Surface Mount Transient Voltage Suppressor Diode

Features

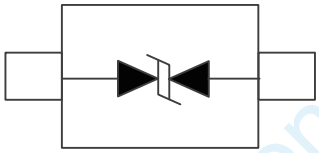
- ESD protection of one line
- Solid-state silicon-avalanche technology
- Working Voltage: 5.0V
- Peak Power up to 42 Watts @ 8 x 20μs Pulse
- Low Leakage current
- Response Time is Typically < 1 ns
- Low capacitance (Cj=3.7pF typ.)
- IEC 61000-4-2 (ESD) ±20kV (air), ±20kV (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)

Applications

- Cellular Handsets & Accessories
- Portable devices
- Power and date line
- Computer & Notebook

Mechanical Data

- UL Flame Rating : UL94V-0
- Reel Size : 7 inch
- RoHS/WEEE Compliant



Circuit Diagram



SOD523

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Absolute Maximum Rating at T_A = 25 °C, unless otherwise specified

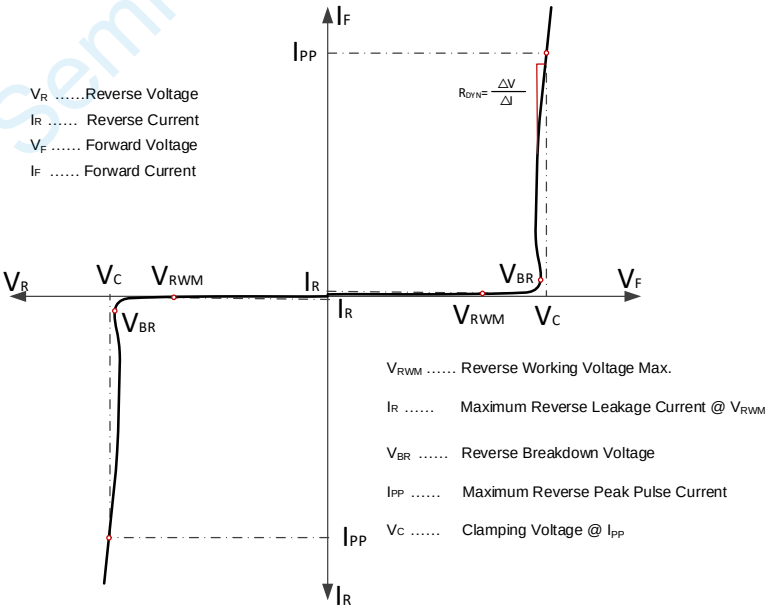
Rating	Symbol	Value	Units
Peak Pulse Power (t_p =8/20μs)	P_{PP}	42	Watts
Peak Pulse Current (t_p =8/20μs) (note1)	I_{pp}	3	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	±20 ±20	kV
Lead Soldering Temperature	T_L	260(10seconds)	℃
Junction Temperature	T_J	-55 to + 125	℃
Storage Temperature	T_{stg}	-55 to + 150	℃

Electrical Characteristics at T_A = 25 °C, unless otherwise specified

Parameter	Symbol	Conditions	Min.	Typical	Max.	Units
Reverse Stand-Off Voltage	V_{RWM}				5.0	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	6.0			V
Reverse Leakage Current	I_R	V_{RWM}=5.0V, T=25℃			1.0	μA
Peak Pulse Current	I_{PP}	tp =8/20μs			3	A
Clamping Voltage	V_C	I_{PP}=1A, tp=8/20μs		7.8		V
Clamping Voltage	V_C	I_{PP}=3 A, tp=8/20μs		11.0	14	V
ESD Clamping Voltage	V_C	tp=0.2/100ns,I_{TLP}=4A		7.3		V
ESD Clamping Voltage	V_C	tp=0.2/100ns,I_{TLP}=16A		11.1		V
Dynamic Resistance	R_{DYN}	tp=0.2/100ns		0.32		Ω
Junction Capacitance	C_J	VR=0V,f=1MHz		3.7	4.5	pF

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.
1. All parameters specified at T_A = 25°C unless otherwise noted.
2. These parameters are guaranteed by design and characterization.
3. Standard IEC 61000−4−2 with $C_{Discharge}$ = 150 pF, $R_{Discharge}$ = 330 Ω

Electrical Parameters at T_A = 25 °C, unless otherwise specified



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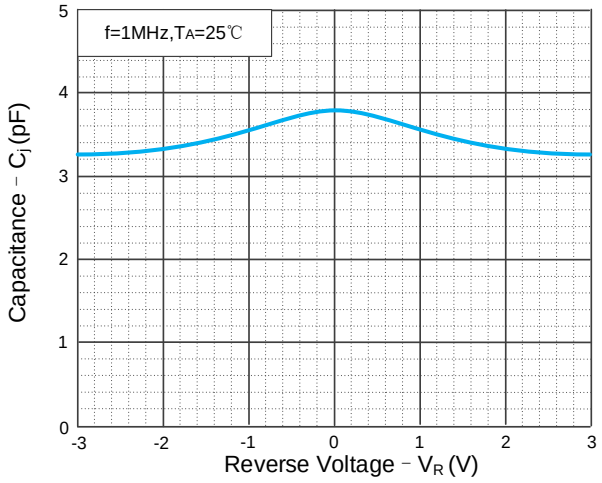
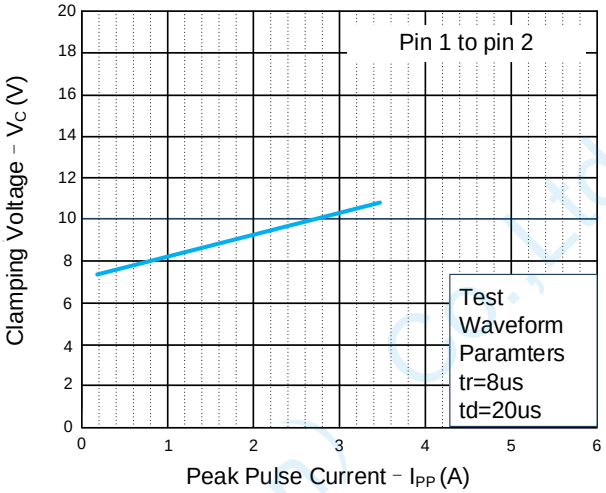
Typical Characteristics at T_A = 25 °C, unless otherwise specified

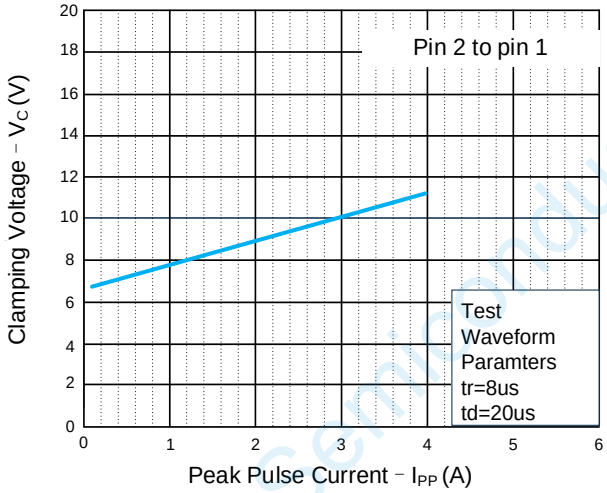
Capacitance vs. Reverse Voltage



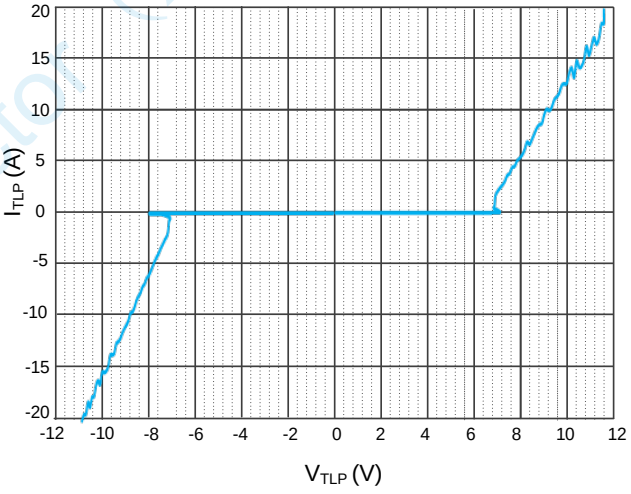
Clamping Voltage vs. Peak Pulse Current



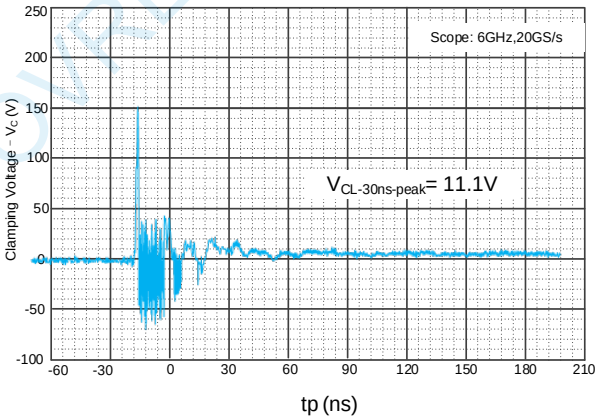
Clamping Voltage vs. peak PulseCurrent



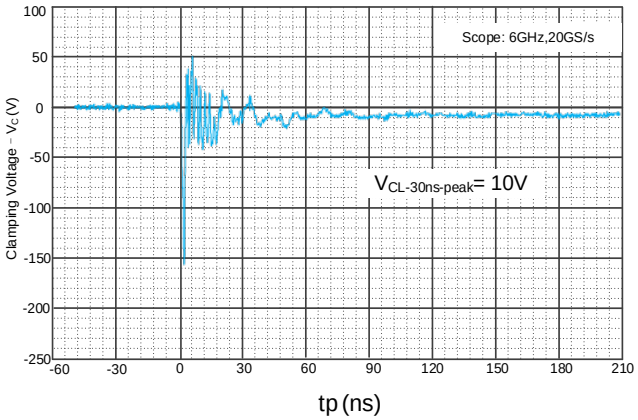
TLP Measurement



IEC61000-4-2 :15 kV positive pulse from pin 1 to pin 2



IEC61000-4-2 :15 kV negative pulse from pin 1 to pin 2



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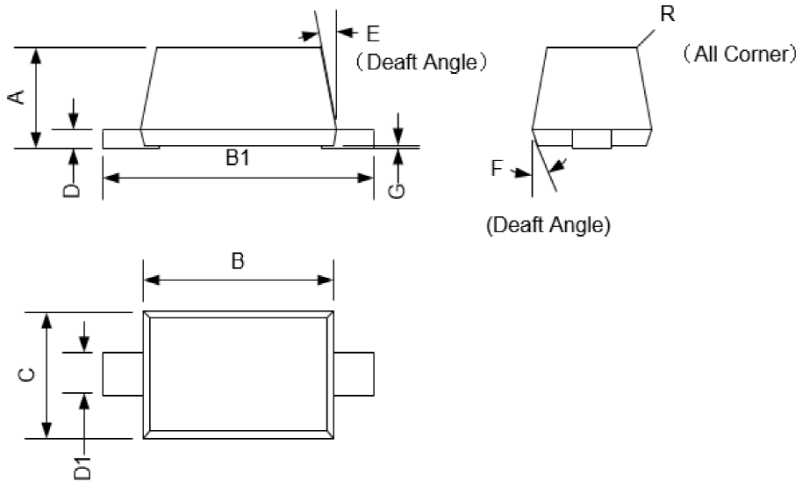
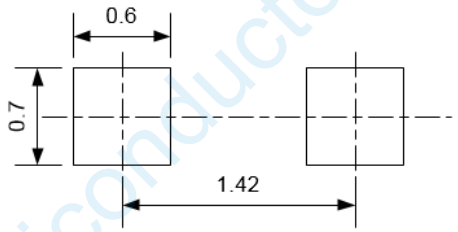
Package information



Symbol	Dim in mm		
	Min.	Nom.	Max.
A	0.450	0.550	0.650
B	1.150	1.200	1.250
B1	1.550	1.600	1.650
C	0.750	0.800	0.850
D	0.100	0.110	0.120
D1	0.280	0.330	0.380
E	6°	7°	8°
F	9°	10°	11°
G	0.000	-	0.020
R	0.020	-	0.050

Recommend PCB Layout



Notes: This PCB Layout Is For Reference Purposes Only

Marking



Ordering Information

Part number	Material	Type	Reel size	MOQ	MOQ/internal box	MOQ/carton
OVE1482A1	GREEN	T/R	7 inch	3k/reel	10reel= 30k/box	4boxes=120k/carton
OVE1482A1	GREEN	T/R	7 inch	5k/reel	10reel= 50k/box	4boxes=200k/carton

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