SOD-923 Plastic-Encapsulate ESD Protection Diodes

Features

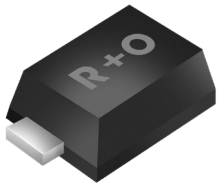
- Low leakage current
- Low clamping voltage
- IEC 61000-4-2 (ESD Air): ±30kV
- IEC 61000-4-2 (ESD Contact): ±30kV
- IEC 61000-4-5 (Lightning 8/20μs): 10A

Reverse Working Voltage
5V Max.
Normal capacitance
15pF(Typ.)

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation,Digital Cameras
- Peripherals, Audio Players, Industrial Equipment

SOD-923



Function Diagram

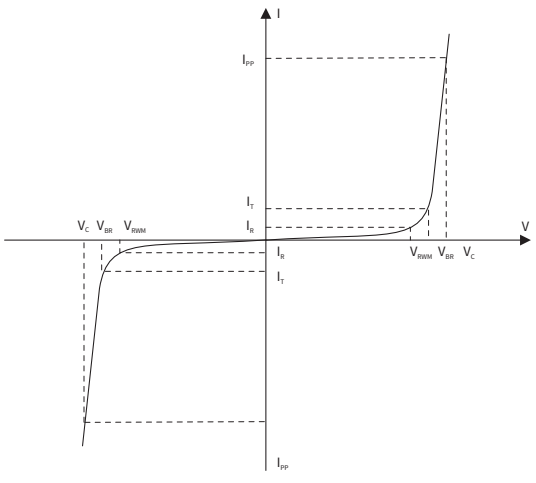


Maximum Ratings (Ta=25°C Unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{ESD}	Electrostatic Discharge Voltage	ESD per IEC 61000-4-2(Air)	±30	KV
		ESD per IEC 61000-4-2(Contact)	±30	KV
P_{PP}	Peak Pulse Power	tp = 8/20 μs	100	W
I_{PP}	Rated Peak Pulse Current	tp = 8/20 μs	10	A
T_J	Operating JunctionTemperature Range	—	-55 to +150	°C
T_{STG}	Storage Temperature Range	—	-55 to +150	°C

Electrical Parameter

SYMBOL	PARAMETER
V_C	Clamping Voltage @ I_{PP}
V_{BR}	Breakdown Voltage @ I_T
I_{PP}	Peak Pulse Current
I_T	Test Current
I_R	Reverse Leakage Current @ VRWM
V_{RWM}	Peak Reverse Working Voltage
P_{PP}	Peak Pulse Power Dissipation
C_J	Junction Capacitance @ V_R=0V,f=1MHz
I_F	Forward Current
V_F	Forward Voltage @I_F



Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	CONDITION	Min	Typ	Max	UNIT
Peak Reverse Working Voltage	V_{RWM}	T_a=25°C	—	—	5.0	V
Breakdown Voltage	V_{BR}	I_T=1mA,T_a=25°C	6.0	—	8.0	V
Reverse Leakage Current	I_R	V_{RWM}=5.0V,T_a=25°C	—	—	0.1	μA
Clamping Voltage	V_C	I_{PP}=1A,t_p=8/20μs	—	—	8.5	V
Clamping Voltage	V_C	I_{PP}=10A,t_p=8/20μs	—	—	10	V
Junction Capacitance	C_J	V_{RMW}=0V,f=1MHz	—	15	30	pF

Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

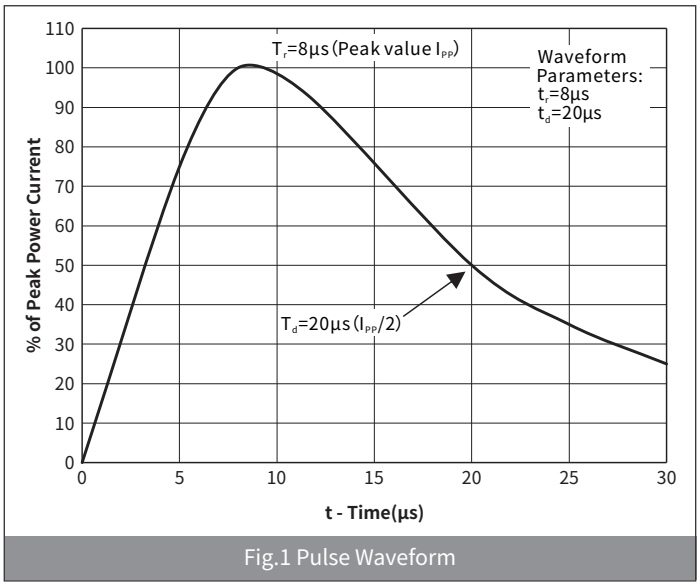


Fig.1 Pulse Waveform

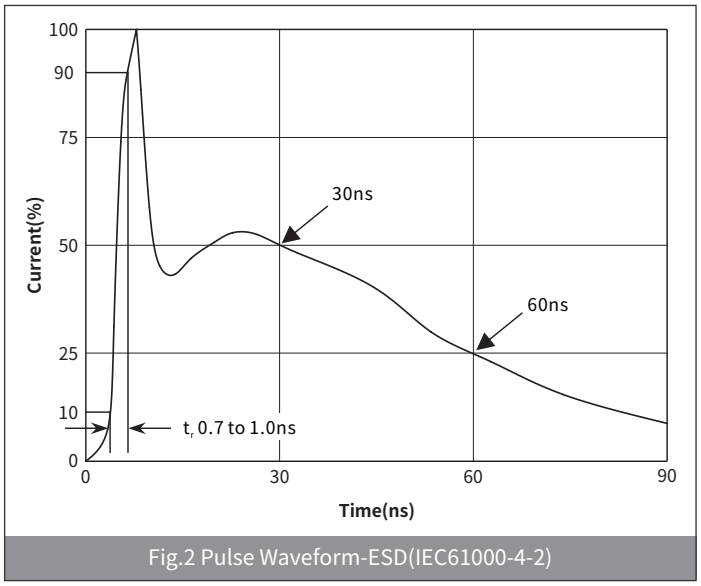


Fig.2 Pulse Waveform-ESD(IEC61000-4-2)

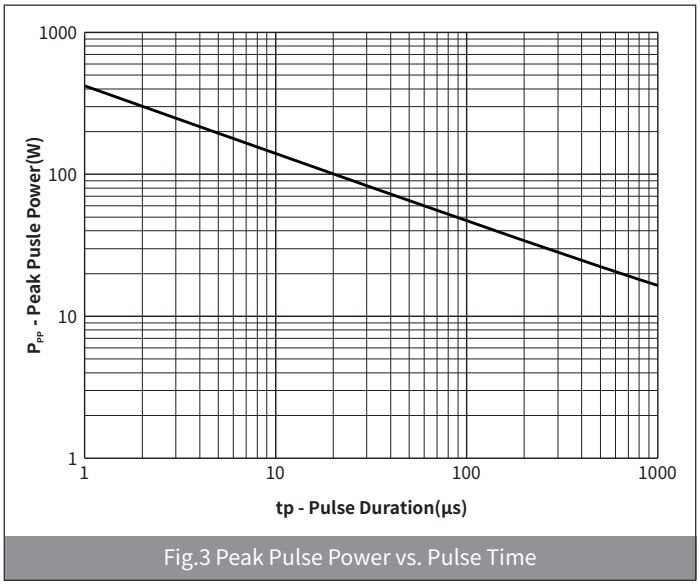


Fig.3 Peak Pulse Power vs. Pulse Time

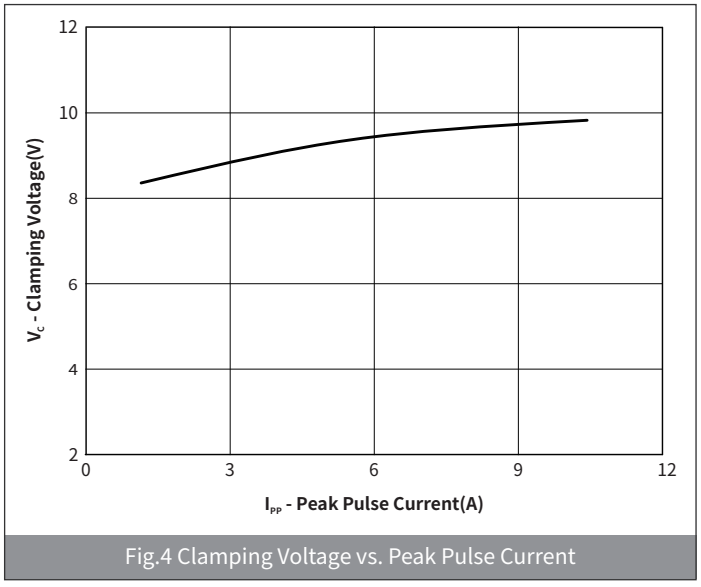
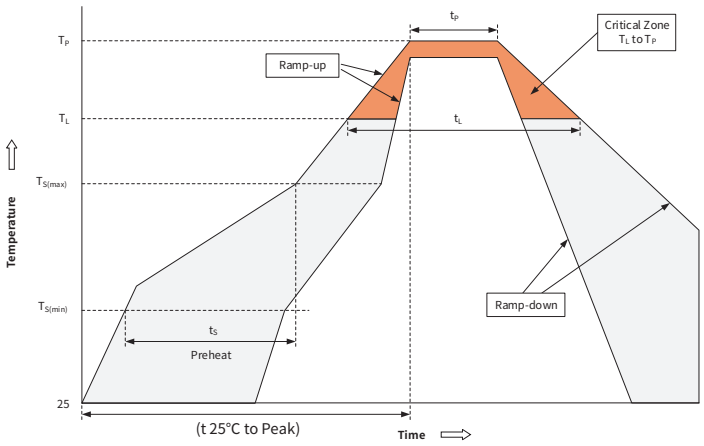


Fig.4 Clamping Voltage vs. Peak Pulse Current

Ordering Information

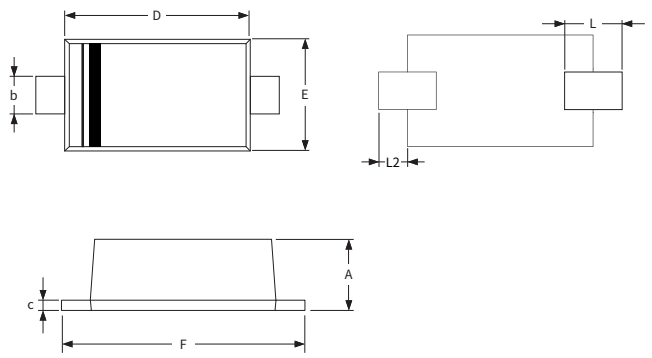
PREFERED P/N	PACKAGE	SIZE(mm)	DELIVERY MODE	MPQ(PCS)
H5VND9B	SOD-923	1.00×0.60×0.37	7"	8000

Recommended Soldering Conditions



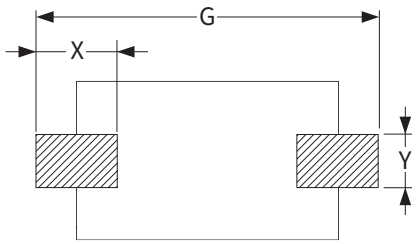
Profile Feature		Pb-Free Assembly
Pre-heat	Temperature Min ($T_{S(min)}$)	+150°C
	Temperature Max($T_{S(max)}$)	+200°C
	Time (Min to Max) (t_S)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C /sec. Max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C /sec. Max
Reflow	Temperature(T_L)(Liquid us)	+217°C
	Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		20-40secs
Ramp-down Rate		6°C /sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

Package Outline Dimensions (SOD-923)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.34	0.40	0.013	0.016
b	0.15	0.25	0.006	0.010
c	0.07	0.17	0.003	0.007
D	0.75	0.85	0.030	0.033
E	0.55	0.65	0.022	0.026
F	0.95	1.05	0.037	0.041
L	0.19REF		0.007REF	
L2	0.05	0.15	0.002	0.006

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
G	-	1.20		0.047
X	0.36	-	0.014	-
Y	0.25	-	0.010	-