

Features

- Low operating voltage: 3.3V
- Ultra low capacitance: 0.35pF (Typ)
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{kV}$
 - Contact discharge: $\pm 30\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- -IEC61000-4-5 (Lightning) 6A (8/20 μs)
- 2-pin leadless package
- These are Pb-Free Devices
- Response Time is Typically < 1 ns

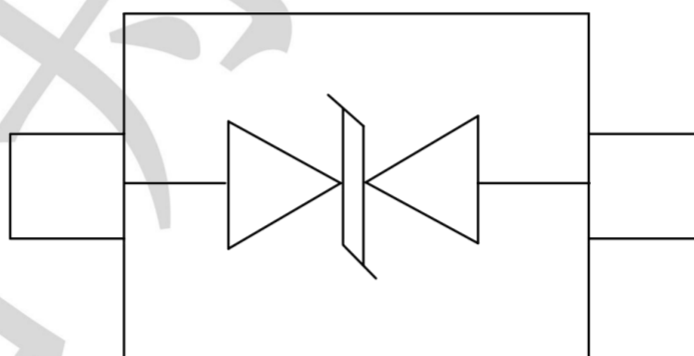
Mechanical Characteristics

- Package: SOD523(0603)
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- USB 2.0 power and data line

Dimensions and Pin Configuration



SOD523

Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

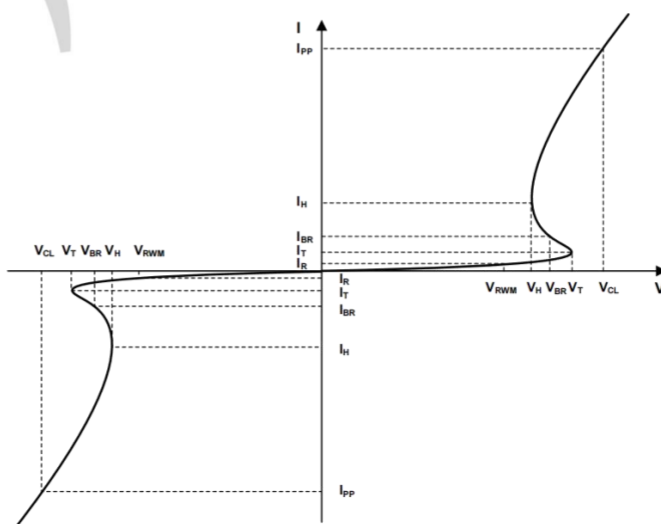
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{pk}	70	W
Peak Pulse Current (8/20μs)	I _{pp}	6	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	±30 ±30	KV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

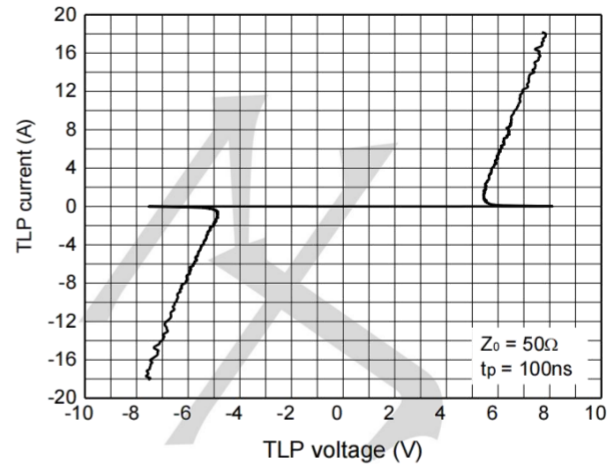
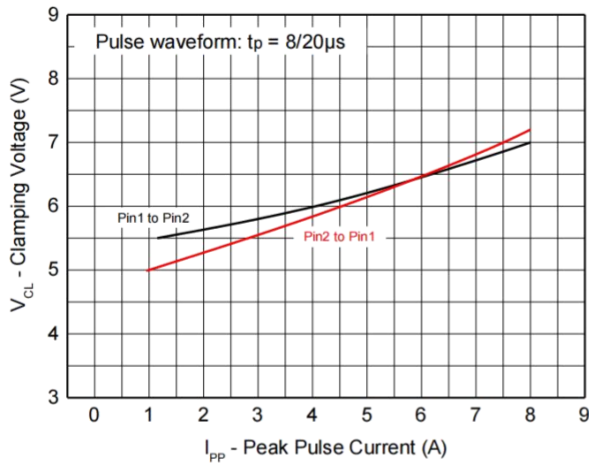
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}	--	--	3.3	V	
Breakdown Voltage	V _{BR}	4.0	5.0	--	V	I _T = 1mA
Reverse Leakage Current	I _R	--	--	500	nA	V _{RWM} = 3.3V
Clamping Voltage	V _C	--	5.5	7.0	V	I _{pp} = 1A (8x 20us pulse)
Clamping Voltage	V _C	--	7.5	10	V	I _{pp} = 6A (8x 20us pulse)
Junction Capacitance	C _J	--	0.35	0.5	pF	V _R = 0V, f = 1MHz

Electrical Characteristics

Symbol	Parameter
V _{BR}	Reverse Breakdown Voltage
I _{BR}	Reverse Breakdown Current
V _{RWM}	Reverse Stand-off Voltage
I _R	Reverse Leakage Current
V _H	Holding Voltage
I _H	Holding Current
V _T	Trigger Voltage
I _T	Trigger Current
I _{PP}	Peak Pulse Current
V _{CL}	Clamping Voltage

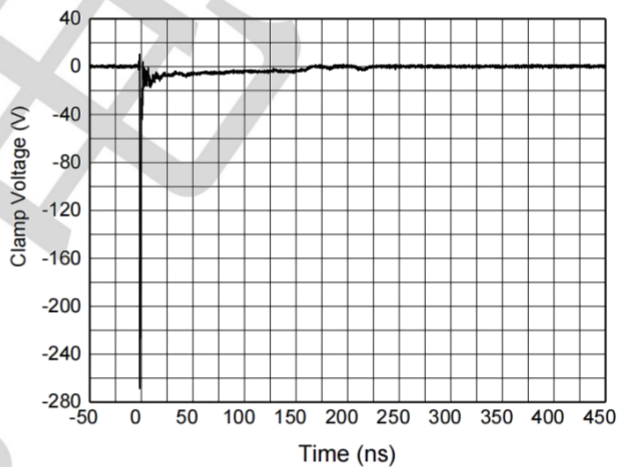
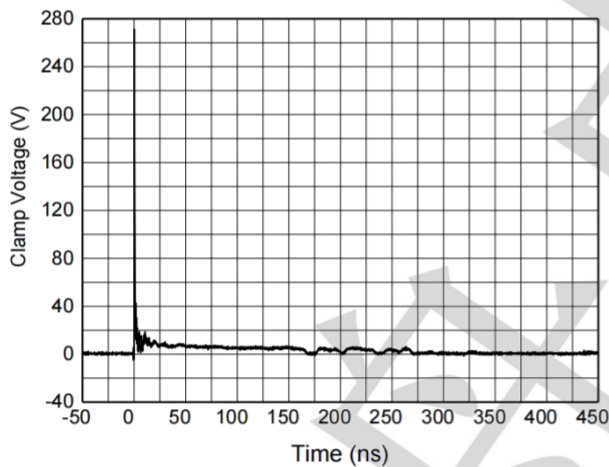


Characteristic Curves



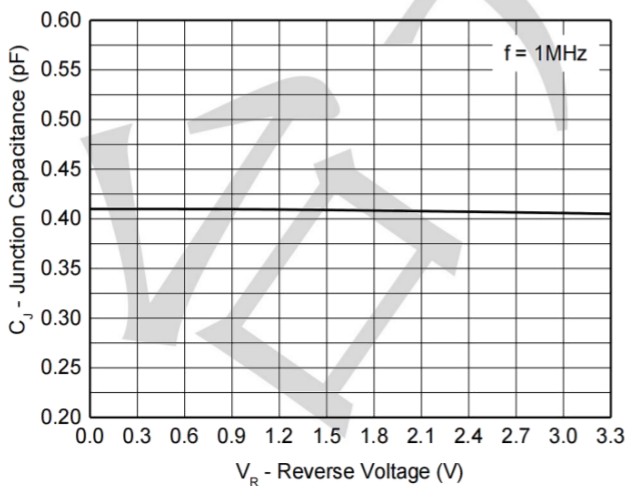
Clamping Voltage vs. Peak Pulse Current

TLP IV Curve



+8kV contact discharge per IEC61000-4-2

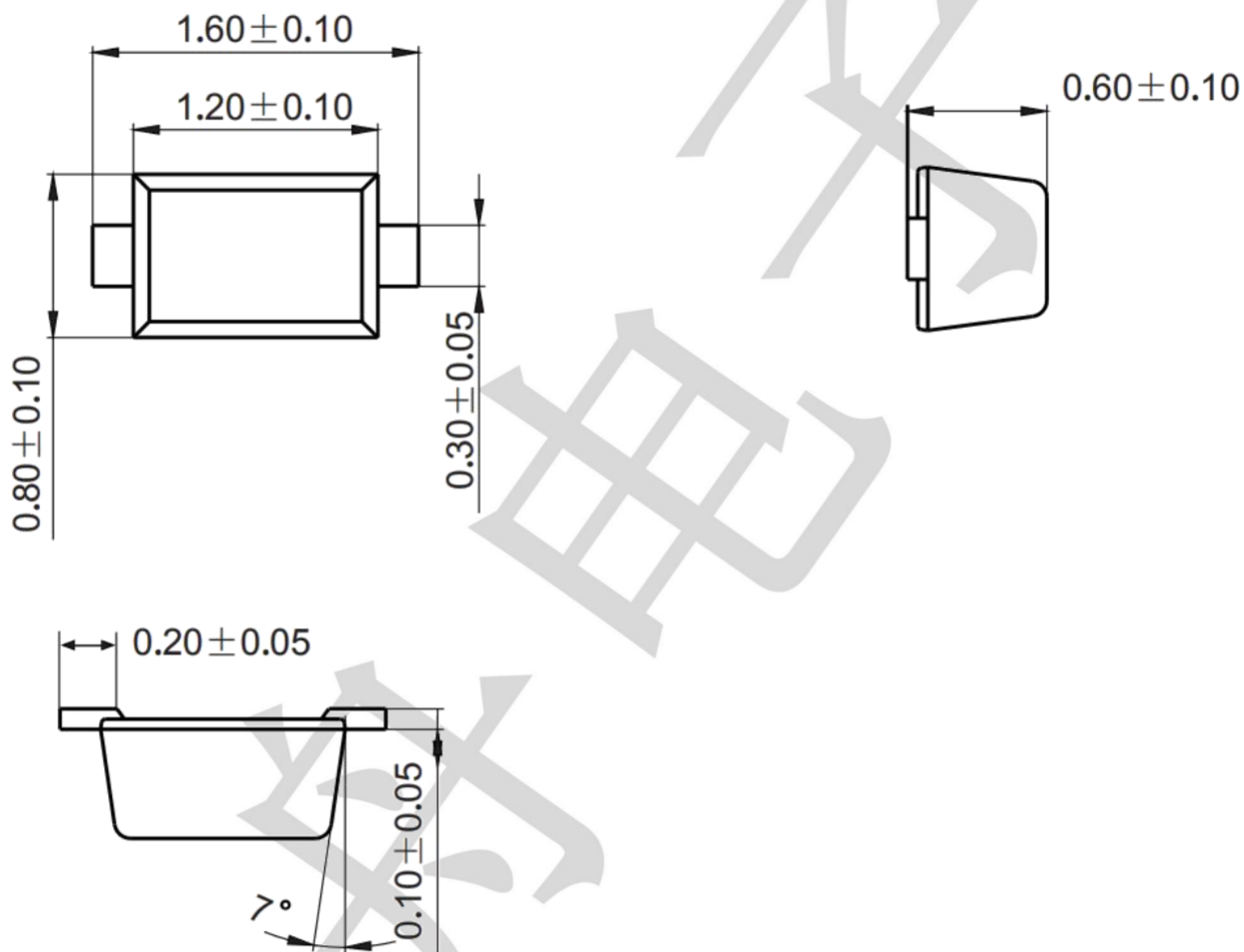
-8kV contact discharge per IEC61000-4-2



Capacitance vs. Reverse Voltage

Package Outline & Dimensions (unit: mm)

SOD523 (0603)



Mounting Pad Layout (unit: mm)

