1- Line Bidirectional ESD Protection Diode

General description

The PWESD-5VSDB is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time , make these parts ideal for ESD protection on designs where board space is at a premium.

Features and benefits

- Reverse stand-off voltage: 5.0V Max
- Bidirectional ESD protection of one line
- Femtofarad capacitance: CJ = 37pF (Typ)
- Response time is typically < 1 ns
- Low leakage current: nA Level
- ESD Protection: 30kV(air)/ 30kV(contact) (IEC61000-4-2)
- RoHS compliant

Application information

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Microprocessor based equipment

Ordering information

Device	Package	Marking	Packaging	Reel Size
PWESD-5VSDB	SOD523	ɔc	3000/Tape & Reel	7 Inch

Schematic & Pin configuration

Mimensions	Circuit Diagram
	

Maximum Ratings

(T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (Tp = 8/2 0μS)	P_{PK}	200	W
Rated Peak Pulse Current (Tp = 8/20 μS)	I_{PP}	20	A
Maximum lead temperature for soldering during 10s	T_L	260	°C
Storage Temperature Range	T_{stg}	-55 to +150	°C
Operating Temperature Range	T_{OP}	-40 to +125	°C
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	30	kV

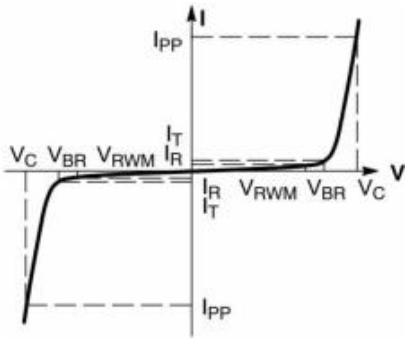
Electrical Characteristics

(T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5.0	V	
Breakdown Voltage	V_{BR}	6.2	--	7.5	V	I_T=1mA
Leakage Current ILeak	I_R	--	--	0.1	μA	V_{RWM}=5.0V
Clamping Voltage	V_C	--	6.0	7.0	V	I_{PP}=1A,T_p=8/20μs
Clamping Voltage	V_C	--	9.1	10.0	V	I_{PP}=20A,T_p=8/20μs
Junction Capacitance	C_J	--	37.0	40.0	pF	V_R=0V, f=1MHz

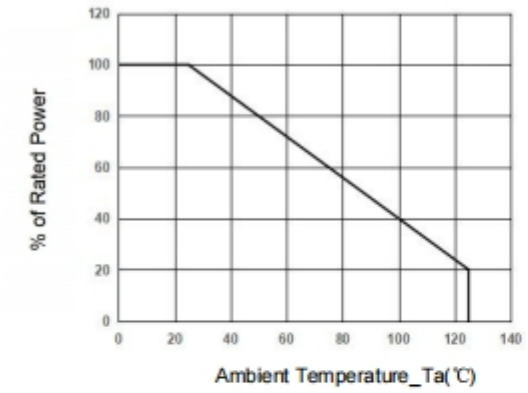
Portion Electronics Parameter

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	VBR Breakdown Voltage @ I_T

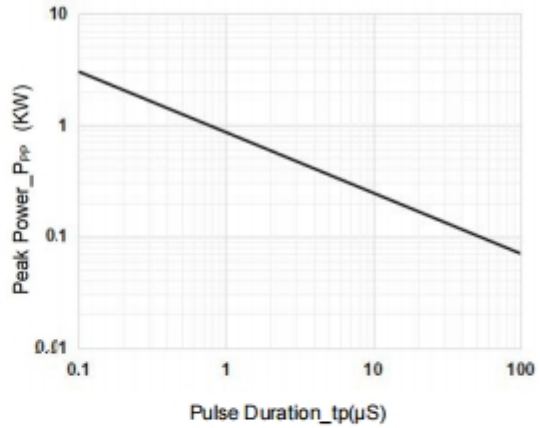


Typical Performance Characteristics

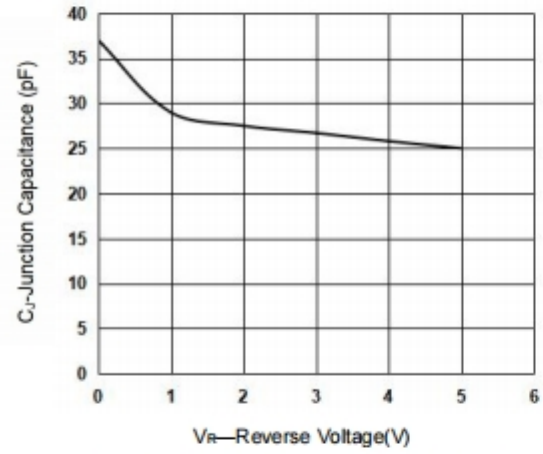
(T_A=25℃ unless otherwise Specified)



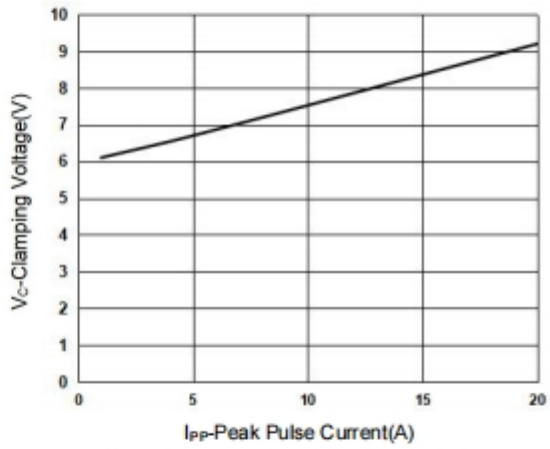
Power Derating Curve



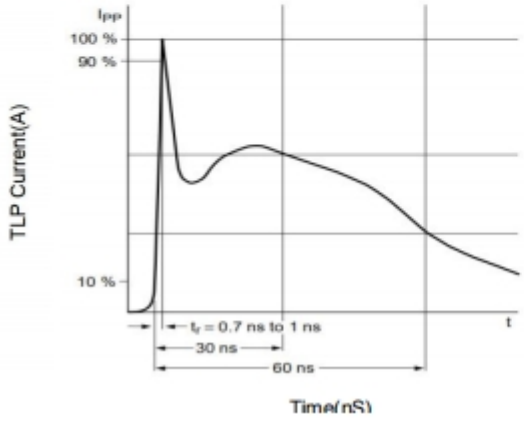
Peak Pulse Power vs. Pulse Time

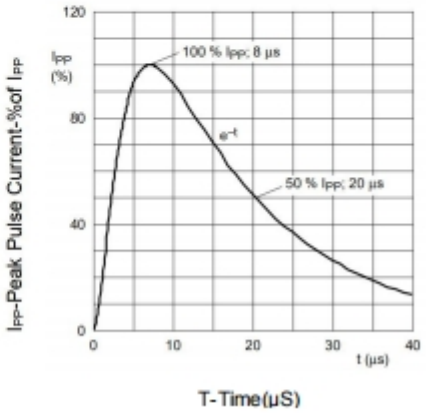


Junction Capacitance vs. Reverse Voltage



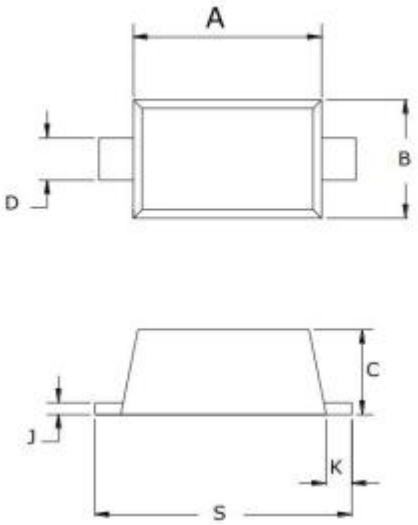
Clamping Voltage vs. Peak Pulse Current





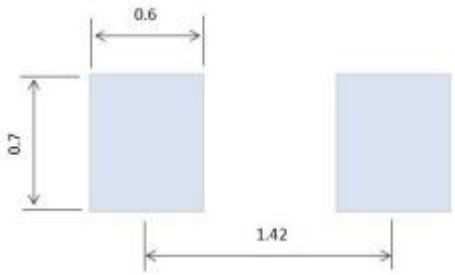
Package Outline Dimensions

SOD523



SYMBOL	Dimensions In Millimet	
	MIN	MAX
A	1.10	1.30
B	0.70	0.90
C	0.50	0.70
D	0.25	0.35
J	0.07	0.20
K	0.15	0.25
S	1.50	1.70

Soldering Footprint (mm)



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