

➤ General Description

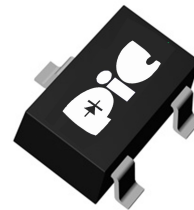
The PAE5VBLB has a typical capacitance of only 0.45pF (pin 1 to 2). This means it can be used on circuits operating in excess of 5GHz with minimal signal attenuation. It may be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge). Each device can be configured to protect 1 bidirectional line or two unidirectional lines. The combination of small size, low capacitance, and high level of ESD protection makes them a flexible solution for applications such as HDMI, MDDI, antenna circuits, Automatic Test Equipment, USB 2.0/3.0, and Infiniband circuits.

It has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events),and EFT (electrical fast transients).

➤ Feature

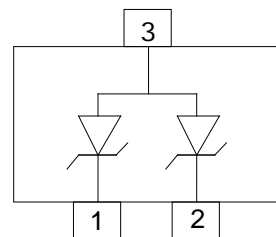
- Small package for use in portable electronics
- Protects one bidirectional line or two unidirectional lines
- Low leakage current
- Low clamping voltage
- Response Time is $< 1\text{ ns}$
- Working voltages : 5V
- Solid-state silicon avalanche technology
- Device Meets MSL 1 Requirements
- ROHS compliant

➤ SOT-523



➤ Application

- Antenna circuits(RF)
- HDMI,USB2.0/3.0,HDDI
- Data lines
- Industrial Controls
- Cellular handsets AND accessories
- Portable instrumentation
- Peripherals
- Notebook Computers
- Set-Top Box
- Projection TV



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

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	PPPP	125	Watts
ESD Rating per IEC61000-4-2:	Contact	8	KV
	Air	15	
Lead Soldering Temperature	TL	260 (10 sec.)	°C
Operating Temperature Range	TJ	-55 ~ 150	°C
Storage Temperature Range	TSTG	-55 ~ 150	°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.

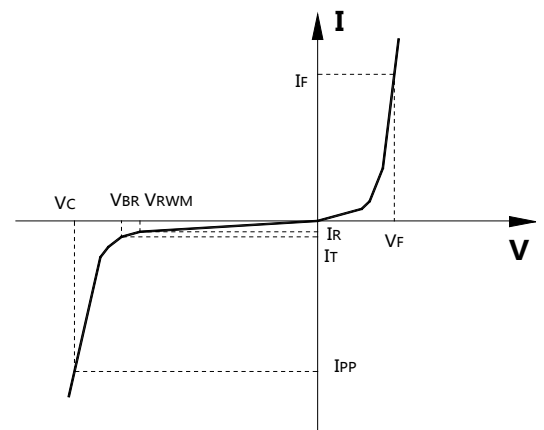
1. Non-repetitive current pulse, per Figure 1.

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

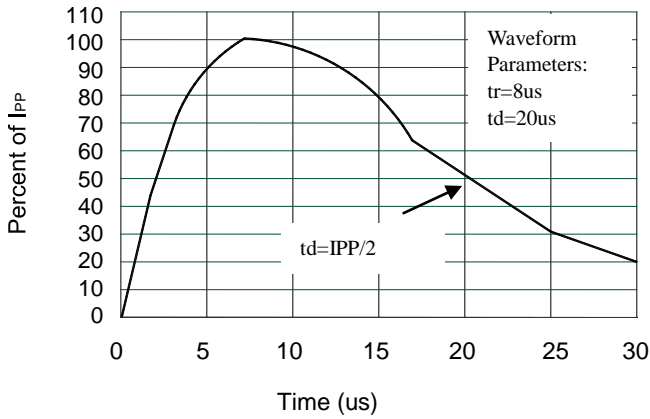
Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
VRWM	Reverse Working Voltage	Any I/O to Ground			5.0	V
VBR	Reverse Breakdown Voltage	IT = 0.1mA, Any I/O to Ground	6.0			V
IR	Reverse Leakage Current	VRWM = 5V, Any I/O to Ground			1	μA
VF	Diode Forward Voltage	IF = 15mA		0.85	1.25	V
VC	Clamping Voltage	Ipp = 1A, tp = 8/20μs, any I/O pin to Ground			13	V
		Ipp = 3A, tp = 8/20μs, any I/O pin to Ground			28	V
CJ	Junction Capacitance	VR = 0V, f = 1MHz, between I/O pins		0.45	0.6	pF
		VR = 0V, f = 1MHz, any I/O pin to Ground		0.9	1.2	pF

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

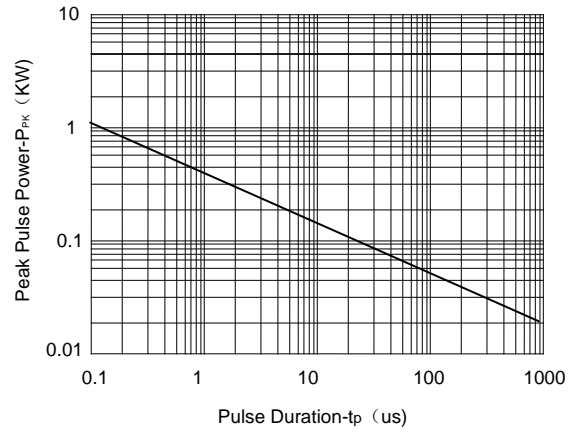
Symbol	Parameter
VRWM	Working Peak Reverse Voltage
VBR	Breakdown Voltage @ IT
VC	Clamping Voltage @ IPP
IT	Test Current
IRM	Leakage current at VRWM
IPP	Peak pulse current
CO	Off-state Capacitance
CJ	Junction Capacitance



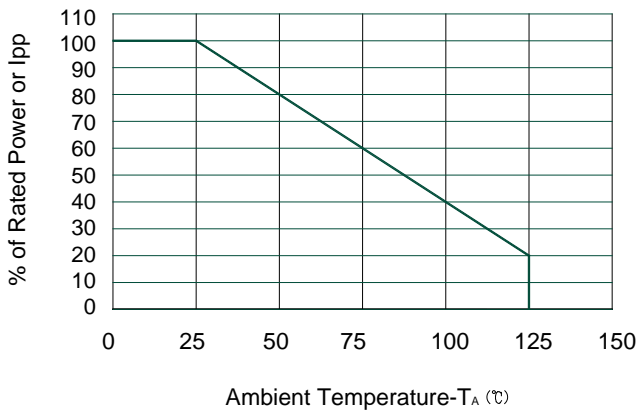
➤ Typical Characteristics



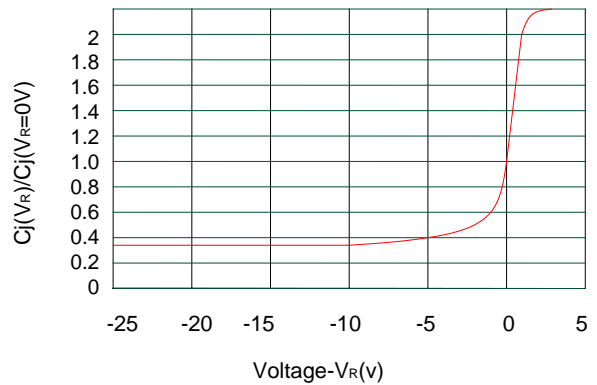
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time

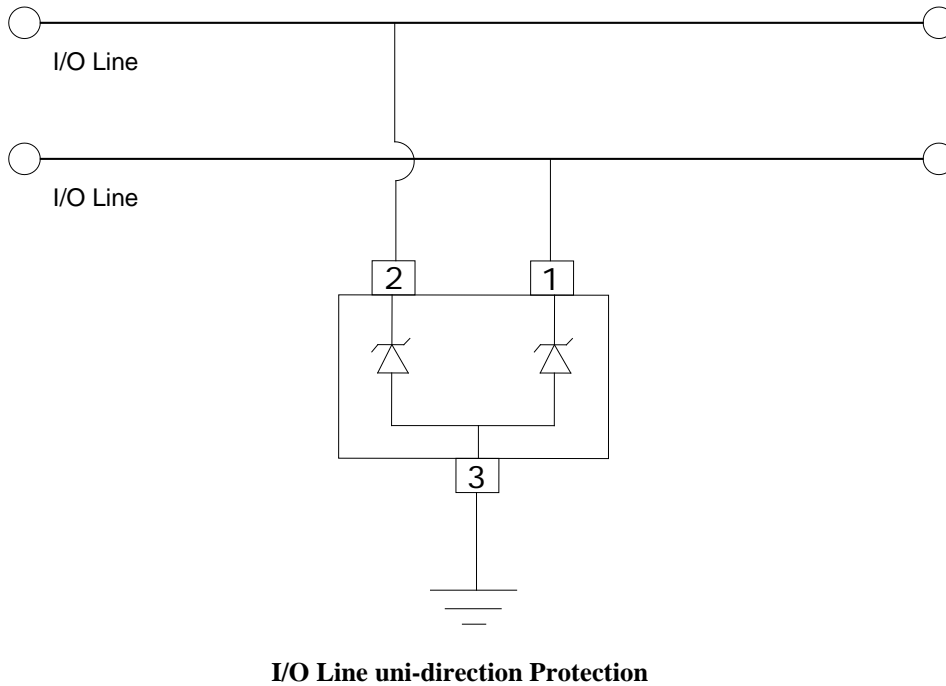
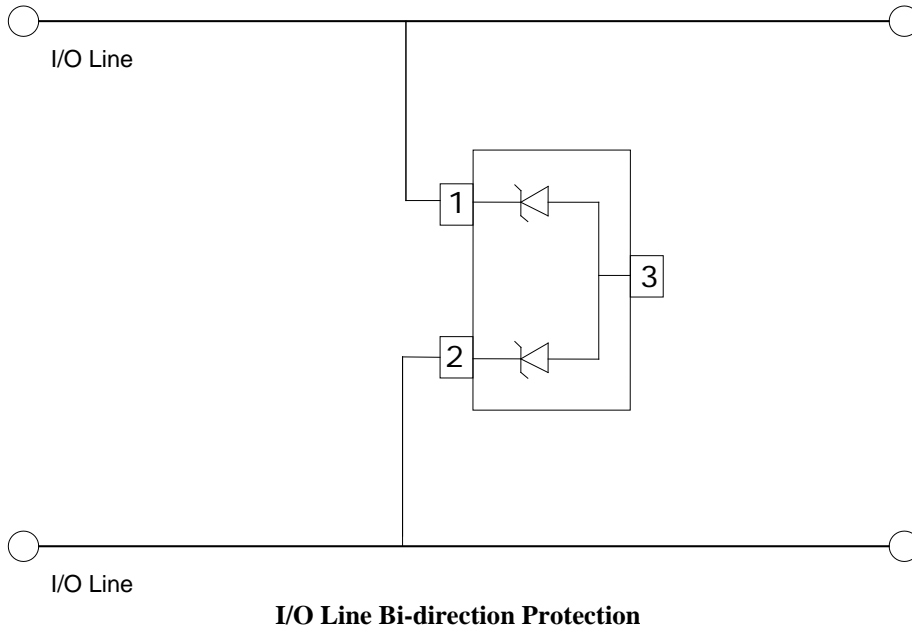


Power Derating Curve



Junction Capacitance vs. Reverse Voltage

➤ Typical applications



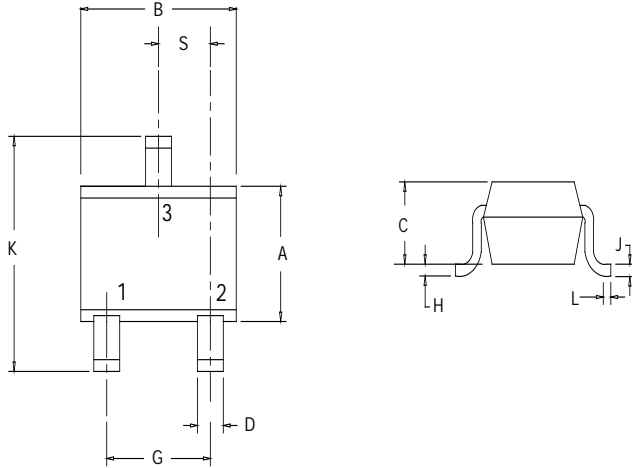
➤ Ordering Information

Part Number	Description	Quantity
PAE5VBLB	SOT-523 Reel	3000 pcs

➤ Package Information (SOT-523)

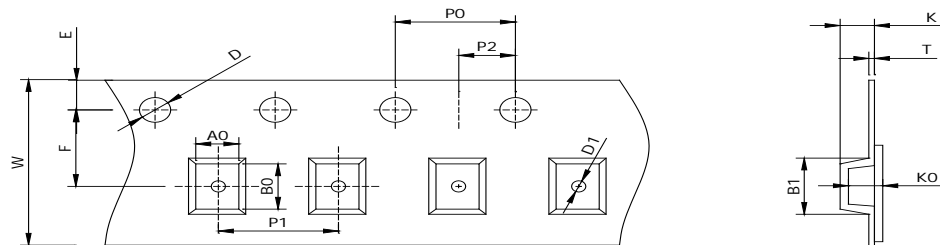
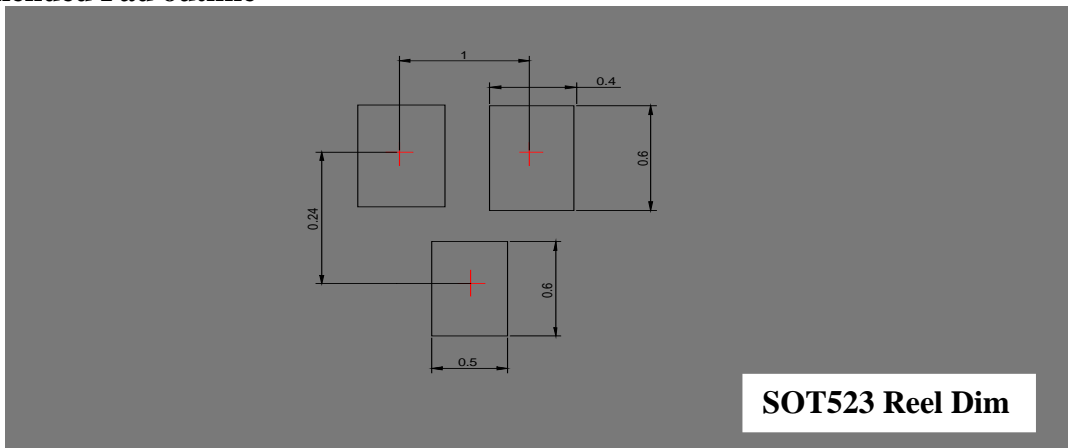
Mechanical Data

Case Material: Molded Plastic. UL Flammability



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	0.70	0.90	0.028	0.035
B	1.50	1.70	0.059	0.067
C	0.70	0.80	0.028	0.031
D	0.15	0.25	0.006	0.010
G	0.90	1.10	0.035	0.043
H	0.10		0.004	
J	0.10	0.20	0.004	0.008
K	1.45	1.75	0.057	0.069
L	0.26	0.46	0.010	0.018
S	0.50TYP		0.020TYP	

Recommended Pad outline



Package	Chip Size	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
SOT523	1.70×1.75×1.00	1.80×1.85×1.10	8mm	178mm(7")	3000	4mm	4mm
D0	D1	E	F	K	T	W	
1.5mm	1.0mm	1.75mm	3.5mm	1.05mm	0.2mm	8mm	

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