

➤ General Description

The PAExxxD3RA is ultra low capacitance transient voltage suppressor arrays, designed to protect applications such as portable electronics and SMART phones. This series is available in both unidirectional and bidirectional configurations and is rated at 350 Watts for an 8/20 μ s waveform.

The PAExxxD3RA meets IEC 61000 - 4 - 2 (ESD) and IEC 61000-4-4 (EFT) requirements. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This series offers an ultra low capacitance and low leakage current in a miniature SOD-323 package.

➤ Feature

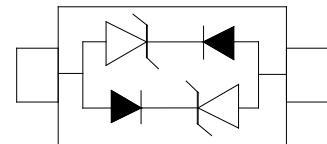
- 350 Watts Peak Pulse Power per Line (8 x 20 us Waveform)
- Replacement for MLV (0805)
- Protects One Power or I/O Port
- Low Clamping Voltage
- Available in Multiple Voltages:3.3V,5.0V,8.0V,12V,15V,24V
- Ultra Low Capacitance: 0.8pF (Typical)
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- ROHS compliant

➤ SOD-323



➤ Application

- Hand-Held Portable Applications
- Networking and Telecom(Ethernet 10/100/1000 Base T)
- USB Interface
- Automotive Electronics
- Serial and Parallel Ports
- Notebooks, Desktops, Servers



➤ Protection solution to meet

- IEC61000-4-2 (ESD) \pm 30kV (air), \pm 30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Surge) 25A (8/20us)

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20µs waveform)	P _{PPP}	350	Watts
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Lead Soldering Temperature	T _L	260 (10 sec.)	°C
Operating Temperature Range	T _I	-55 ~ 150	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

*Other voltages may be available upon request.

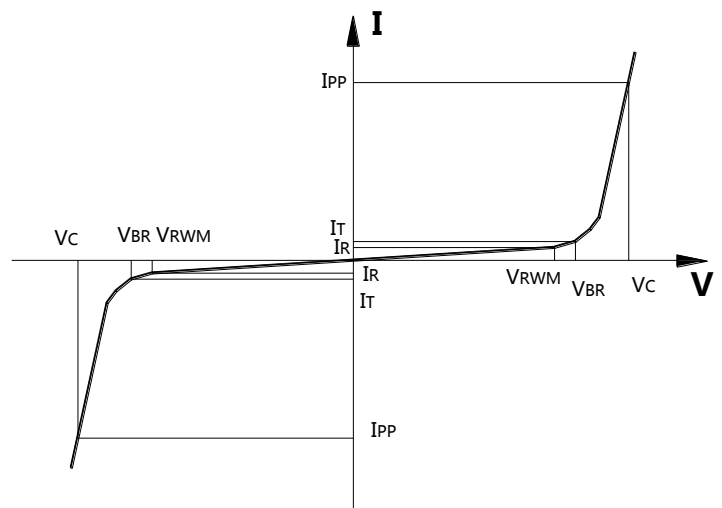
1. Non-repetitive current pulse, per Figure 1.

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

Device	V _{RWM} (V)	I _R @ V _{RWM} (µA)	V _{BR} @ 1 mA (Volts)	V _{Cl} @ 1 A (V)	I _{pp} @8/20µs (Amps)	Capacitance @ V _R = 0 V, 1 MHz (pF)		P _{PK} (W)
			Min	Max	Typ	Max		
PAE3V3D3RA	3.3	5	4	7.5	20	0.8	1.5	350
PAE5V0D3RA	5	1	6	9.8	17	0.8	1.5	350
PAE8V0D3RA	8	1	8.5	13.6	15	0.8	1.5	350
PAE12VD3RA	12	1	13.3	17.8	11	0.8	1.5	350
PAE15VD3RA	15	1	16.7	23.5	10	0.8	1.5	350
PAE24VD3RA	24	1	26.7	38	6	0.8	1.5	350

Junction capacitance is measured in VR=0V,F=1MHz

Symbol	Parameter
V _{RWM}	Working Peak Reverse Voltage
V _{BR}	Breakdown Voltage @ I _T
V _C	Clamping Voltage @ I _{PP}
I _T	Test Current
I _{RM}	Leakage current at V _{RWM}
I _{PP}	Peak pulse current
C _O	Off-state Capacitance
C _J	Junction Capacitance

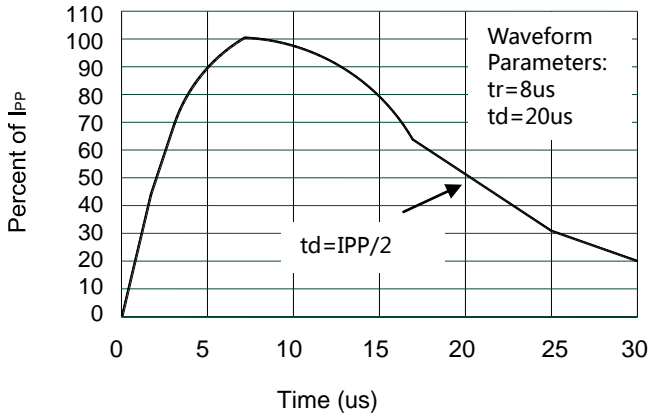




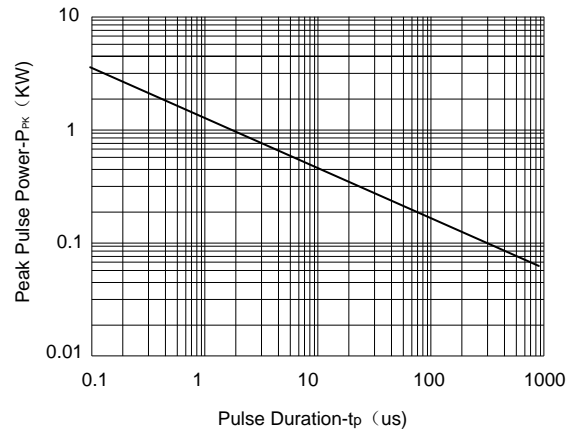
PAE3V3D3RA THRU PAE24VD3RA

Bidirectional Ultralow Capacitance TVS ARRAY

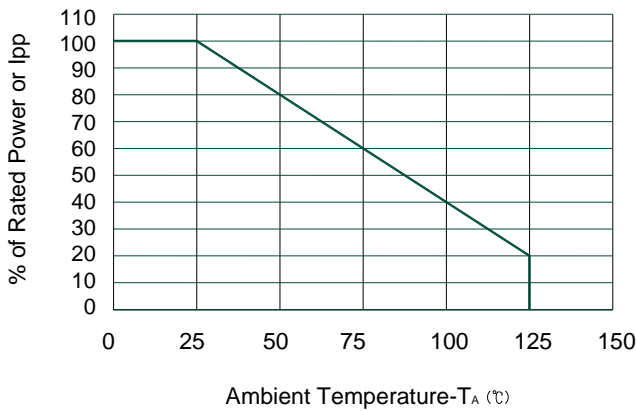
➤ Typical Characteristics



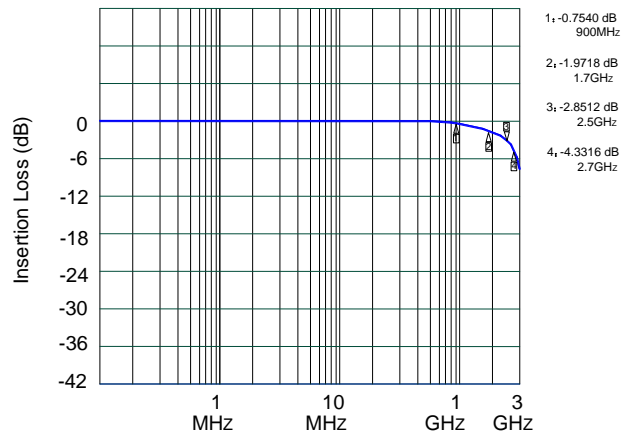
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve



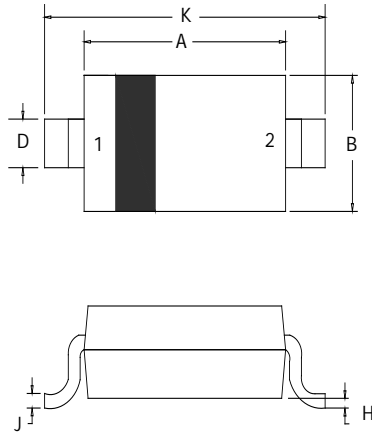
Insertion Loss S21

➤ Ordering Information

Part Number	Description	Quantity
PAE3V3D3RA~PAE24VD3RA	SOD-323 Reel	3000 pcs

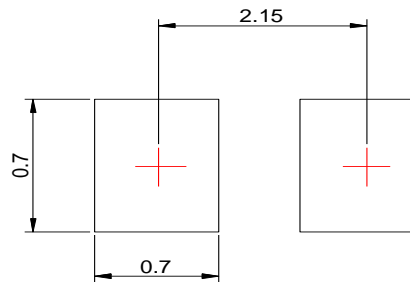
➤ Package Information (SOD-323)

Case Material: Molded Plastic. UL Flammability

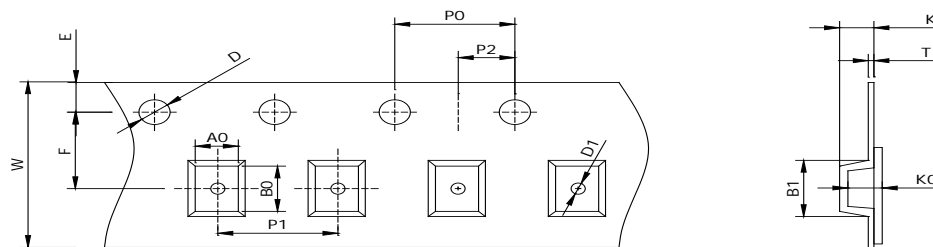


Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	1.60	1.80	0.063	0.071
B	1.2	1.40	0.047	0.055
C	0.80	0.90	0.031	0.035
D	0.25	0.35	0.010	0.014
E	0.15REF		0.006REF	
H	0	0.10	0	0.004
J	0.08	0.15	0.003	0.006
K	2.50	2.70	0.098	0.106

Recommended Pad outline



SOD-323 Reel Dim



Package	Chip Size	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
SOD-323	2.60×1.40×1.05	3.30×1.50×1.25	8mm	178mm(7")	3000	4mm	4mm
D0	D1	E	F	K	T	W	
1.5mm	0.5mm	1.75mm	3.5mm	1.0mm	0.2mm	8mm	



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