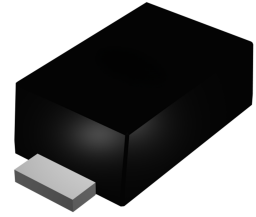


Features

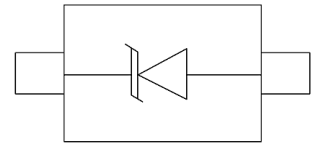
- Ultra low leakage: nA level
- Operating voltage: 12V
- Low clamping voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
 - IEC 61000-4-5 (Lightning) 3.5A (8/20 μs)



SOD-923

Mechanical Characteristics

- Package: SOD-923
- Lead finish: Matte tin
- Case material: "Green" molding compound
- Moisture sensitivity: Level 3 per J-STD-020



Schematic Diagram

Applications

- Cellular handsets and accessories
- Display ports
- MDDI ports
- USB ports
- Digital visual interface (DVI)
- PCI express and serial SATA ports

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PK}	80	W
Peak Pulse Current (8/20 μs)	I_{PP}	3.5	A
ESD per IEC 61000-4-2 (Air)	V_{ESD}	± 30	kV
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}	-	-	-	12	V
Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	13.5	-	-	V
Reverse Leakage Current	I_R	$V_{RWM}=12\text{V}$	-	-	0.5	μA
Clamping Voltage	V_C	$I_{PP}=1\text{A}$ (8 x 20 μs pulse)	-	-	16	V
		$I_{PP}=3.5\text{A}$ (8 x 20 μs pulse)	-	-	23	V
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$	-	18	-	pF

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

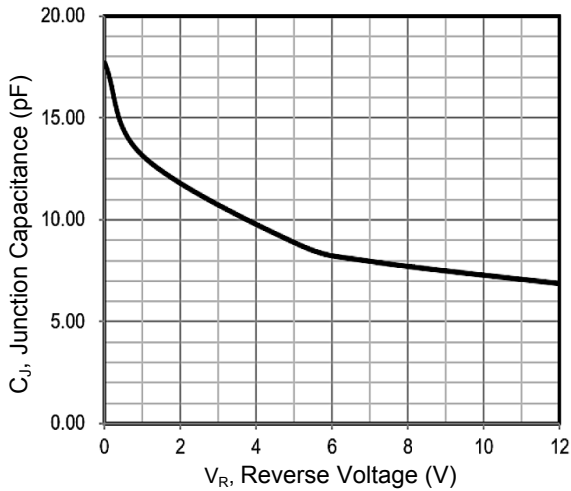


Figure 1. Junction Capacitance vs. Reverse Voltage

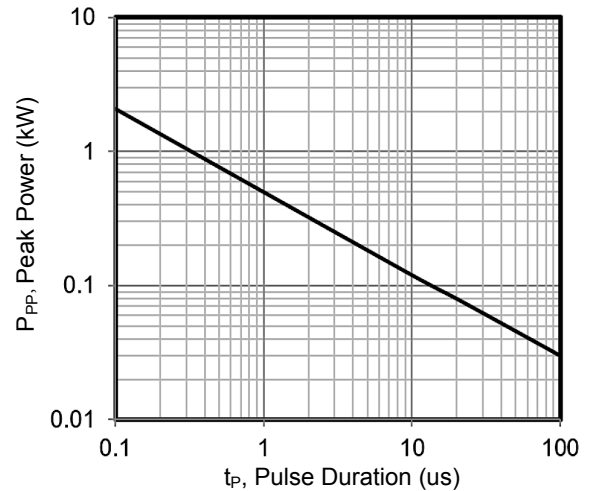


Figure 2. Peak Pulse Power vs. Pulse Time

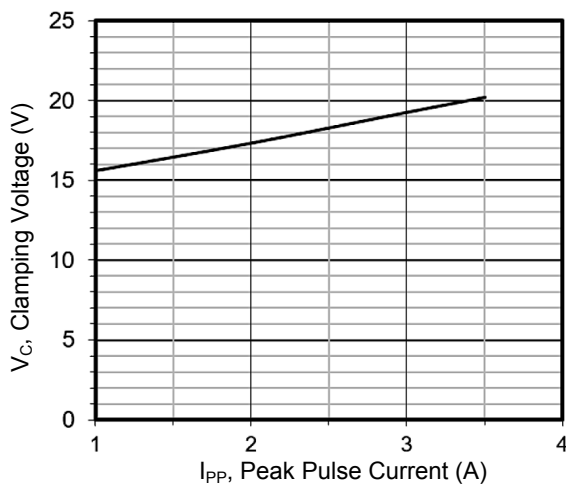


Figure 3. Clamping Voltage vs. Peak Pulse Current

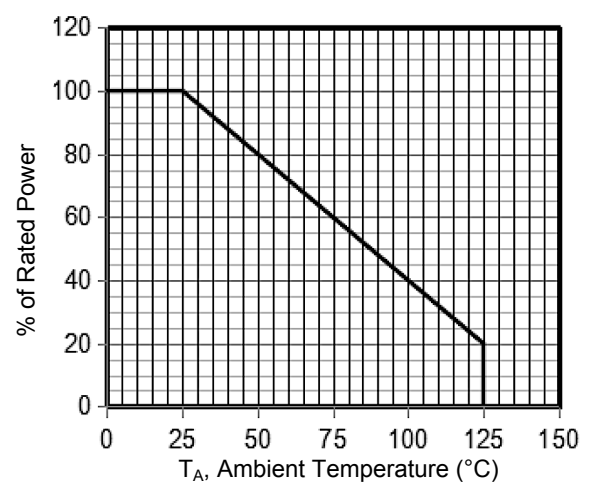


Figure 4. Power Derating Curve

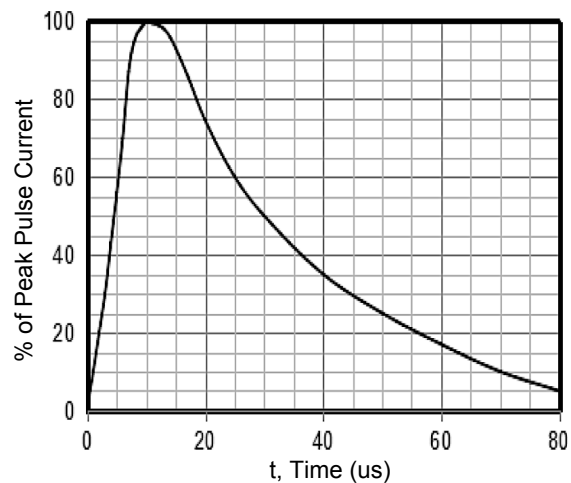
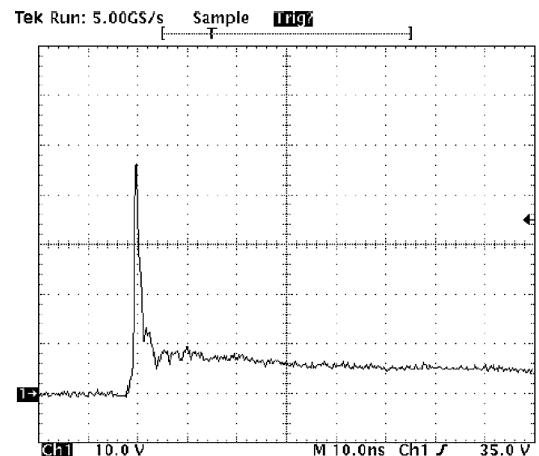


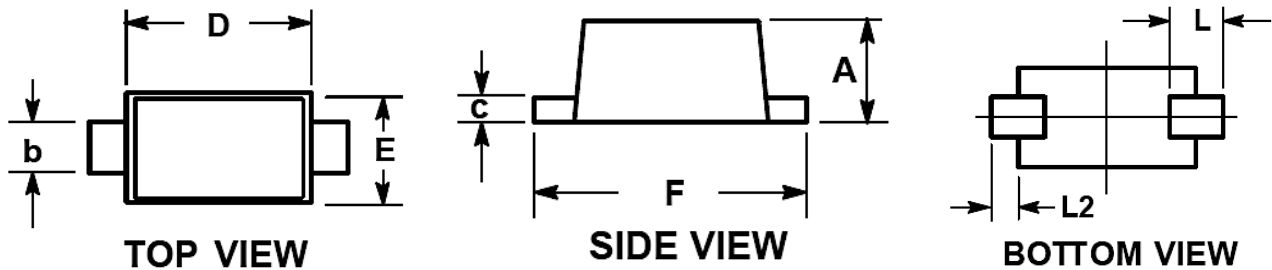
Figure 5. 8 x 20us Pulse Waveform



Note: Data is taken with a 10x attenuator

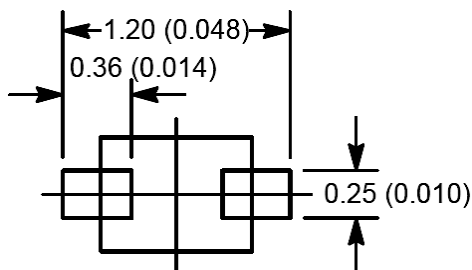
Figure 6. ESD Clamping Voltage
8kV Contact per IEC61000-4-2

Package Outline Dimension (SOD-923)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.39	0.45	0.016	0.018
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	0.034
E	0.55	0.65	0.022	0.026
F	0.95	1.05	0.038	0.042
L	0.19 REF		0.007 REF	
L2	0.05	0.15	0.002	0.006

Recommended Pad Layout



Dimensions in millimeters and (inches)

Order Information

Device	Package	Marking	Carrier	Quantity
GSEM12U180	SOD-923	29	Tape & Reel	8,000 Pcs / Reel