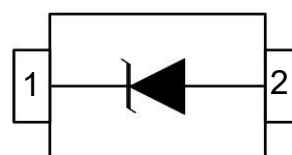


SOD-523 Plastic-Encapsulate ESD Protection Diodes

DESCRIPTION

- ◆ Peak power dissipation: 60W (8/20μs)
- ◆ Transient protection for high-speed data lines
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
Cable Discharge Event (CDE)
- ◆ Package optimized for high-speed lines
- ◆ Protects one data, control line
- ◆ Low capacitance: 0.4pF (Typical)
- ◆ Low clamping voltage
- ◆ Low leakage current

Circuit Diagram



Applications

- ◆ Serial ATA
- ◆ Desktops, Servers and Notebooks
- ◆ Cellular Phones
- ◆ I Ports
- ◆ USB2.0 Power and Data Line Protection
- ◆ Display Ports
- ◆ Digital Visual Interfaces (DVI)

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
ESD per IEC 61000-4-2 (Air)	VESD	± 20	KV
ESD per IEC 61000-4-2 (Contact)		± 20	
Peak Pulse Power(8/20us)	PPp	60	W
Operating Temperature	T _{OPT}	-55 to +125	°C
Storage Temperature	T _{STG}	-55 to +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260(10 sec.)	°C

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage				5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_{\text{T}} = 1\text{mA}$	6.0			V
I_{R}	Reverse Leakage Current	$V_{\text{RWM}} = 5.0\text{V}$			100	nA
V_{C}	Clamping Voltage	$I_{\text{PP}} = 1\text{A}$, $t_{\text{p}} = 8/20\mu\text{s}$			10	V
V_{C}	Clamping Voltage	$I_{\text{PP}} = 4\text{A}$, $t_{\text{p}} = 8/20\mu\text{s}$			15	V
C_{J}	Junction Capacitance	$V_{\text{R}} = 0\text{V}$, $f = 1\text{MHz}$		0.40	0.70	pF

ELECTRICAL CHARACTERISTICS CURVE

Fig 1 Power Derating Curve

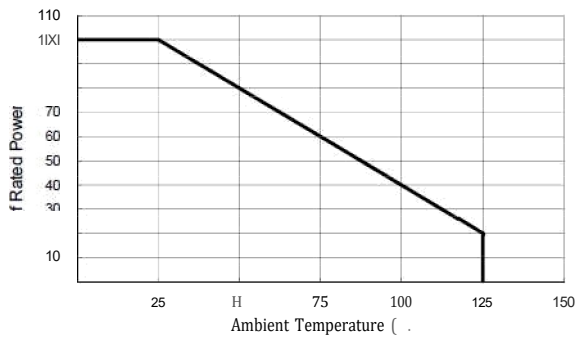


Fig 2 Clamping Voltage vs Peak Pulse Current

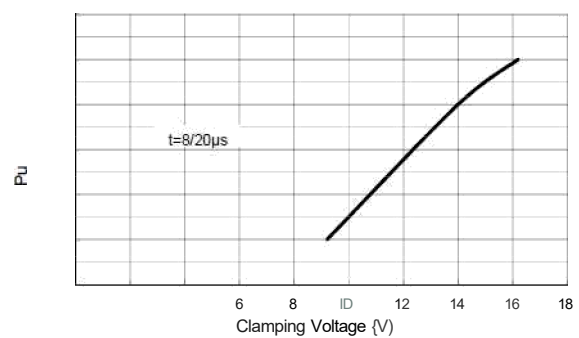


Fig 3 Voltage Sweeping

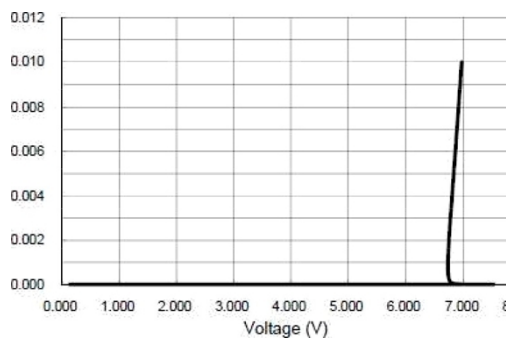


Fig 4 Voltage vs Capacitance

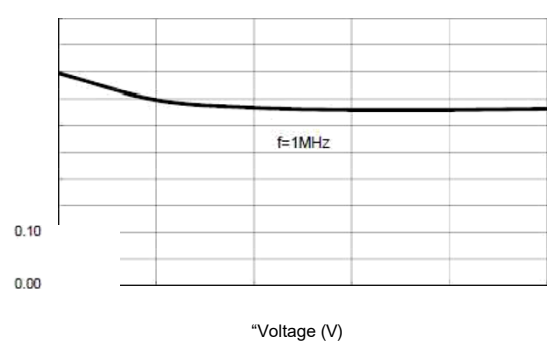


Fig 5 ESD Clamping
(*8kV Contact per IEC 61000-4-2)

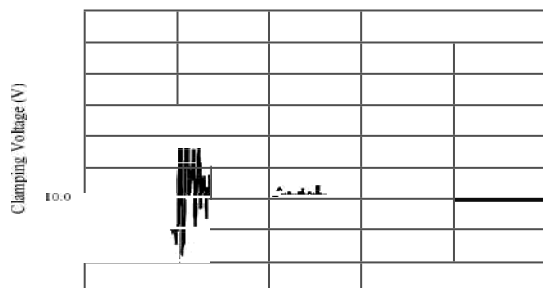


Fig 6 ESD Clamping
(*8kV Contact per IEC 61000-4-2)

