PAE33DC

1-Line Bi-directional TVS Diode

➢ General Description

The PAE33DC 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 PAE33DC complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. The small size and high ESD surge protection make PAE33DC an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

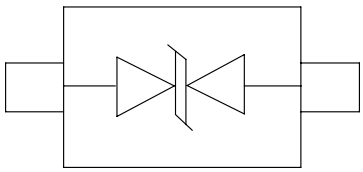
➢ Feature

- Protects one data or power line
- Ultra low leakage: nA level
- Operating voltage: 3.3V
- Low clamping voltage
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning) 25A (8/20μs)
- RoHS Compliant

➢ Application

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players
- Keypads, Side Keys, LCD Displays

➢ SOD-323



Circuit diagram

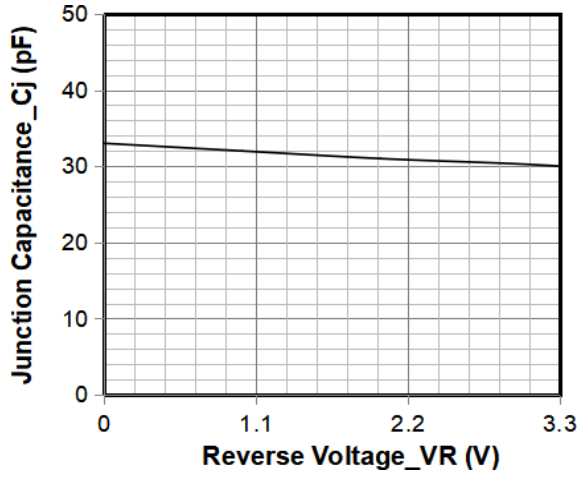
➢ Maximum Ratings (T_A=25°C Unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	300	W
Peak Pulse Current (8/20μs)	I_{PP}	25	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Temperature Range	T_J	−55 to +125	℃
Storage Temperature Range	Tstg	−55 to +150	℃

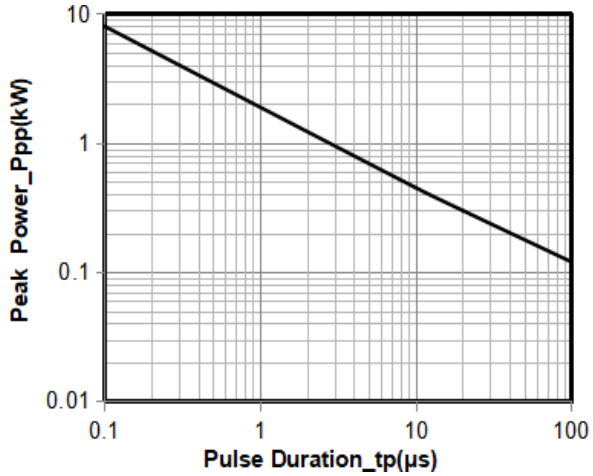
➢ Electrical Characteristics (T_A=25°C Unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			3.3	V	
Breakdown Voltage	V_{BR}	3.4			V	I_T = 1mA
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 3.3V
Clamping Voltage	V_C		5	6	V	I_{PP} = 1A
Clamping Voltage	V_C		10	12	V	I_{PP} = 25A
Junction Capacitance	C_J		33		pF	VR = 0V, f = 1MHz

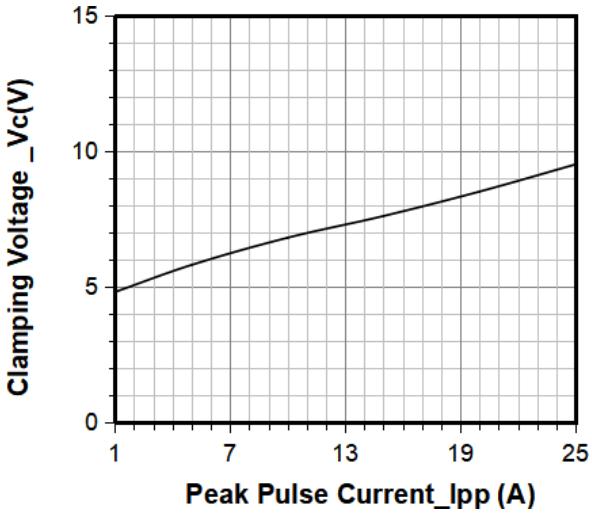
➢ Typical Characteristics



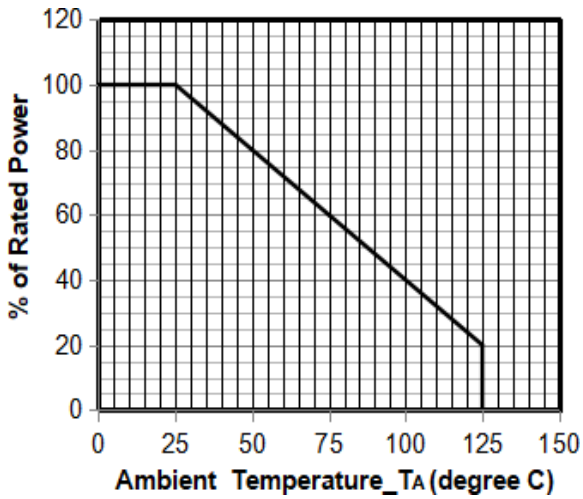
Junction Capacitance vs. Reverse Voltage



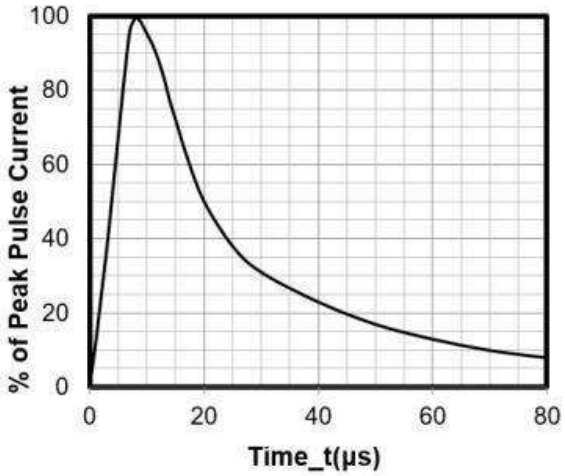
Peak Pulse Power vs. Pulse Time



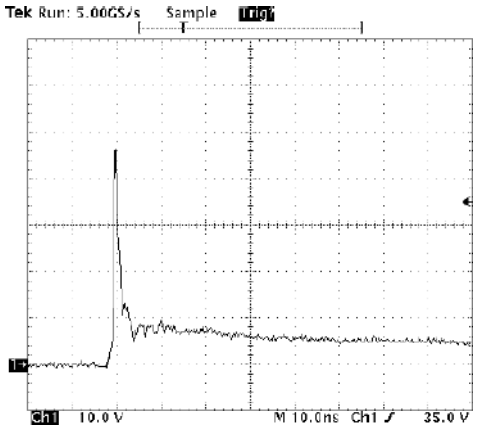
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform

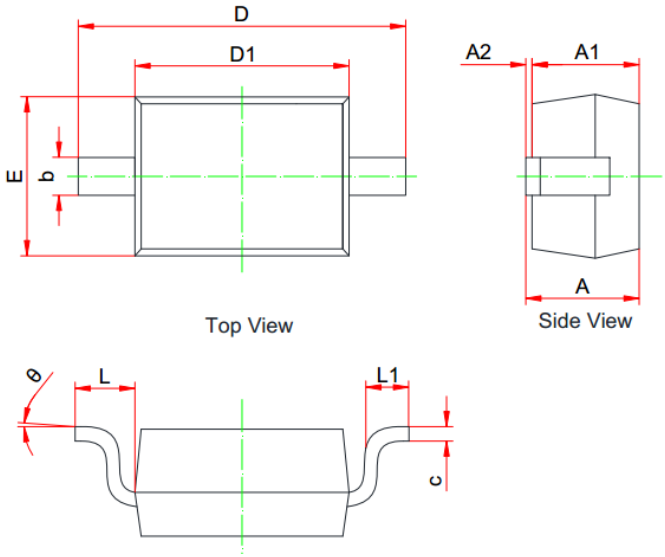


Note：Data is taken with a 10x attenuator

ESD Clamping Voltage

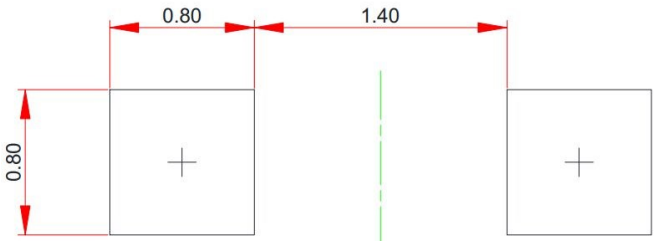
8 kV Contact per IEC61000−4−2

➢ Package Information (SOD-323)



	MILLIMETERS		
	MIN	NOM	MAX
A	0.800	- -	1.100
A1	0.800	- -	0.900
A2	0.000	- -	0.100
b	0.250	- -	0.400
c	0.080	- -	0.177
D1	1.600	1.700	1.800
D	2.300	- -	2.800
E	1.150	- -	1.400
L	0.475REF		
L1	0.100	- -	0.500
Θ	0°	- -	8°

Suggested Land Pattern



Unit：mm

➢ Ordering Information

Part Number	Description	Quantity
PAE33DC	SOD-323 Reel	3000 pcs

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