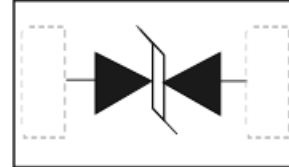


## Features

- Bidirectional ESD protection of one line
- Femtofarad capacitance:  $C_d = 400$  fF
- Low ESD clamping voltage: 30 V at 30 ns and  $\pm 8$  kV
- Very low leakage current:  $I_{RM} < 1$  nA
- ESD protection up to 10 kV
- IEC 61000-4-2; level 4 (ESD)
- AEC-Q101 qualified



## Applications

- 10/100/1000 Mbit/s Ethernet
- FireWire
- High-speed data lines
- Subscriber Identity Module (SIM) card protection
- Cellular handsets and accessories
- Portable electronics
- Communication systems
- Computers and peripherals
- Audio and video equipment
- Antenna protection

## Mechanical Data

- SOD-882 package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranteed: 260°C/10s

## Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Per device</b>						
$V_{RWM}$	reverse standoff voltage		-	-	5.5	V
$C_d$	diode capacitance	$f = 1$ MHz; $V_R = 0$ V	-	0.4	0.55	pF

### Limiting values

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

Symbol	Parameter	Conditions		Min	Max	Unit
<b>Per device</b>						
I <sub>PP</sub>	peak pulse current	t <sub>p</sub> = 8/20 μs	[1]	-	2.5	A
T <sub>j</sub>	junction temperature			-	125	°C
T <sub>amb</sub>	ambient temperature			-40	+125	°C
T <sub>stg</sub>	storage temperature			-55	+125	°C

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

### ESD maximum ratings

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

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

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

### ESD standards compliance

Standard	Conditions
<b>Per device</b>	
IEC 61000-4-2; level 4 (ESD)	> 8 kV (contact)
MIL-STD-883; class 3 (human body model)	> 4 kV

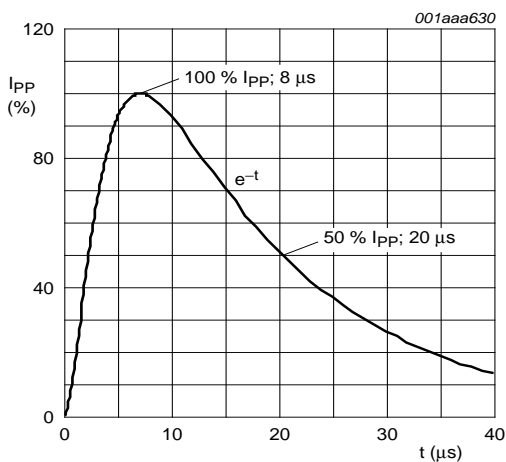


Fig 1. 8/20 μs pulse waveform according to IEC 61000-4-5

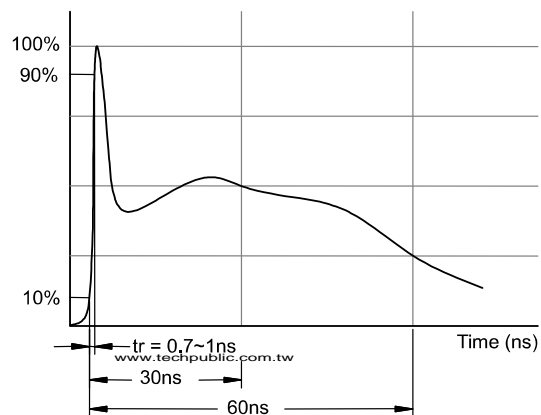


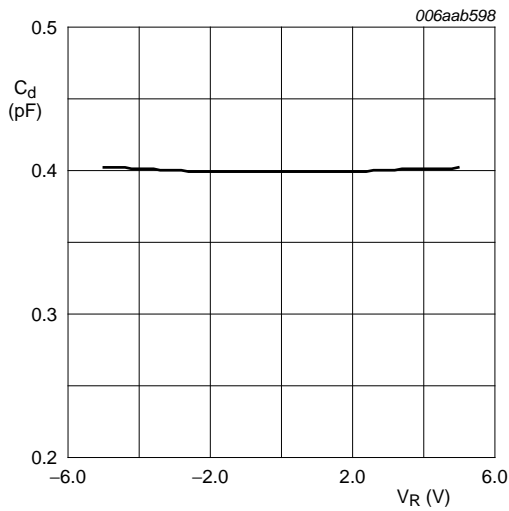
Fig 2. ESD pulse waveform according to IEC 61000-4-2

## Characteristics

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

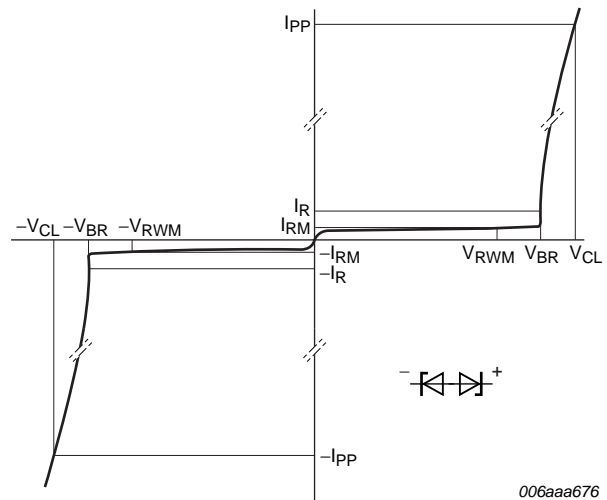
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
<b>Per device</b>						
V <sub>RWM</sub>	reverse standoff voltage		-	-	5.5	V
I <sub>RM</sub>	reverse leakage current	V <sub>RWM</sub> = 5 V	-	1	100	nA
V <sub>BR</sub>	breakdown voltage	I <sub>R</sub> = 1 mA	6	8	10	V
C <sub>d</sub>	diode capacitance	f = 1 MHz; V <sub>R</sub> = 0 V	-	0.4	0.55	pF
V <sub>CL</sub>	clamping voltage	[1]				
		I <sub>PP</sub> = 1 A	-	-	11	V
		I <sub>PP</sub> = 2.5 A	-	-	15	V
r <sub>dif</sub>	differential resistance	I <sub>R</sub> = 20 mA	-	-	30	Ω

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

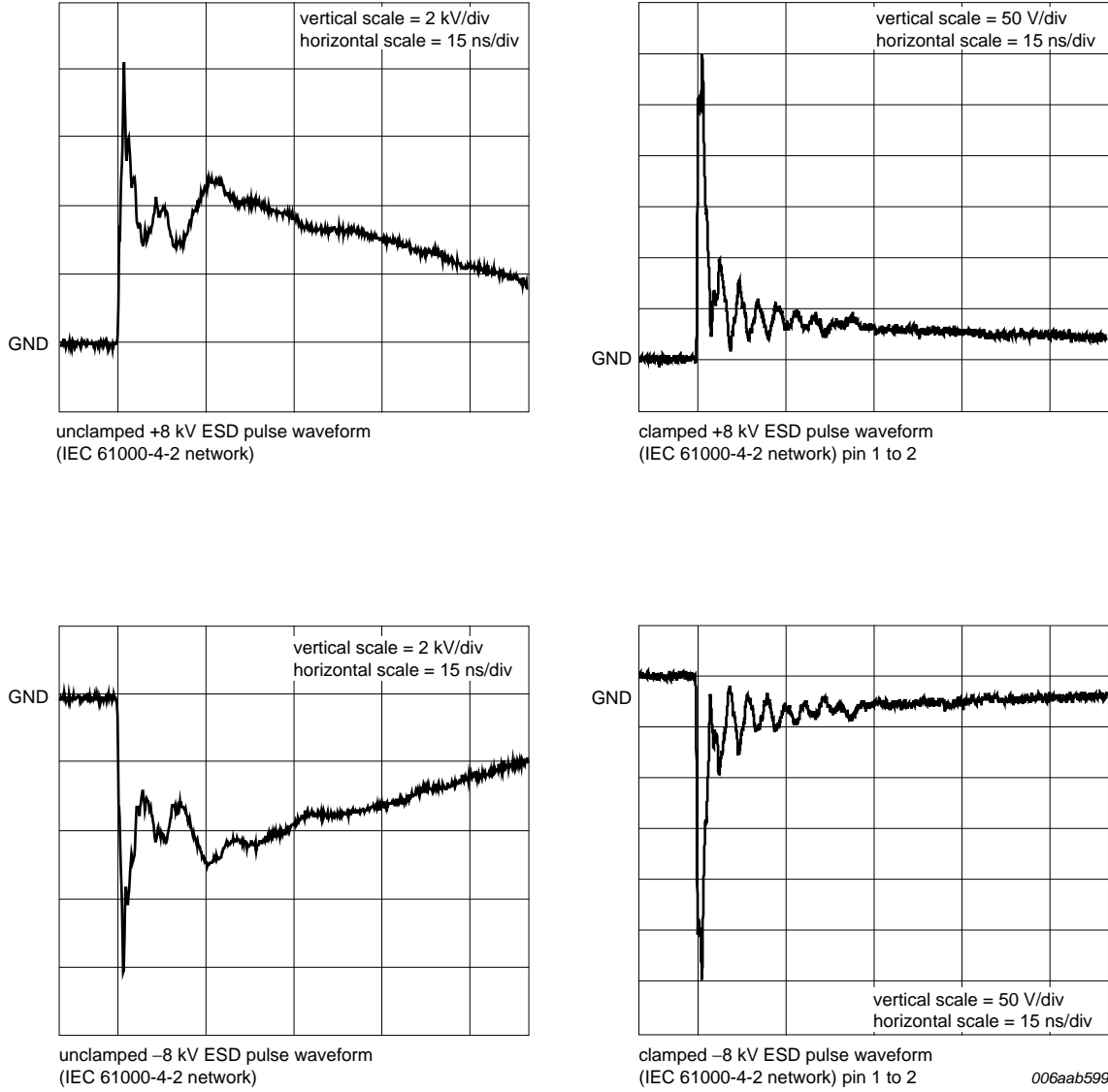


f = 1 MHz; T<sub>amb</sub> = 25 °C

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

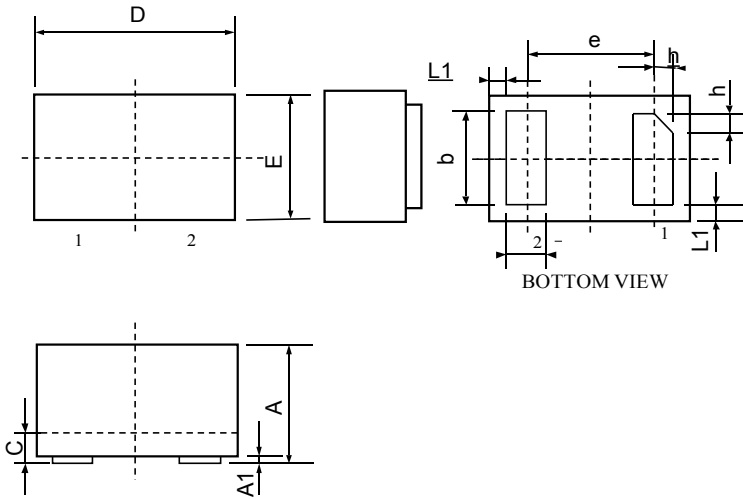


**Fig 4.** V-I characteristics for a bidirectional ESD protection diode



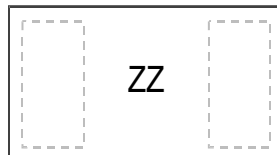
**Fig 5. ESD clamping test setup and waveforms**

**Outline Drawing – SOD-882**



SYMB	MILIMETER		
	MIN	NOM	MAX
OL			
A	0.45	0.50	0.55
A1	0	0.02	0.05
b	0.45	0.50	0.55
C	0.12	0.15	0.18
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
L	0.20	0.25	0.30
L1	0.05REF		
h	0.07	0.12	0.17

**Marking**



**Ordering information**

Order code	Package	Baseq	Deliverymode
PESD5V0F1BL	SOD-882	10000	Tapeandree