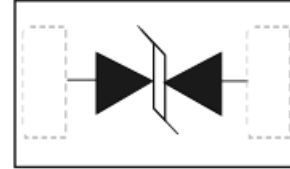


Features

- Bidirectional ESD protection of one line
- Femtofarad capacitance: $C_d = 400 \text{ fF}$
- Low ESD clamping voltage: 30 V at 30 ns and $\pm 8 \text{ kV}$
- Very low leakage current: $I_{RM} < 1 \text{ nA}$
- 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: $260^\circ\text{C}/10\text{s}$

Quick reference data

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

Limiting values

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

Symbol	Parameter	Conditions		Min	Max	Unit
Per device						
I _{PP}	peak pulse current	t _p = 8/20 μs	[1]	-	2.5	A
T _j	junction temperature			-	125	°C
T _{amb}	ambient temperature			-40	+125	°C
T _{stg}	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_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions		Min	Max	Unit
Per device						
V _{ESD}	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
Per device	
IEC 61000-4-2; level 4 (ESD)	> 8 kV (contact)
MIL-STD-883; class 3 (human body model)	> 4 kV

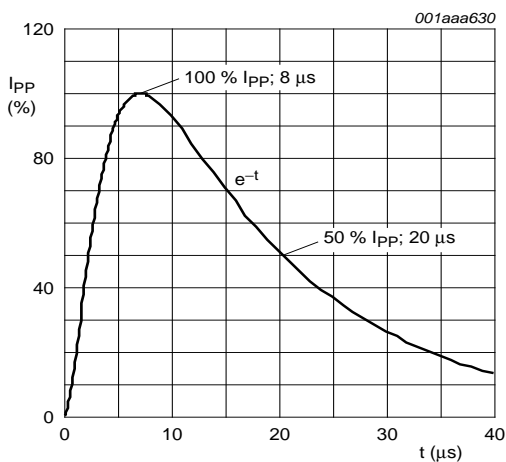


Fig 1. 8/20 μs pulse waveform according to IEC 61000-4-5

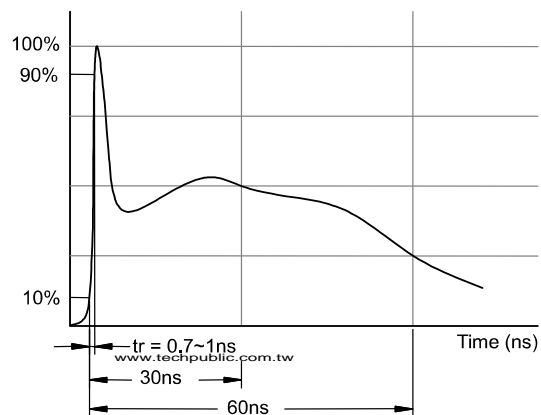


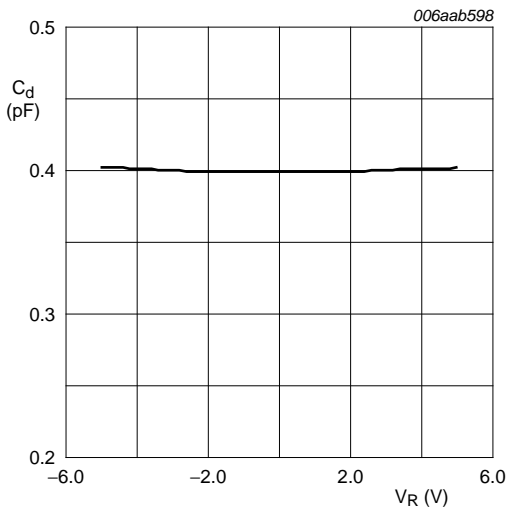
Fig 2. ESD pulse waveform according to IEC 61000-4-2

Characteristics

T_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Per device						
V _{RWM}	reverse standoff voltage		-	-	5.5	V
I _{RM}	reverse leakage current	V _{RWM} = 5 V	-	1	100	nA
V _{BR}	breakdown voltage	I _R = 1 mA	6	8	10	V
C _d	diode capacitance	f = 1 MHz; V _R = 0 V	-	0.4	0.55	pF
V _{CL}	clamping voltage	[1]				
		I _{PP} = 1 A	-	-	11	V
		I _{PP} = 2.5 A	-	-	15	V
r _{dif}	differential resistance	I _R = 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_{amb} = 25 °C

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

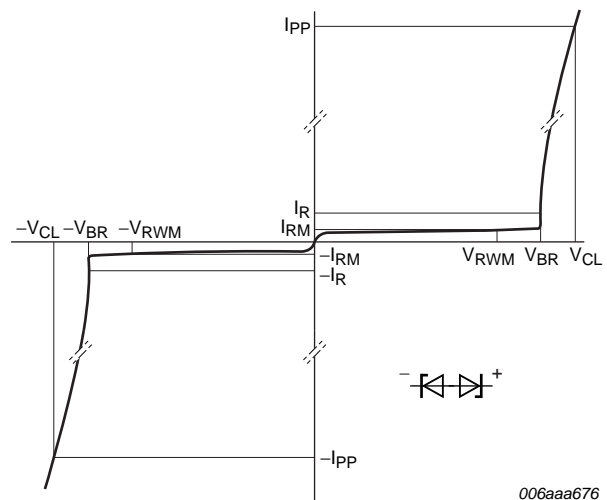


Fig 4. V-I characteristics for a bidirectional ESD protection diode

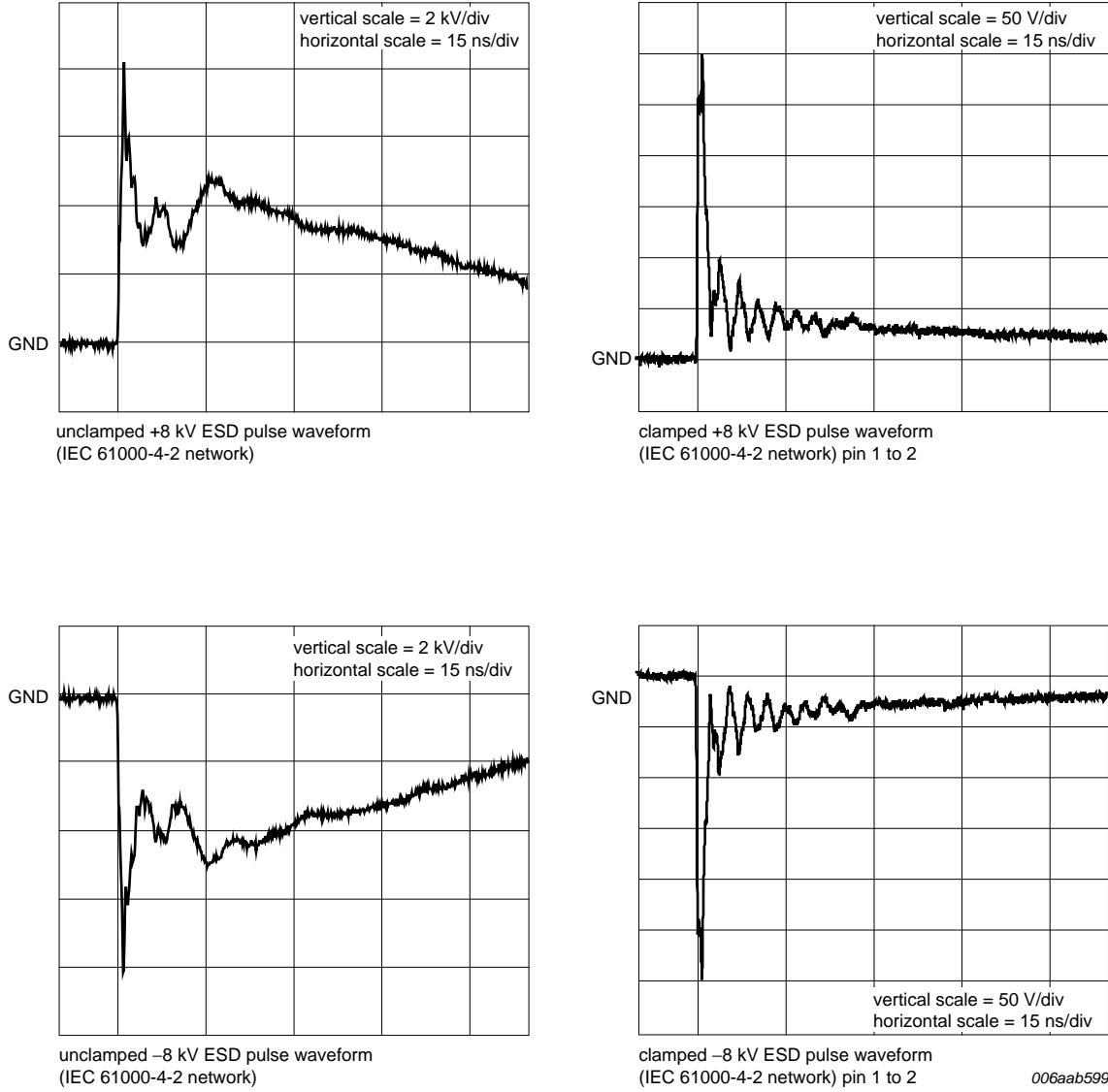
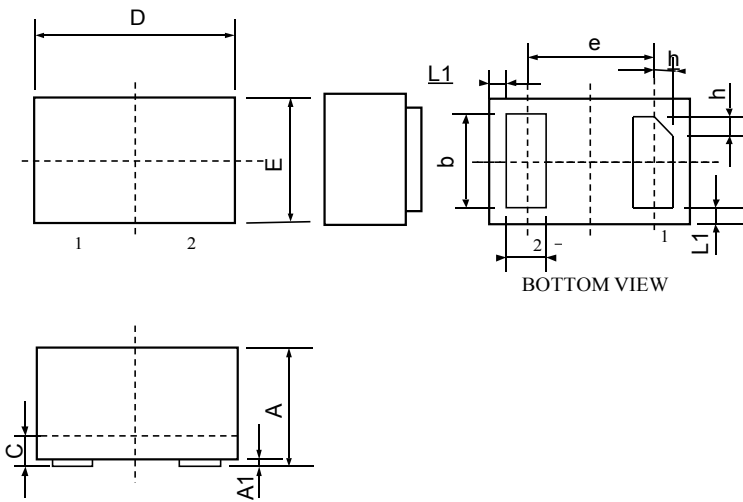


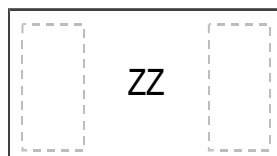
Fig 5. ESD clamping test setup and waveforms

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
UMW PESD5V0F1BL	SOD-882	10000	Tapeandreeel