

➤ General Description

PAE2538B are designed by bi-direction TVS diode, to protect high speed data interfaces. This product 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).The TVS diode prevents over-voltage on the power line, protecting any downstream components. The low capacitance configuration allows the user to protect high-speed data or transmission lines. This device is optimized for ESD protection of portable electronics. They 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).

➤ Feature

- Transient protection for high-speed data lines to
IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
IEC 61000-4-4 (EFT) 40A (5/50ns)
- Small package saves board space
- Protects up to four I/O lines & power line
- Low capacitance ($< 3\text{pF}$) for high-speed interfaces
- Low leakage current and clamping voltage
- Low operating voltage: 5.0V
- Solid-state silicon-avalanche technology

➤ FBP-02C



➤ Application

- USB 2.0 Power and Data Line Protection
- Monitors and Flat Panel Displays
- Digital Visual Interface (DVI)
- 10/100/1000 Ethernet
- Notebook Computer
- SIM Ports
- ATM Interface
- IEEE 1394 Firewire Ports Cellular
- Handsets & Accessories Portable
- Instrumentation
- Digital Cameras
- Video Graphics Cards

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

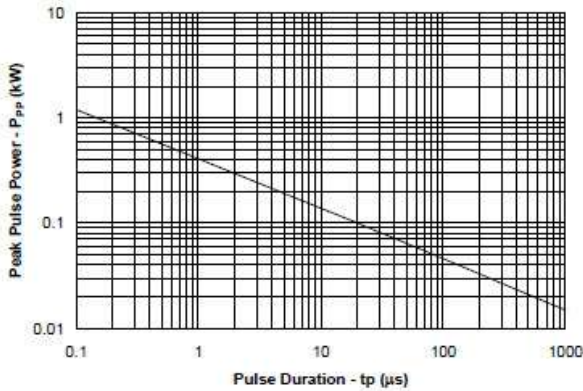
Parameter	Symbol	Typical	Unit
Peak Pulse Power (t _p = 8/20 μs)	P _{pk}	100	W
Maximum Peak Pulse Current (t _p = 8/20 μs)	I _{PP}	4	A
ESD per IEC 61000 – 4 – 2 (Air)	V _{PP}	±15	KV
ESD per IEC 61000 – 4 – 2 (Contact)	V _{PP}	±8	KV
Operating Junction Temperature	T _J	-55 ~ 125	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C
Lead Soldering Temperature	T _L	260 (10sec)	°C

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

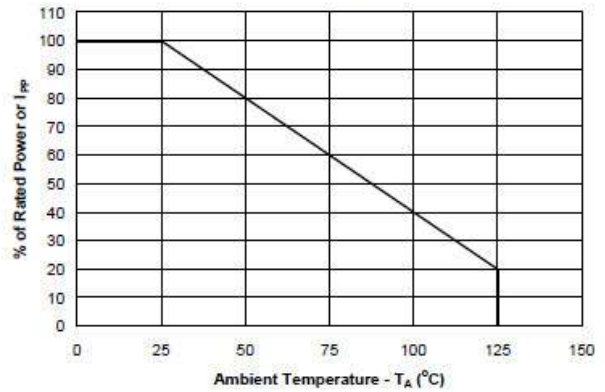
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Reverse Stand – Off Voltage	V _{RWM}	Pin 1 to 2 or Pin 2 to 1			5	V
Reverse Breakdown Voltage	V _{BR}	I _t = 1mA Pin 1 to 2 or Pin 2 to 1	6			V
Reverse Leakage Current	I _R	V _{RWM} = 5V , T=25K Pin 1 to 2 or Pin 2 to 1		0.5	1.0	μA
Clamping Voltage	V _C	I _{PP} = 1A , t _p = 8/20 μs Pin 1 to 2 or 2 to 1			13	V
Clamping Voltage	V _C	I _{PP} = 4A , t _p = 8/20 μs Pin 1 to 2 or 2 to 1			15	V
Junction Capacitance	C _j	V _R = 0V , f = 1MHz		2	3	pF

➤ Typical Characteristics

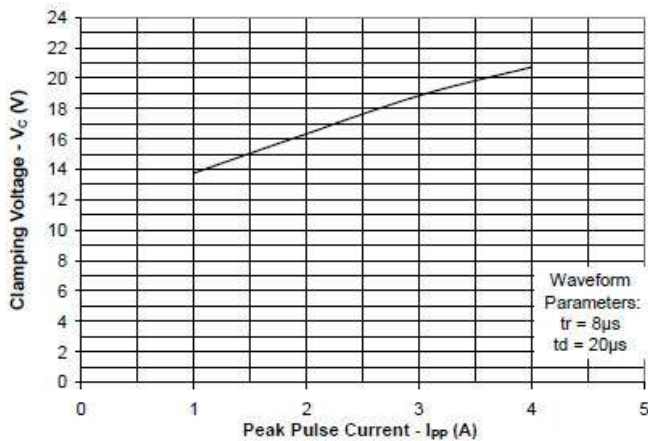
Non-Repetitive Peak Pulse Power vs. Pulse Time



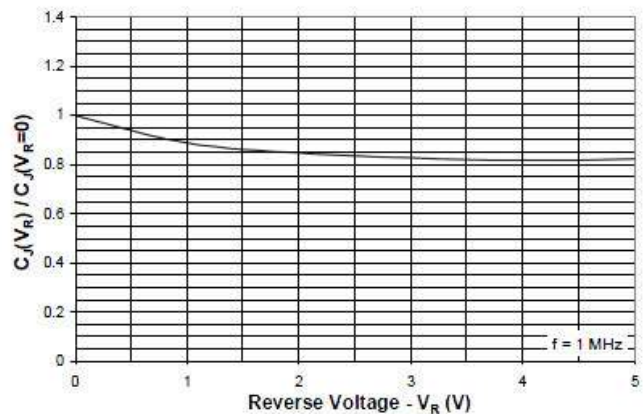
Power Derating Curve



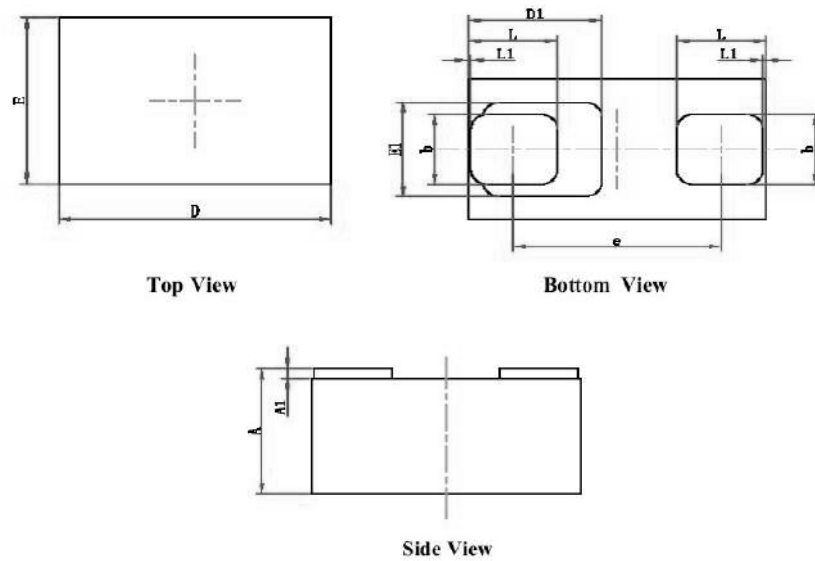
Clamping Voltage vs. Peak Pulse Current



Normalized Capacitance vs. Reverse Voltage



➤ Package Information (FBP-02C)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.070	0.000	0.003
D	0.95	1.050	0.037	0.011
E	0.550	0.650	0.022	0.026
D1	0.450REF		0.018REF	
E1	0.400REF		0.016REF	
b	0.275	0.325		0.013
e	0.675	0.725		0.029
L	0.275	0.325		0.013
L1	0.010REF		0.000REF	

➤ Ordering Information

Part Number	Description	Quantity
PAE2538B	FBP-02C Reel	10000 pcs

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