➢ General Description

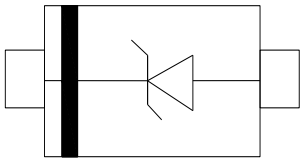
The PAExxVD03MF Series is designed with latest technology to protect voltage sensitive components from Surge. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to surge.

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

➢ Feature

- ●Peak Power Dissipation − 2000W (8 x 20 us Waveform)
- ●Stand-off Voltage: 5、7、12、15 V
- ●Protects I/O Port
- ●Low Clamping Voltage
- ●Low Leakage
- ●Response Time is < 1 ns
- ●Meets MSL 1 Requirements
- ●Solid-state silicon avalanche technology
- ●ESD Rating of above 16 kV per Human Body Model
- ●Lead Orientation in Tape: Cathode Lead to Sprocket Holes
- ●ROHS compliant

➢ SOD-323



➢ Application

- ●Power Line
- ●Serial and Parallel Ports
- ●Notebooks, Desktops, Servers
- ●Projection TV
- ●Cellular handsets and accessories
- ●Portable instrumentation
- ●Peripherals

➢ Protection solution to meet

- ●IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- ● IEC61000-4-4 (EFT) 40A (5/50ns)

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P_{PPP}	2000	Watts
ESD Rating per IEC61000-4-2： Contact Air		30 30	KV
Lead Soldering Temperature	T_L	260 (10 sec.)	℃
Operating Temperature Range	T_J	-55 ~ 150	℃
Storage Temperature Range	T_{STG}	-55 ~ 150	℃
Lead Solder Temperature − Maximum (10 Second Duration)	T_L	260	℃

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.

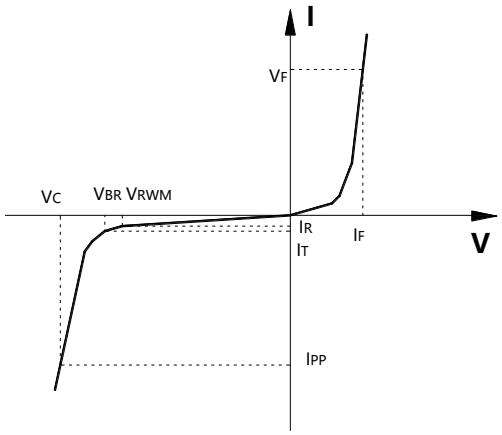
1. Non-repetitive current pulse, per Figure 1.

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

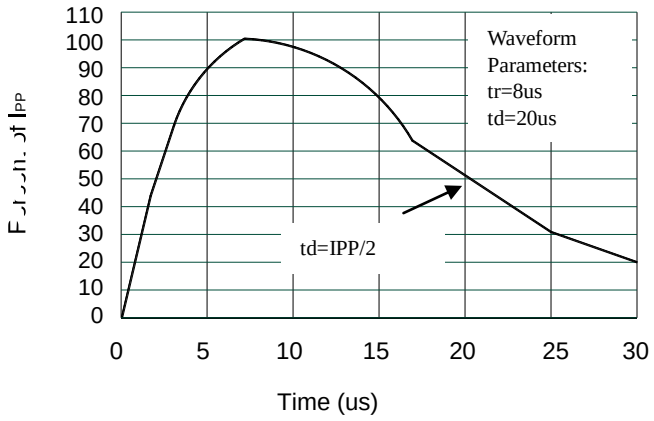
Device*	Mark	V_{RWM}	V_{BR} @ I_T (V)		I_T	I_R @ V_{RWM}	V_C@I_{PP}	I_{PP}(Max)	Capacitance (Typ) (nF)	
		(V)	Min	Max	(mA)	(uA)	(V)	(A)	Typ	Max
PAE5VD03MF	5H	5	6	7.8	1	1	15V@100A	130	1.1	1.5
PAE7VD03MF	7H	7	7.8	9.7	1	1	17V@100A	130	0.8	1.1
PAE12VD03MF	12H	12	13.0	17.0	1	1	30V@70A	80	0.4	0.6
PAE15VD03MF	15H	15	16.7	19.6	1	1	30V@50A	65	0.4	0.55

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

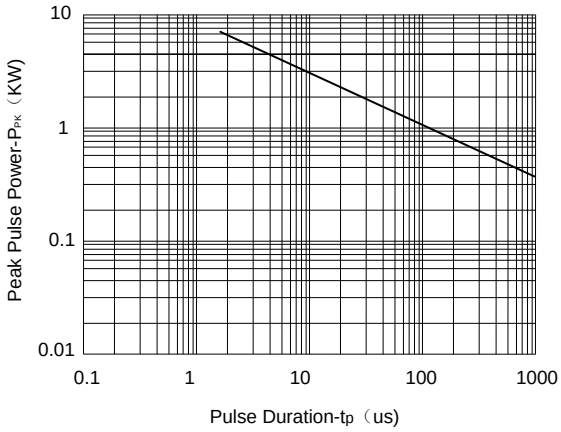
Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance



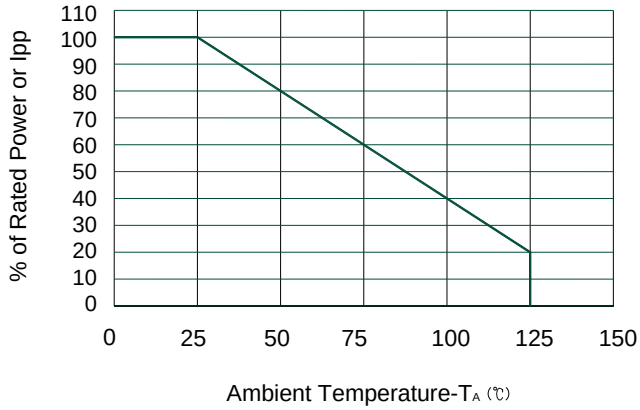
➢ Typical Characteristics



Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



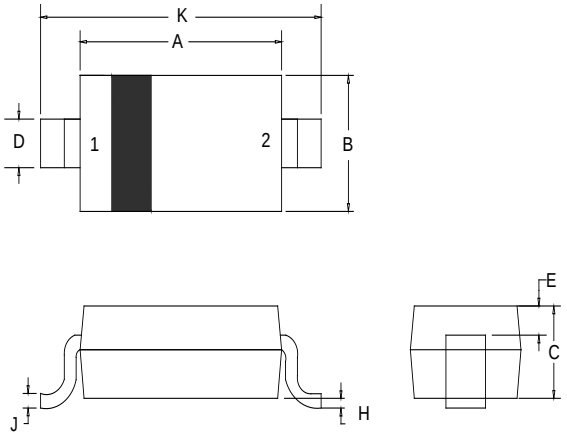
Power Derating Curve

➢ Ordering Information

Part Number	Description	Quantity
PAE5VD03MF~PAE15VD03MF	SOD-323 Reel	3000 pcs

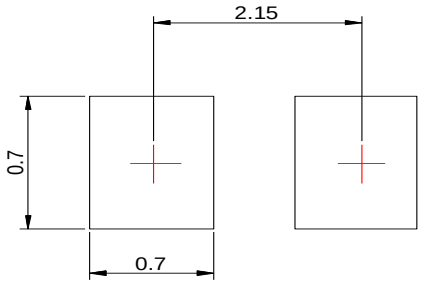
➢ Package Information (SOD-323)

Case Material: Molded Plastic. UL Flammability

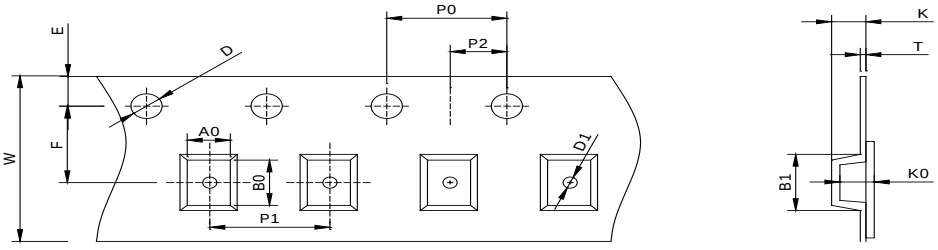


Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	1.60	1.80	0.063	0.071
B	1.2	1.40	0.047	0.055
C	0.80	0.90	0.031	0.035
D	0.25	0.35	0.010	0.014
E	0.15REF		0.006REF	
H	0	0.10	0	0.004
J	0.08	0.15	0.003	0.006
K	2.50	2.70	0.098	0.106

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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