ESD9B5VD

1-Line, Bi-directional, Normal-Capacitance, Transient Voltage Suppressors

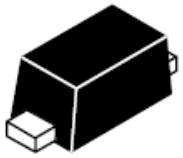
http//:www.sh-willsemi.com

Descriptions

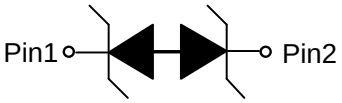
The ESD9B5VD is a Bi-directional transient voltage suppressor (TVS) to protect sensitive electronic components from electrostatic discharge (ESD). It is particularly well-suited for cellular phones, PMP, MID, PDA, digital cameras and other electronic equipment.

The ESD9B5VD is safely dissipating ESD strikes to meet the ESD immunity testing of IEC61000-4-2 level 4.

The ESD9B5VD is available in SOD-923 package. Standard products are Pb-free and Halogen-free.



SOD-923



Pin configuration (Top view)

Features

- Reverse stand-off voltage : 5V Max
- Peak power (tp=8/20μs) : 85W Max.
- Peak current (tp=8/20μs) : 6.5A Max.
- Transient protection
  IEC61000-4-2 : ±30kV air
  : ±30kV contact
- Low clamping voltage
- Low leakage current
- Small package

9C = Device code
Marking

Order information

Device	Package	Shipping
ESD9B5VD-2/TR	SOD-923	10000/Tape&Reel

Applications

- Cell phone
- PMP
- MID
- PDA
- Digital camera
- Other electronics equipments

Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Peak pulse power (tp=8/20μs)	Ppk	85	W
Peak pulse current (tp=8/20μs)	Ipp	6.5	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	kV
ESD according to IEC61000-4-2 contact discharge		±30	
Junction temperature	T_J	125	^oC
Operating temperature	T_{OP}	-40~85	^oC
Lead temperature	T_L	260	^oC
Storage temperature	T_{STG}	-55~150	^oC

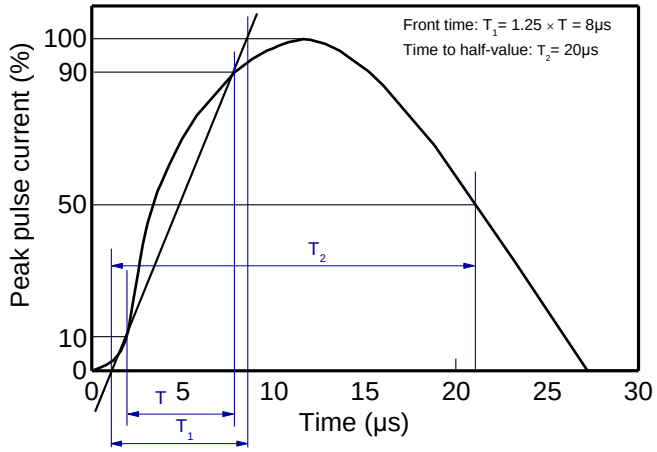
Electronics characteristics (Ta=25 ^{o}C, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse stand-off voltage	V_{RWM}				5.0	V
Reverse leakage current	I_R	V_{RWM} = 5V			1.0	μA
Reveres breakdown voltage	V_{BR}	I_{BR} = 1mA	5.6	7.5	8.2	V
Clamping voltage[1)]	V_{CL}	I_{pp} = 1.0A, tp = 8/20μs			9	V
		I_{pp} = 6.5A, tp = 8/20μs			13	V
Junction capacitance	C_J	F=1MHz, V_R=0V		20	35	pF

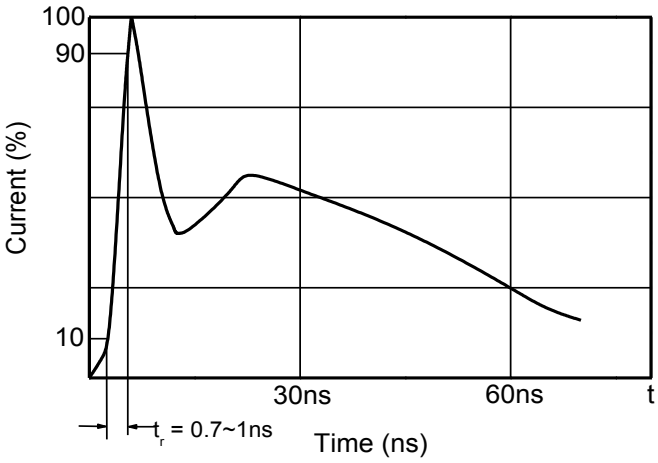
Notes:

1) Non-repetitive current pulse, according to IEC61000-4-5.

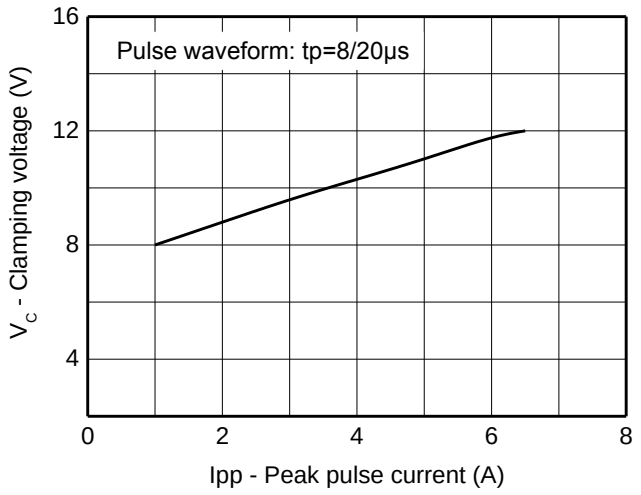
Typical characteristics (Ta=25°C, unless otherwise noted)



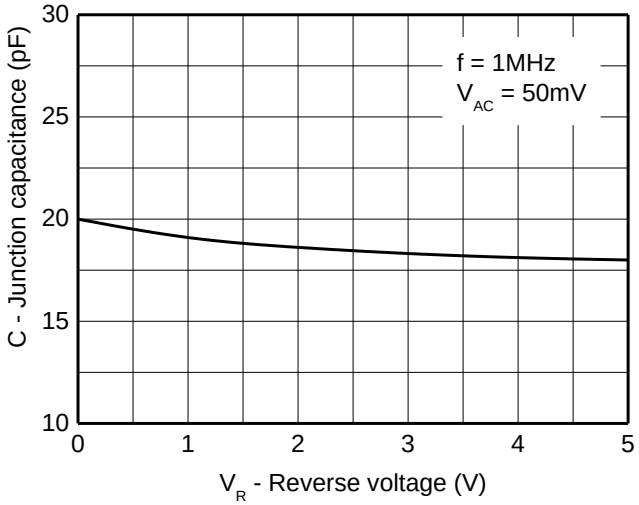
8/20μs waveform per IEC61000-4-5



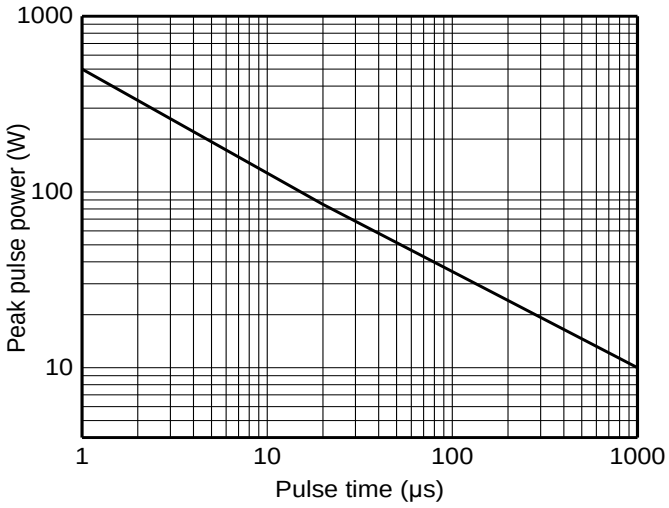
Contact discharge current waveform per IEC61000-4-2



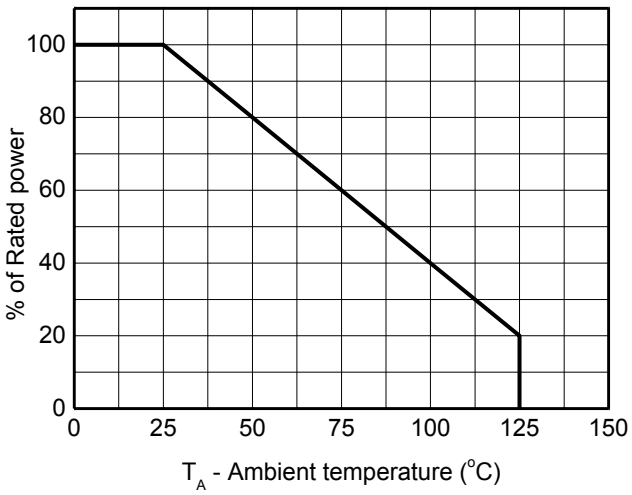
Clamping voltage vs. Peak pulse current



Capacitance vs. Reverse voltage

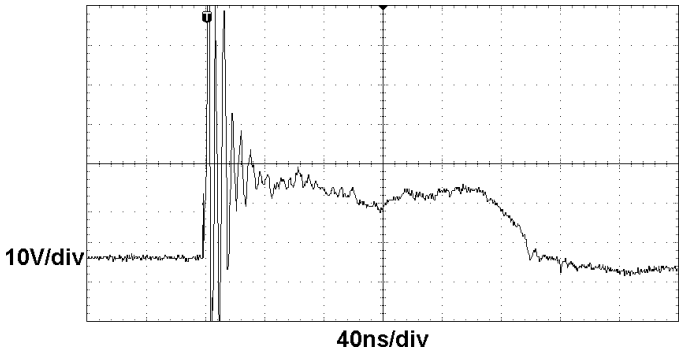


Non-repetitive peak pulse power vs. Pulse time

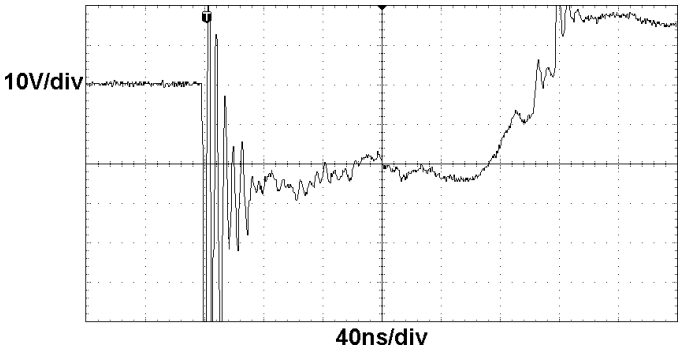


Power derating vs. Ambient temperature

Typical characteristics (T_A=25°C, unless otherwise noted)



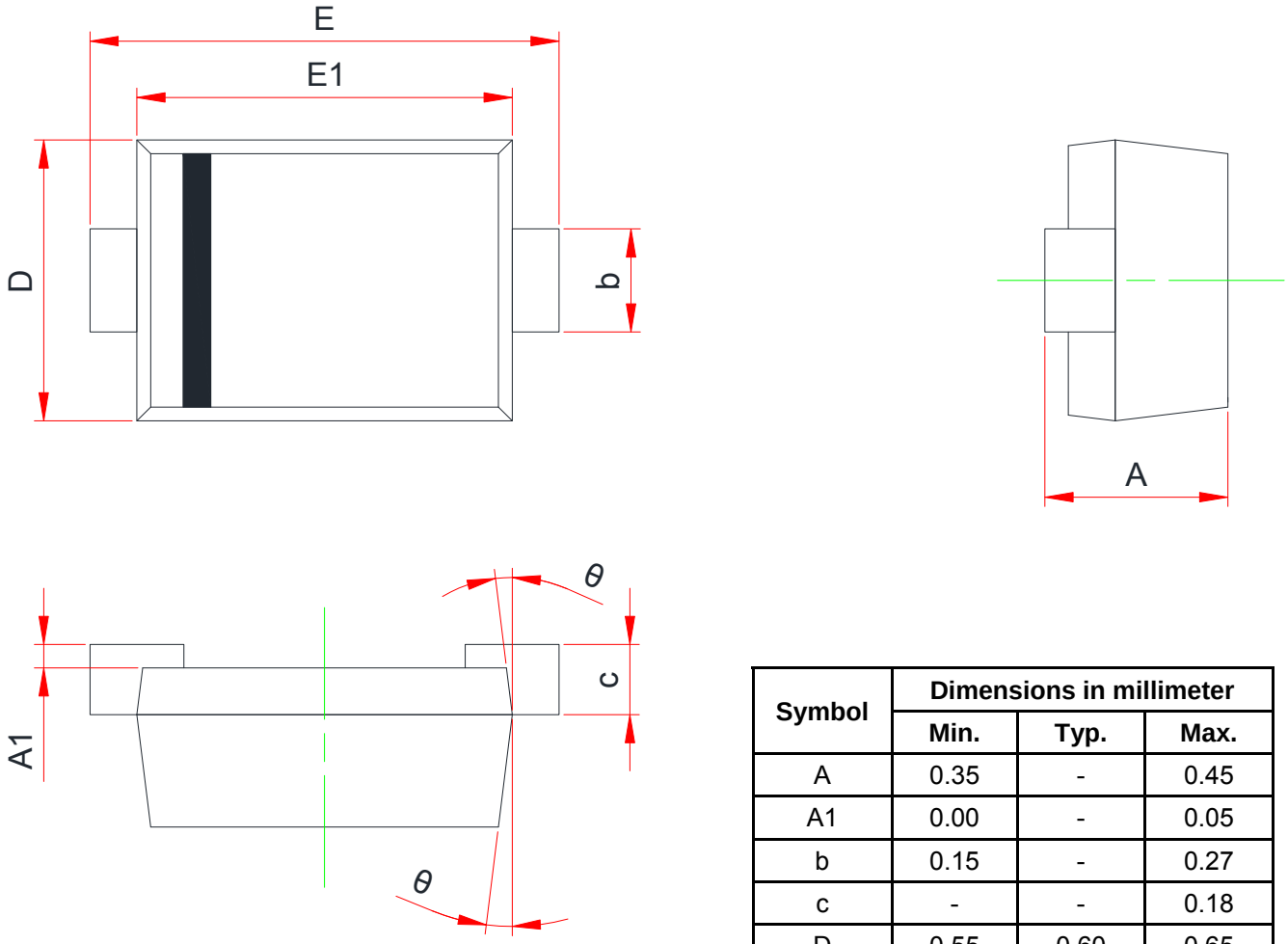
ESD clamping
(+8kV contact discharge per IEC61000-4-2)



ESD clamping
(-8kV contact discharge per IEC61000-4-2)

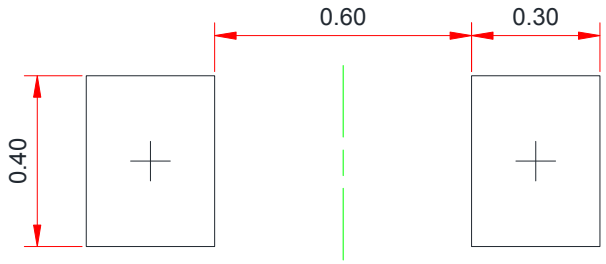
Package outline dimensions

SOD-923



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.35	-	0.45
A1	0.00	-	0.05
b	0.15	-	0.27
c	-	-	0.18
D	0.55	0.60	0.65
E	0.90	1.00	1.10
E1	0.75	0.80	0.85
θ	7^{o} Ref.		

Recommend PCB Layout (Unit: mm)



Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.