

EVVOSEMI[®]

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

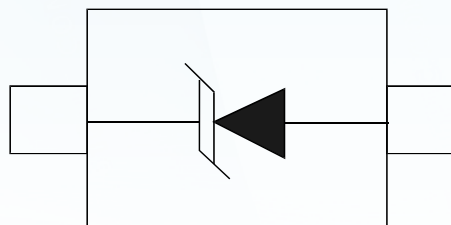
Product Specification

▶ Domestic	Part Number	PESD12VS1UA
▶ Overseas	Part Number	PESD12VS1UA
▶ Equivalent	Part Number	PESD12VS1UA

EV is the abbreviation of name EVVO

Features

- Transient Voltage Suppression (TVS) protection of one line
- Max. peak pulse power: $P_{PP} = 890\text{ W}$
- Low clamping voltage: $V_{CL} = 19\text{ V}$
- Low leakage current: $I_{RM} = 300\text{ nA}$
- ESD protection up to 30 kV
- IEC 61000-4-2; level 4 (ESD)
- IEC 61000-4-5 (surge); $I_{PP} = 47\text{ A}$



Applications

- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Communication systems
- Portable electronics
- Medical and industrial equipment

Mechanical Data

- SOD-323 package
- Molding compound flammability rating: UL94V-0
- Packaging: Tape and Reel
- RoHS/WEEE Compliant

Quick reference data

Table 2. Quick reference data
 $T_{amb} = 25\text{ °C}$ unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{RWM}	reverse standoff voltage		-	-	12	V
C_d	diode capacitance	$f = 1\text{ MHz}; V_R = 0\text{ V}$	-	160	180	pF

Limiting values

Limiting values

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

Symbol	Parameter	Conditions		Min	Max	Unit
P _{PP}	peak pulse power	t _p = 8/20 μs	[1][2]	-	600	W
I _{PP}	peak pulse current	t _p = 8/20 μs	[1][2]	-	22.5	A

Limiting values ...continued

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

Symbol	Parameter	Conditions		Min	Max	Unit
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	[3]	-	360	mW
			[4]	-	500	mW
T _j	junction temperature			-	150	°C
T _{amb}	ambient temperature			-55	+150	°C
T _{stg}	storage temperature			-65	+150	°C

- [1] Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.
- [2] Soldering point of cathode tab.
- [3] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.
- [4] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm².

ESD maximum ratings

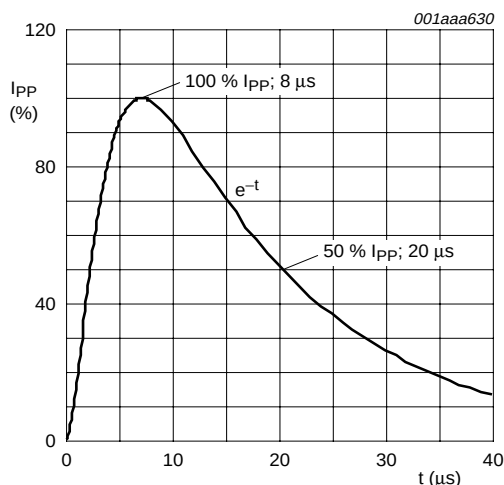
T_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions		Min	Max	Unit
V _{ESD}	electrostatic discharge voltage	IEC 61000-4-2 (contact discharge)	[1]	-	30	kV
		machine model		-	400	V

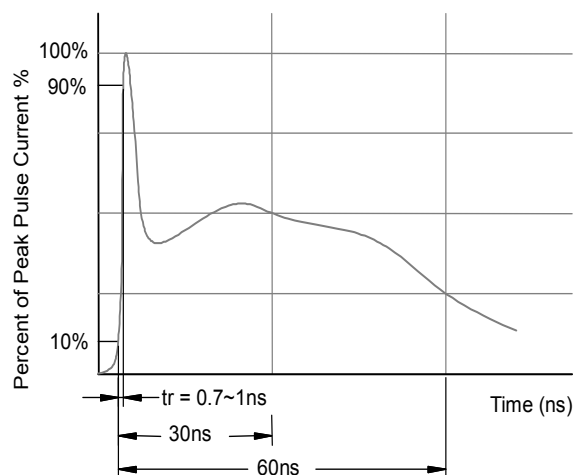
- [1] Device stressed with ten non-repetitive ESD pulses.

ESD standards compliance

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



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



ESD pulse waveform according to IEC 61000-4-2

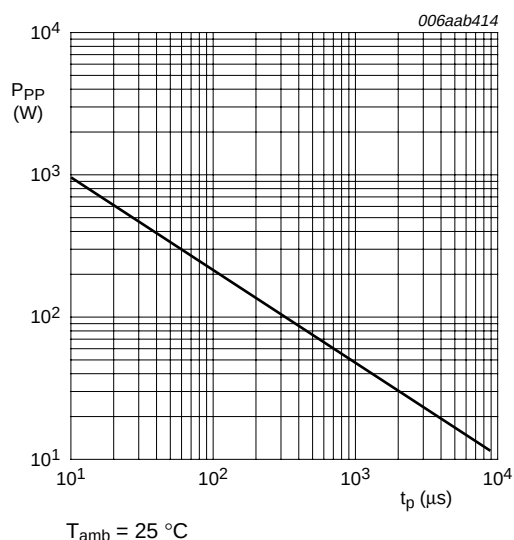
Characteristics

Characteristics

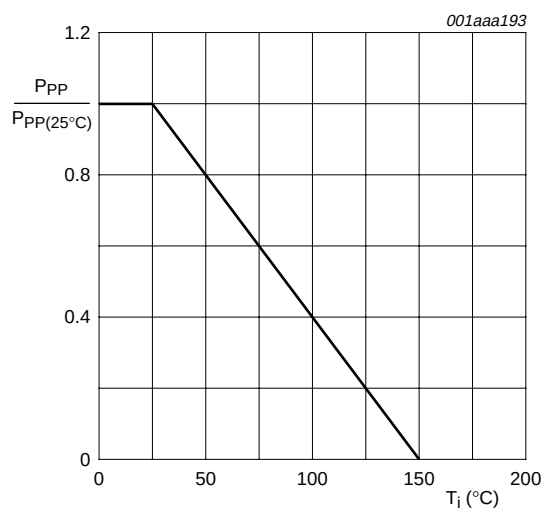
$T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{RWM}	reverse standoff voltage		-	-	12	V
I_{RM}	reverse leakage current	$V_{RWM} = 12\text{ V}$	-	<1	0.1	μA
V_{BR}	breakdown voltage	$I_R = 5\text{ mA}$	13.3	14.5	17.75	V
C_d	diode capacitance	$f = 1\text{ MHz};$ $V_R = 0\text{ V}$	-	160	180	pF
V_{CL}	clamping voltage	$I_{PP} = 47\text{ A}$	[1]	-	27	V
		$I_{PP} = 25\text{ A}$	-	-	23.5	V
		$I_{PP} = 5\text{ A}$	-	-	19	V
r_{dif}	differential resistance	$I_R = 5\text{ mA}$	-	2	100	Ω

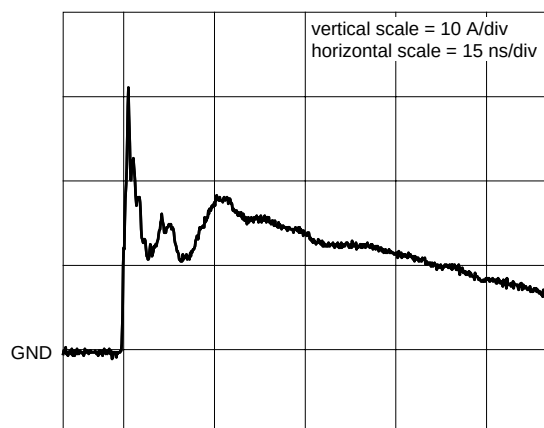
[1] Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.



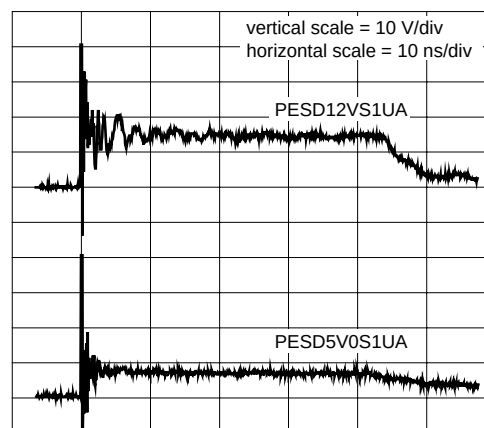
Peak pulse power as a function of exponential pulse duration; typical values



Relative variation of peak pulse power as a function of junction temperature; typical values

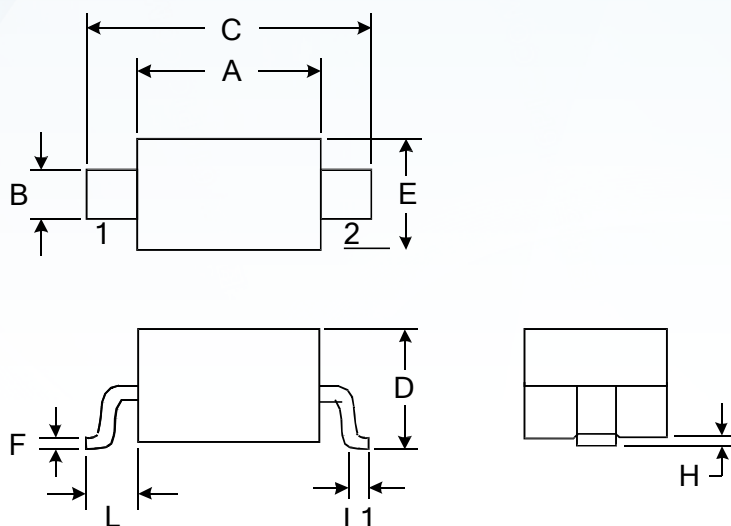


unclamped +8 kV ESD pulse waveform
(IEC 61000-4-2 network)



clamped +8 kV ESD pulse waveform
(IEC 61000-4-2 network)

Outline Drawing – SOD-323



DIMENSIONS				
SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	1.600	1.800	0.063	0.071
B	0.250	0.350	0.010	0.014
C	2.500	2.700	0.098	0.106
D		1.000		0.039
E	1.200	1.400	0.047	0.055
F	0.080	0.150	0.003	0.006
L	0.475 REF		0.019REF	
L1	0.250	0.400	0.010	0.016
H	0.000	0.100	0.000	0.004

Marking



Ordering information

Order code	Package	Baseqty	Deliverymode
PESD12VS1UA	SOD-323	3000	Tape and reel

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