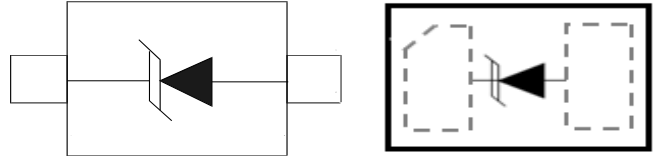


## Features

- Unidirectional ESD protection of one line
- Low diode capacitance:  $C_d = 25 \text{ pF}$
- Low clamping voltage:  $V_{CL} = 12 \text{ V}$
- Very low leakage current:  $I_{RM} = 10 \text{ nA}$
- ESD protection up to 26 kV
- IEC 61000-4-2; level 4 (ESD)
- AEC-Q101 qualified



## Applications

- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Communication systems
- Subscriber Identity Module (SIM) card protection
- Portable electronics
- FireWire
- High-speed data lines

## Mechanical Characteristics

- SOD-882 package
- Molding compound flammability rating: UL94 V-0
- Marking: Marking Code
- Packaging: Tape and Reel per EIA4 81
- RoHS/WEEE Compliant

## Quick reference data

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

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{RWM}$	reverse standoff voltage		-	-	5.0	V
$C_d$	diode capacitance	$f = 1 \text{ MHz}; V_R = 0 \text{ V}$	-	25	30	pF

### Limiting values

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

Symbol	Parameter	Conditions	Min	Max	Unit
P <sub>PP</sub>	peak pulse power	t <sub>p</sub> = 8/20 μs [1][2]	-	42	W
I <sub>PP</sub>	peak pulse current	t <sub>p</sub> = 8/20 μs [1][2]	-	3.5	A
T <sub>j</sub>	junction temperature		-	150	°C
T <sub>amb</sub>	ambient temperature		-55	+150	°C
T <sub>stg</sub>	storage temperature		-65	+150	°C

[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.

### ESD maximum ratings

T<sub>amb</sub> = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Max	Unit
V <sub>ESD</sub>	electrostatic discharge voltage	IEC 61000-4-2 (contact discharge)	[1] -	26	kV
		machine model	-	400	V
		MIL-STD-883 (human body model)	-	10	kV

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

### ESD standards compliance

#### Standard

IEC 61000-4-2; level 4 (ESD)

MIL-STD-883; class 3 (human body model)

#### Conditions

> 15 kV (air); > 8 kV (contact)

> 4 kV

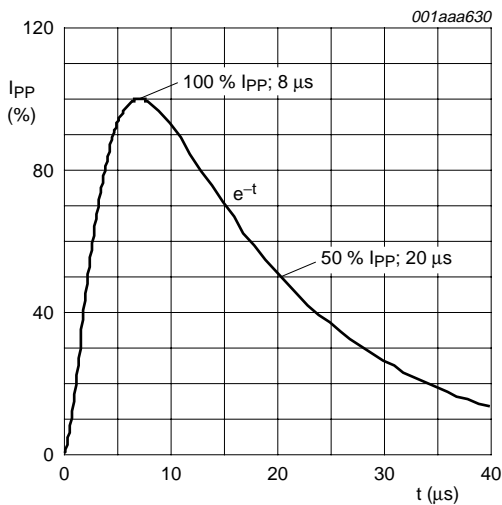


Fig 1. 8/20 μs pulse waveform according to IEC 61000-4-5

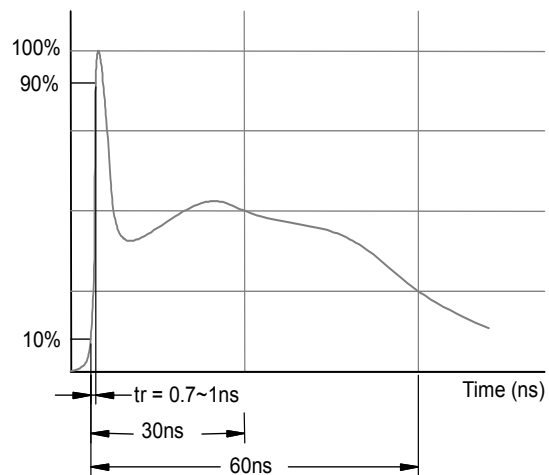


Fig 2. ESD pulse waveform according to IEC 61000-4-2

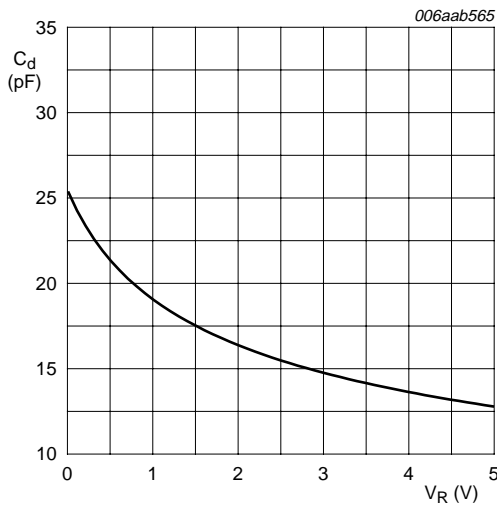
### Characteristics

T<sub>amb</sub> = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V <sub>RWM</sub>	reverse standoff voltage		-	-	5.0	V
I <sub>RM</sub>	reverse leakage current	V <sub>RWM</sub> = 5.0 V	-	10	100	nA
V <sub>BR</sub>	breakdown voltage	I <sub>R</sub> = 5 mA	6.4	6.8	7.2	V
C <sub>d</sub>	diode capacitance	f = 1 MHz; V <sub>R</sub> = 0 V	-	25	30	pF
V <sub>CL</sub>	clamping voltage	[1][2] I <sub>PP</sub> = 1 A I <sub>PP</sub> = 3.5 A	-	-	9 12	V
r <sub>dif</sub>	differential resistance	I <sub>R</sub> = 5 mA	-	-	30	Ω
V <sub>F</sub>	forward voltage	I <sub>F</sub> = 200 mA	-	-	1.2	V

[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.



f = 1 MHz; T<sub>amb</sub> = 25 °C

Fig 3. Diode capacitance as a function of reverse voltage; typical values

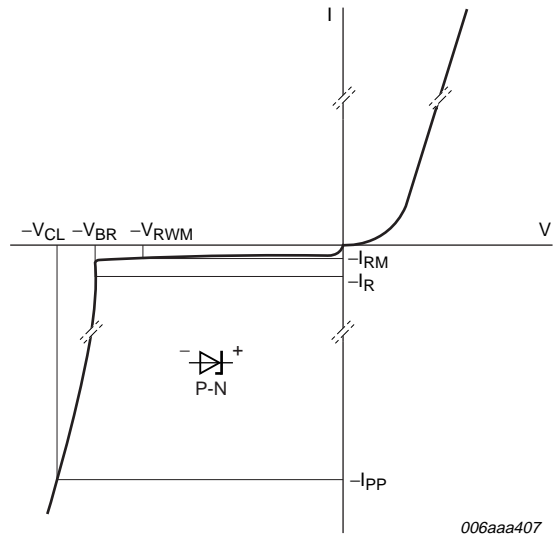


Fig 4. V-I characteristics for a unidirectional ESD protection diode

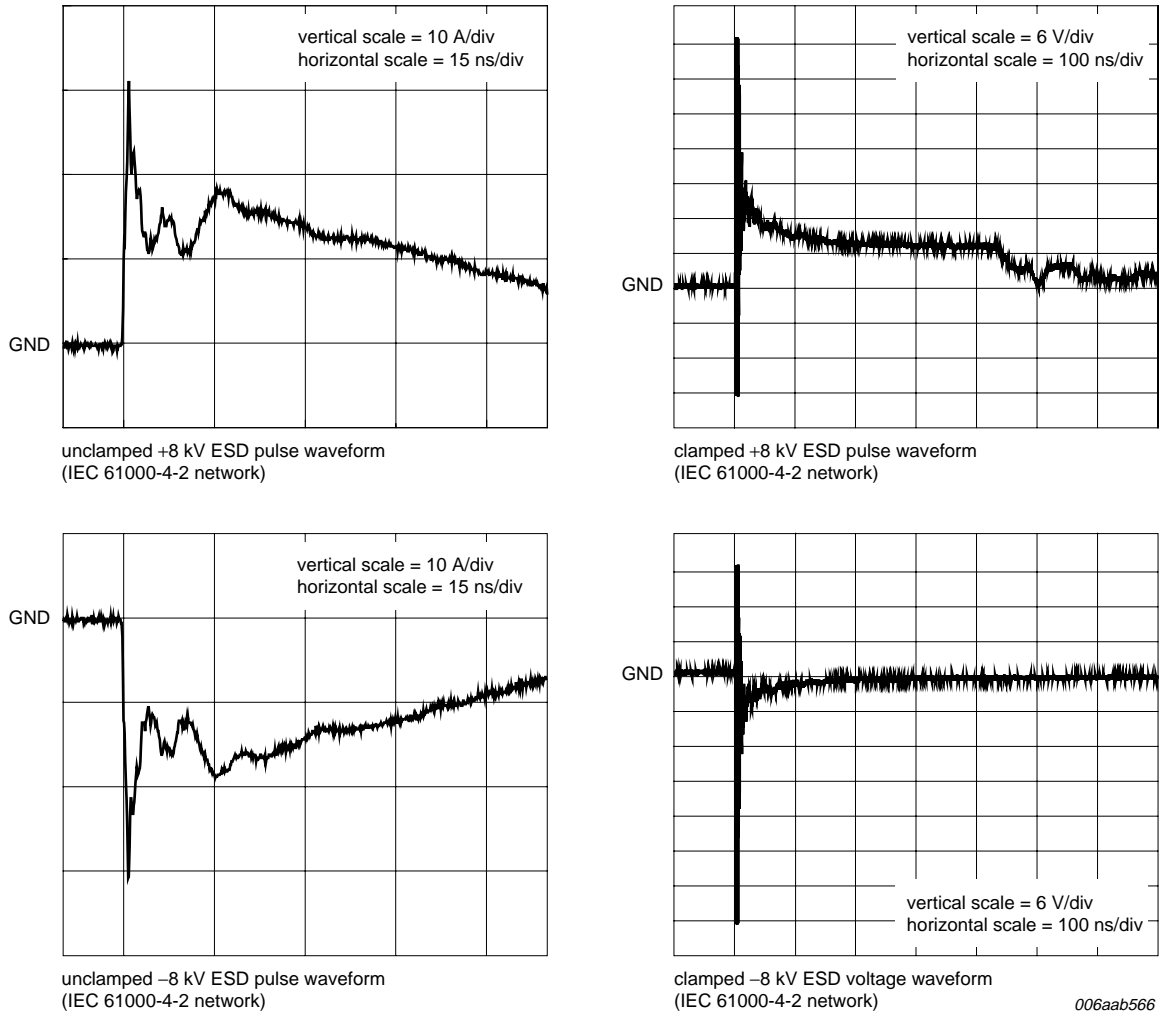
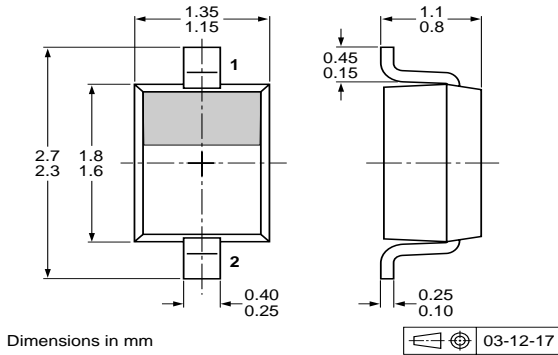
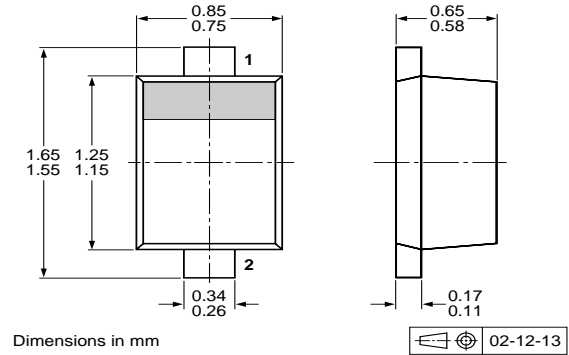


Fig 5. ESD clamping test setup and waveforms

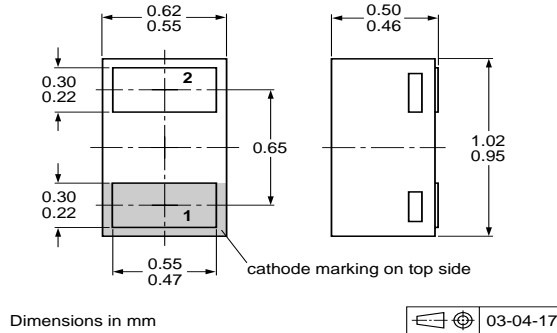
**SOD-323/SOD-523/SOD-882 PACKAGE OUTLINE DIMENSIONS**



**PESD5V0L1UA (SOD323)**

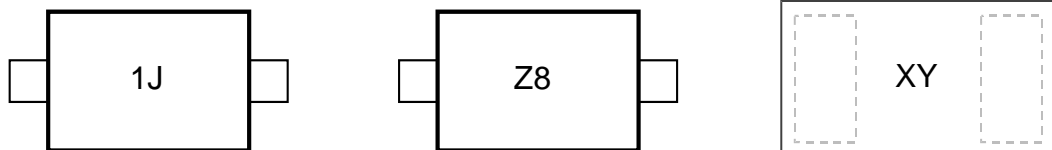


**PESD5V0L1UB (SOD523)**



**PESD5V0L1UL (SOD882)**

**Marking**



**Ordering information**

Order code	Marking code	Package	Baseqty	Deliverymode
UMW PESD5V0L1UA	1J	SOD-323	3000	Tape and reel
UMW PESD5V0L1UB	Z8	SOD-523	3000	Tape and reel
UMW PESD5V0L1UL	XY	SOD-882	10000	Tape and reel

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