mechanical Data

- SOD-523 package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering
guaranteed: $260^{\circ}\text{C}/10\text{S}$

- Subscriber Identity Module (SIM) card protection
- High-speed data lines
- Portable electronics

4.Pinning information



5. Quick reference data

$T_{amb}=25^{\circ}\text{C}$ unless otherwise specified.

| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|--------------------------|-----------|-----------------------------------|-----|-----|-----|-------|
| reverse standoff voltage | V_{RWM} | | | | 3.3 | V |
| diode capacitance | C_d | $V_R=0\text{V}$, $f=1\text{MHz}$ | | 34 | 40 | pF |



6. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|----------------------|-----------|--------------------|-----|-----|-----|-------|
| peak pulse power | P_{PP} | $t_p=8/20\mu s$ ①② | | | 45 | W |
| peak pulse current | I_{PP} | $t_p=8/20\mu s$ ①② | | | 4.5 | A |
| junction temperature | T_J | | | | 150 | °C |
| ambient temperature | T_{amb} | | -55 | | 150 | °C |
| storage temperature | T_{STG} | | -65 | | 150 | °C |

Notes:

- ① Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.
- ② Measured from pin 1 to pin 2.

7. ESD maximum ratings

$T_{amb}=25^{\circ}C$ unless otherwise specified.

| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|---------------------------------|-----------|-------------------------------------|-----|-----|-----|-------|
| electrostatic discharge voltage | V_{ESD} | IEC 61000-4-2 (contact discharge) ① | | | 30 | kV |
| | | machine model | | | 400 | V |
| | | MIL-STD-883 (human body model) | | | 16 | kV |

Notes:

- ① Device stressed with ten non-repetitive ESD pulses.

8. ESD standards compliance

| Parameter | Conditions |
|---|---------------------------------|
| IEC 61000-4-2; level 4 (ESD) | > 15 kV (air); > 8 kV (contact) |
| MIL-STD-883; class 3 (human body model) | > 4 kV |



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

| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|--------------------------|------------------|--|-----|-----|-----|----------|
| reverse standoff voltage | V_{RWM} | | | | 3.3 | V |
| reverse leakage current | I_{RM} | $V_{\text{RWM}}=3.3\text{V}$ | | 100 | 300 | nA |
| breakdown voltage | V_{BR} | $I_{\text{R}}=1\text{mA}$ | 5.3 | 5.6 | 6 | V |
| diode capacitance | C_{d} | $V_{\text{R}}=0\text{V}$, $f=1\text{MHz}$ | | 34 | 40 | pF |
| clamping voltage | V_{CL} | ①② | | | | |
| | | $I_{\text{PP}}=1\text{A}$ | | | 8 | V |
| | | $I_{\text{PP}}=4.5\text{A}$ | | | 11 | V |
| differential resistance | r_{dif} | $I_{\text{R}}=5\text{mA}$ | | | 30 | Ω |
| forward voltage | V_{F} | $I_{\text{F}}=200\text{mA}$ | | | 1.2 | V |

Notes:

① Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.

② Measured from pin 1 to pin 2.

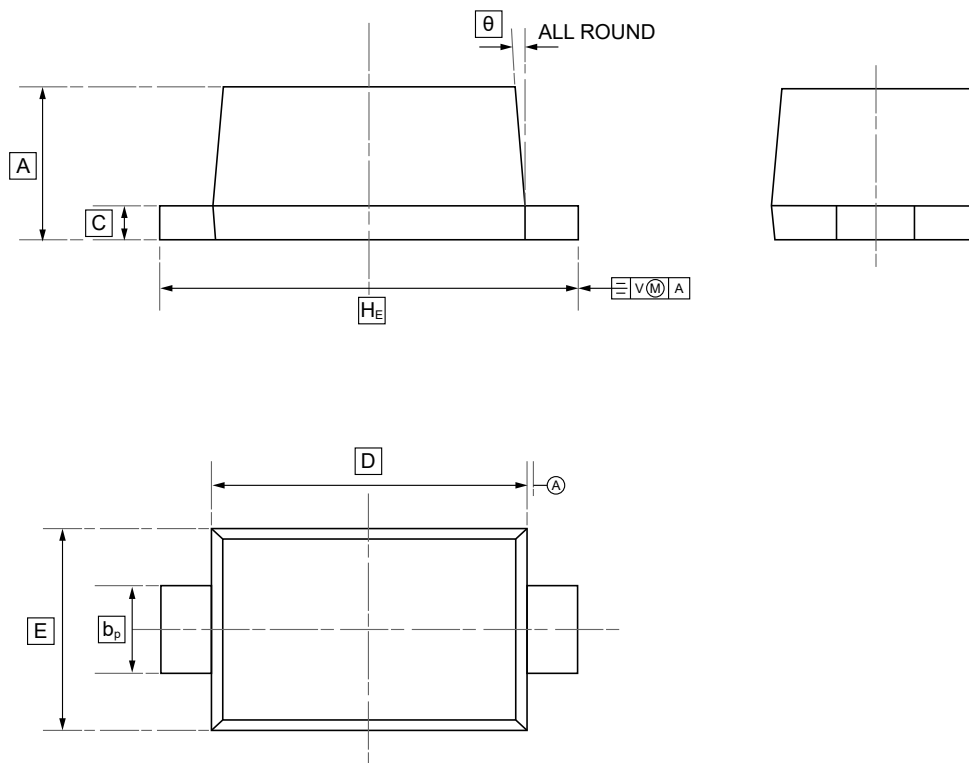


10. Typical characteristic

| | |
|--|--|
| | |
| Figure 1: 8/20 μs pulse waveform according to IEC 61000-4-5 | Figure 2: ESD pulse waveform according to IEC 61000-4-2 |
| | |
| Figure 3: unclamped +8 kV ESD pulse waveform (IEC 61000-4-2 network) | Figure 4: clamped +8 kV ESD pulse waveform (IEC 61000-4-2 network) |



11.SOD-523 Package Outline Dimensions

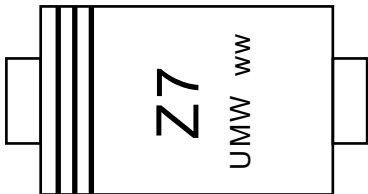


DIMENSIONS (mm are the original dimensions)

| Symbol | A | b _p | C | D | E | H _E | θ |
|--------|------|----------------|-------|------|------|----------------|----|
| Min | 0.58 | 0.3 | 0.100 | 1.15 | 0.75 | 1.5 | 5° |
| Max | 0.68 | 0.4 | 0.135 | 1.25 | 0.85 | 1.7 | |



12.Ordering information



ww: Week Code

| Order Code | Package | Base QTY | Delivery Mode |
|-----------------|---------|----------|---------------|
| UMW PESD3V3L1UB | SOD-523 | 3000 | Tape and reel |



13.Disclaimer

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