

➤ General Description

The PAE3301D3R is a 3.3V bi-directional TVS diode, utilizing leading monolithic silicon technology to provide fast re-sponse time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. The PAE3301D3R complies with the IEC 61000-4-2(ESD) with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. The small size and high ESD surge protection make PAE3301D3R an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

➤ Feature

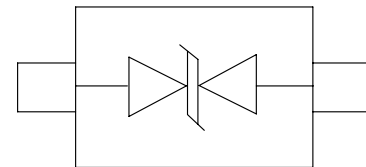
- 2-pin lead-less package
- Junction capacitance (Max value: 100pF)
- Peak Pulse current (8/20 μs) MAX : 25A
- IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- Low leakage current
- Working voltages:3.3V
- RoHS Compliant

➤ SOD-323



➤ Mechanical Characteristics

- Package: SOD-323
- Lead Finish:Matte Tin
- Case Material: “Green” Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Tape Reel :3000pcs



Circuit diagram

➤ Application

- LED Lighting Modules
- RS232/RS485
- CAN and LIN Bus
- Portable Instrumentation
- General Purpose I/O
- Automotive application

➤ **Maximum Ratings (T_A=25°C Unless otherwise specified)**

Parameters	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	PPP	375	W
Peak Pulse Current (8/20μs)	IPP	25	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±30 ±30	KV
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

➤ **Electrical Characteristics (T_A=25°C Unless otherwise specified)**

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	VRWM				3.3	V
Reverse Breakdown Voltage	VBR	IR = 1mA	5		8	V
Reverse Leakage Current	IR	VR = 3.3V			0.5	uA
Clamping voltage	VC	IPP = 1A,TP=8/20us			10	V
Clamping voltage	VC	IPP = 25A,TP=8/20us			15	V
Junction capacitance	Cj	VR =0V,f =1MHz			100	pF

➤ Typical Characteristics

FIG1: Power rating derating curve

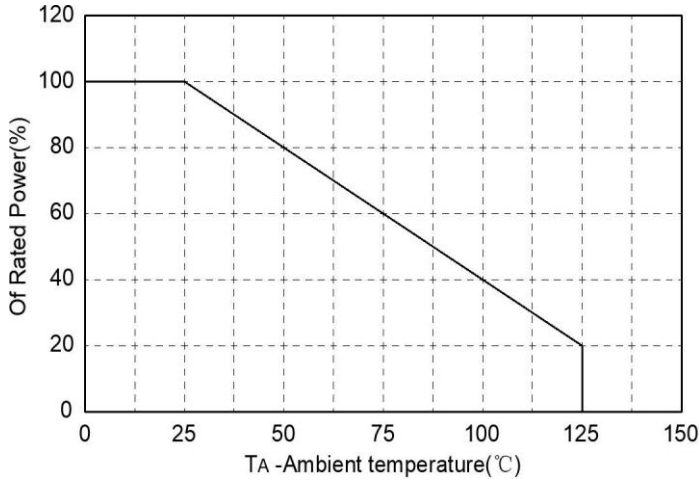


FIG2: pulse Waveform

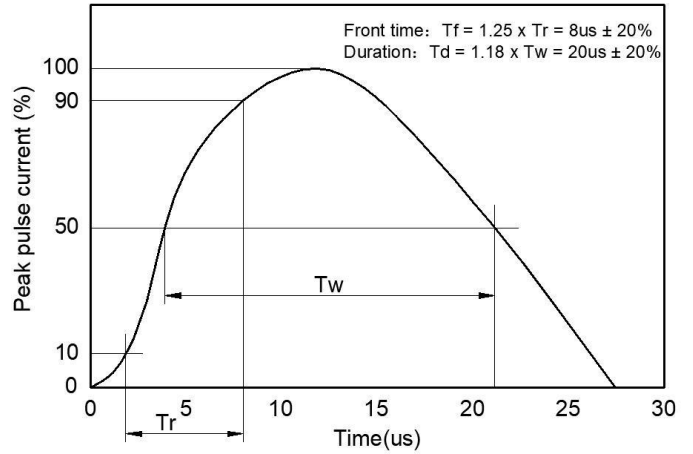


FIG3: Capacitance between terminals characteristics

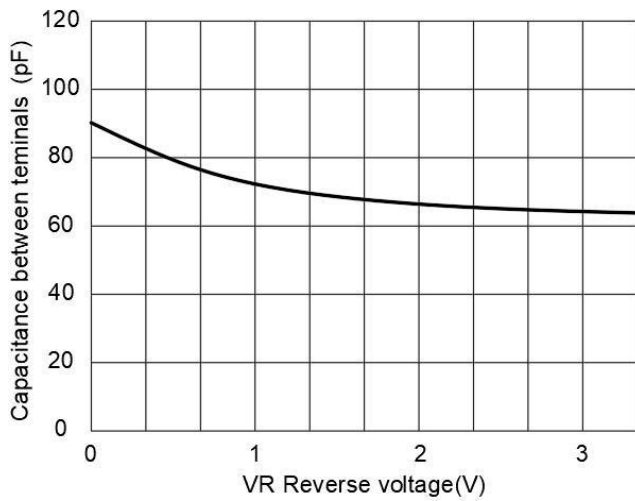
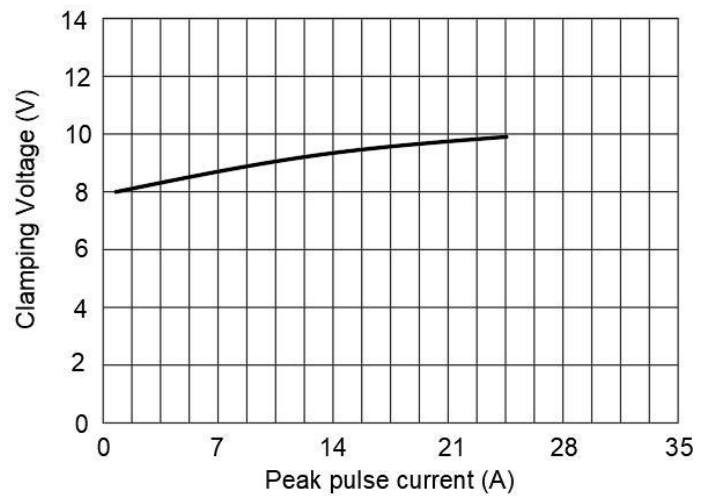
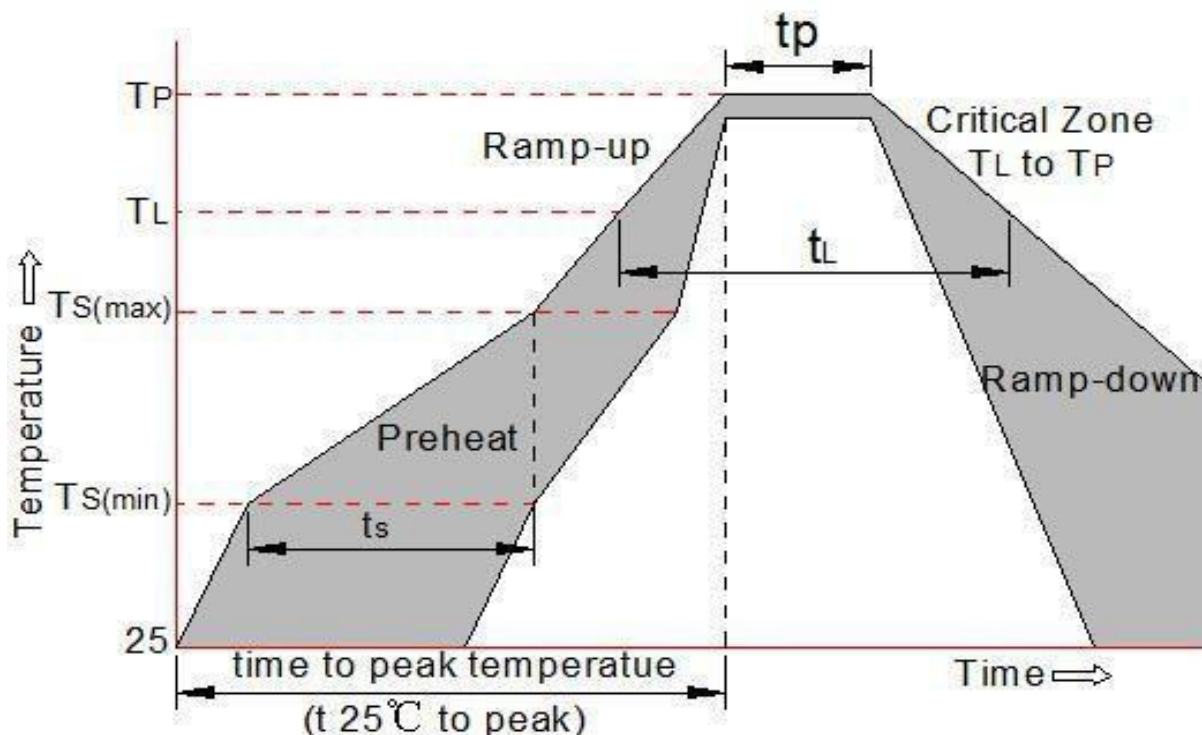


FIG4: Clamping Voltage vs. Peak Pulse Current

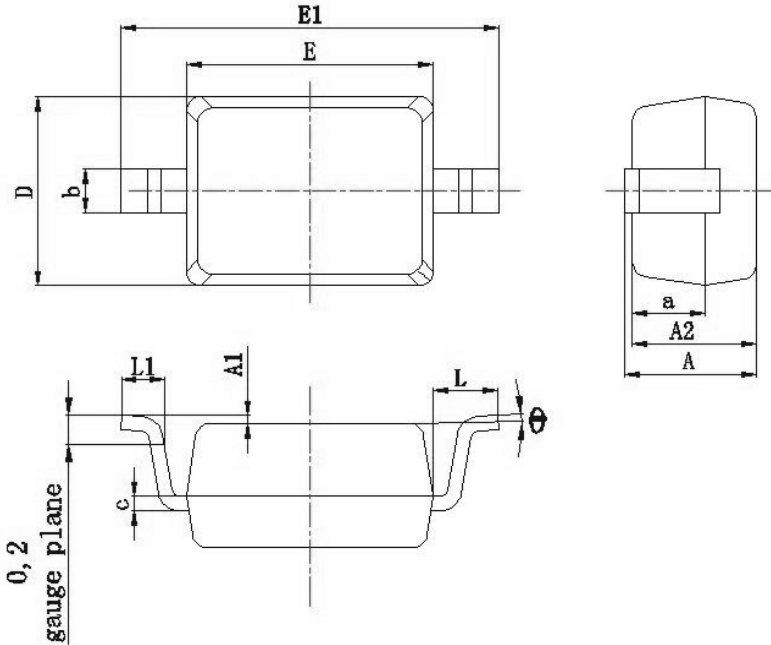


➤ Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C

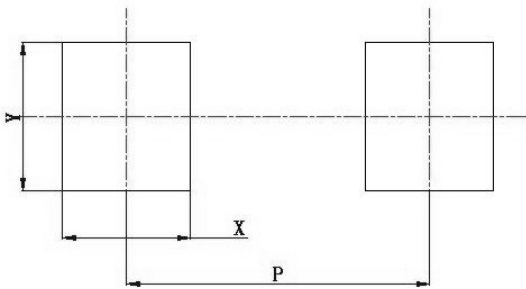


➤ Package Information (SOD-323)



Symbol	Millimeters	
	Min.	Max.
A	0.80	1.15
A1	0	0.1
A2	0.8	1.0
a	(0.5)	
D	1.15	1.45
E	1.60	1.85
E1	2.5	2.8
b	0.25	0.40
c	0.08	0.15
L	(0.475)	
L1	0.25	0.45
θ	0°	8°

Suggested Land Pattern



Symbol	Dimension in Millimeters
	Typ.
X	(0.7)
Y	(0.7)
P	(2.3)

➤ Ordering Information

Part Number	Description	Quantity
PAE3301D3R	SOD-323 Reel	3000 pcs

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