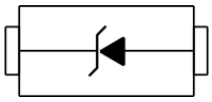
Transient Voltage Suppressors for ESD Protection

Description

The SXESDNC9D3V3U protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. They feature large cross-sectional area junctions for conducting high transient currents, offer desirable electrical characteristics for board level protection, such as fast response time, low operating voltage.

SOD-923



Feature

60W peak pulse power per line (t_P = 8/20μs)
SOD-923 package
Replacement for MLV(0402)
Unidirectional configurations
Response time is typically < 1 ns
Protect one I/O or power line
Low clamping voltage
RoHS compliant
Transient protection for data lines to IEC 61000-4-2(ESD)
±15KV(air), ±8KV(contact); IEC 61000-4-4 (EFT) 40A (5/50ns)

Applications

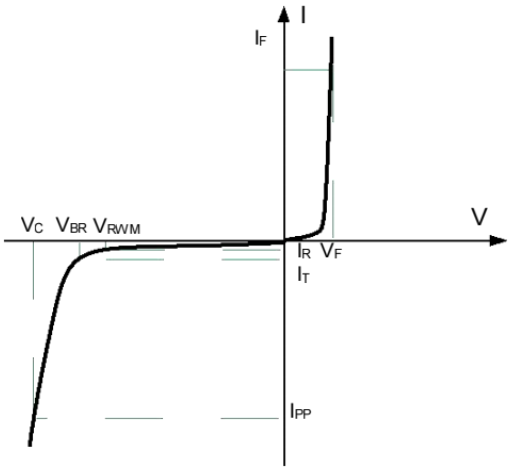
Cell phone handsets and accessories
Personal digital assistants (PDA's)
Notebooks, desktops, and servers
Portable instrumentation
Cordless phones
Digital cameras
Peripherals
MP3 players

Mechanical Characteristics

Lead finish:100% matte Sn(Tin)
Mounting position: Any
Qualified max reflow temperature:260℃
Device meets MSL 1 requirements
Pure tin plating: 7 ~ 17 um
Pin flatness:≤3mil

Electronics Parameter

Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
P_{PP}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical characteristics per line@25℃(unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Working Voltage	V_{RWM}				3.3	V
Breakdown Voltage	V_{BR}	I_t =1mA	5.0	6.0	7.0	V
Reverse Leakage Current	I_R	V_{RWM} =3.3V			1	μA
Forward Voltage	V_F	I_F =10mA		0.8		V
Clamping Voltage	V_C	I_{PP}=1A t_P = 8/20μS		7.0	7.5	V
Clamping Voltage	V_C	I_{PP}=7A t_P = 8/20μS		9.0	9.5	V
Junction Capacitance	C_j	V_R=0V f = 1MHz		37	50	pF

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Peak Pulse Power (t_P = 8/20μS)	P_{pp}	60	W
Lead Soldering Temperature	T_L	260 (10 sec)	℃
Operating Temperature	T_J	-55 to +150	℃
Storage Temperature	T_{STG}	-55 to +150	℃

Typical Characteristics

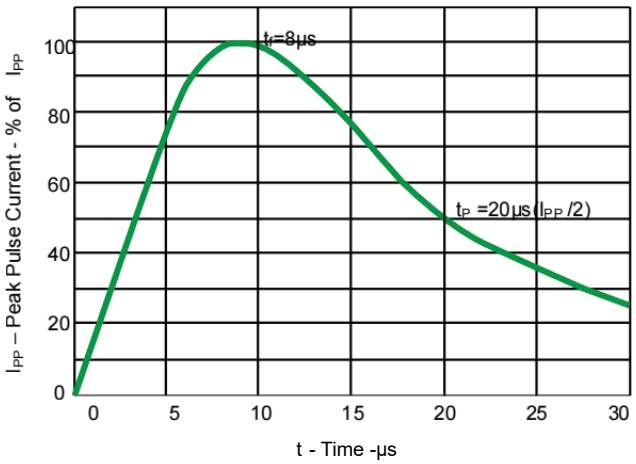


Fig 1.Pulse Waveform

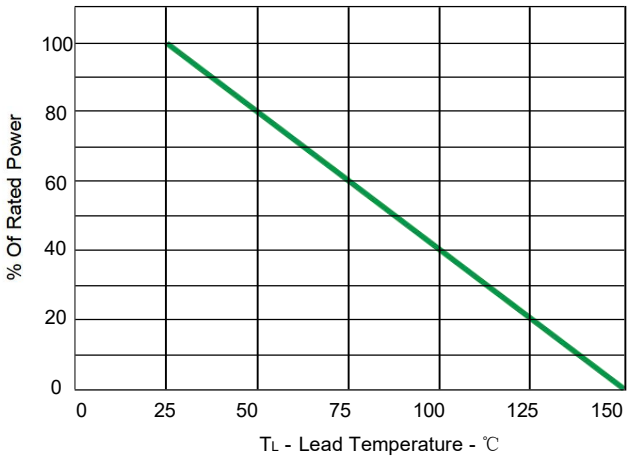


Fig 2.Power Derating Curve

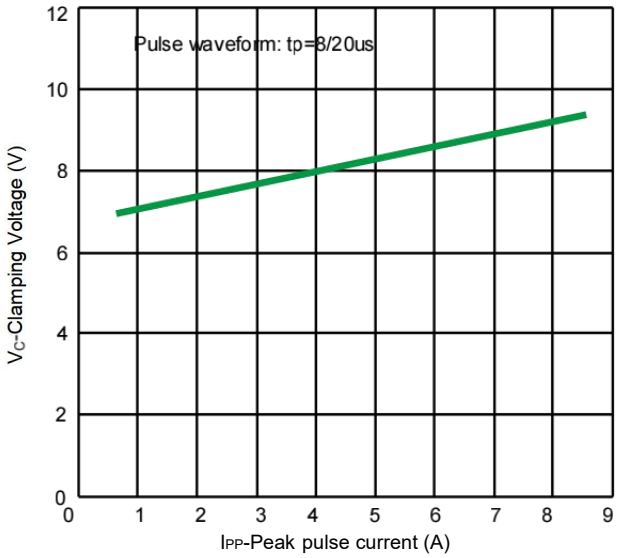


Fig 3. Clamping voltage vs. Peak pulse current

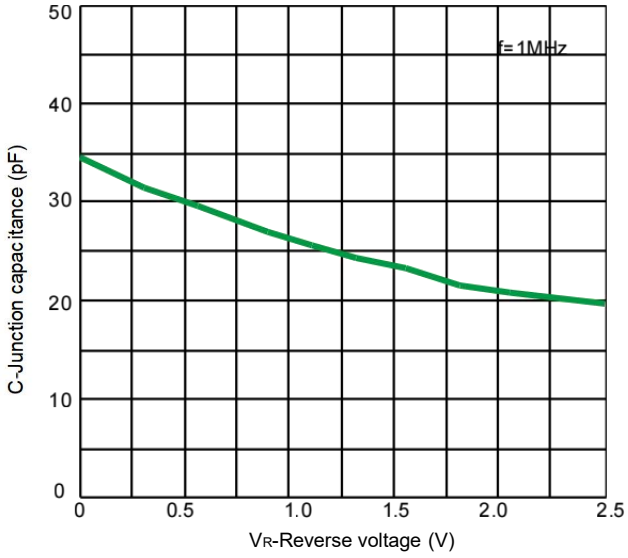


Fig 4. Capacitance vs. Reveres voltage

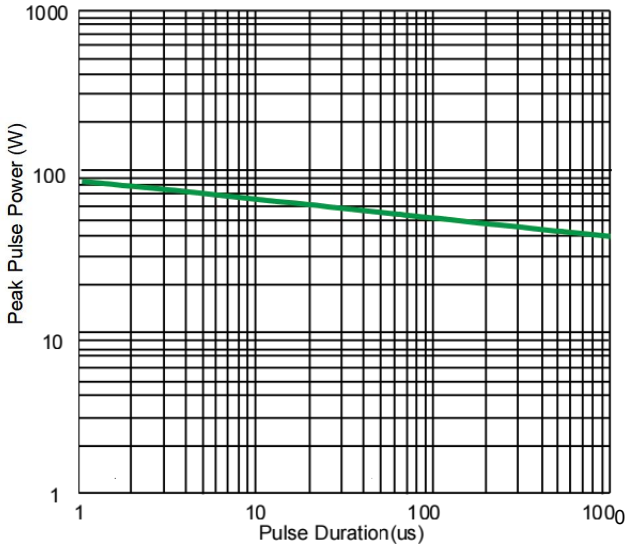
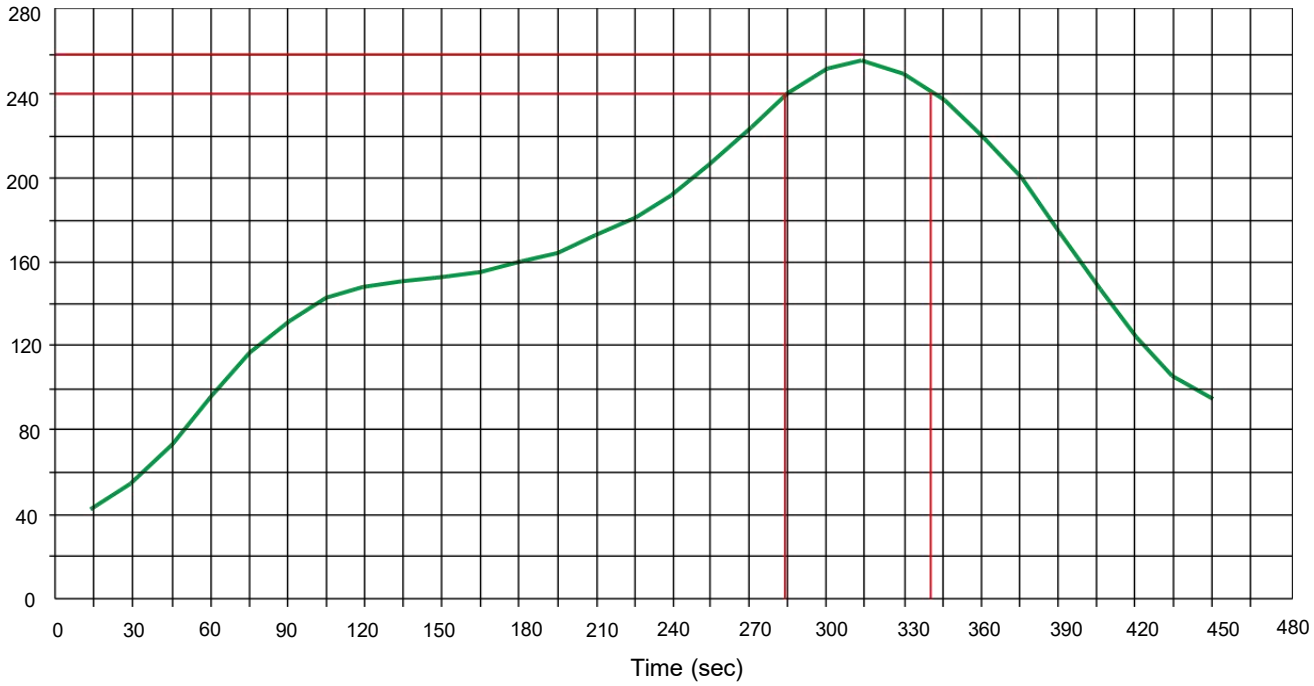


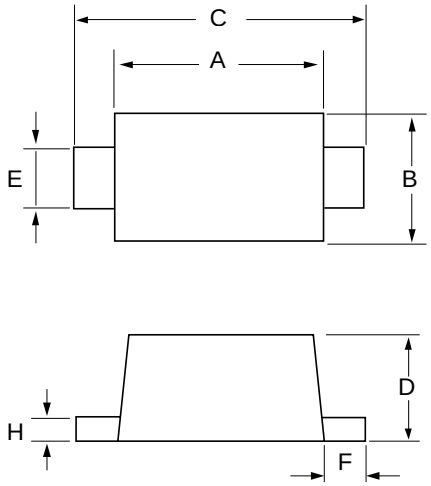
Fig 5. Non Repetitive Peak Pulse Power vs. Pulse time

Solder Reflow Recommendation

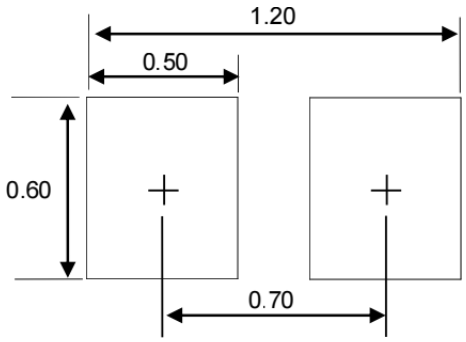
Peak Temp=257℃, Ramp Rate=0.802deg. ℃/sec



Product dimension (SOD-923)



Dim	Inches		Millimeters	
	MIN	MAX	MIN	MAX
A	0.030	0.033	0.75	0.85
B	0.022	0.026	0.55	0.65
C	0.037	0.041	0.95	1.05
D	0.014	0.017	0.36	0.43
E	0.006	0.010	0.15	0.25
F	0.002	0.006	0.05	0.15
H	0.003	0.007	0.07	0.17



Unit:mm

Suggested PCB Layout

Ordering information

Device	Package	Shipping
TAPING	SOD-923 (Pb-Free)	8000 / Tape & Reel