SSCT5V022D3

1-line Bidirectional Micro Packaged TVS Diodes for ESD Protection

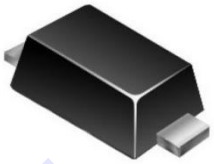
Description

The SSCT5V022D3 is designed to protect voltage sensitive component from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium. Because of its small size, it is suited for use in cellular phones, portable devices, digital cameras, power supplies and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as high speed line application. This device has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge).

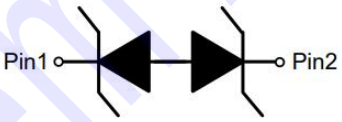
Feature

- 400W peak pulse power (t_P = 8/20us)
- SOD-523 Package
- Working voltage: 5V
- Low clamping voltage
- Low capacitance
- Low leakage current
- Response Time is<1 ns
- RoHS compliant
- IEC61000-4-2(ESD)±30kV(air), ±30kV(contact)
- IEC61000-4-5(Surge)20A(8/20us)

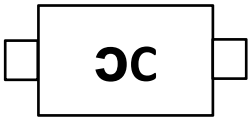
PIN configuration



SOD-523



Circuit diagram



Marking(Top View)

Applications

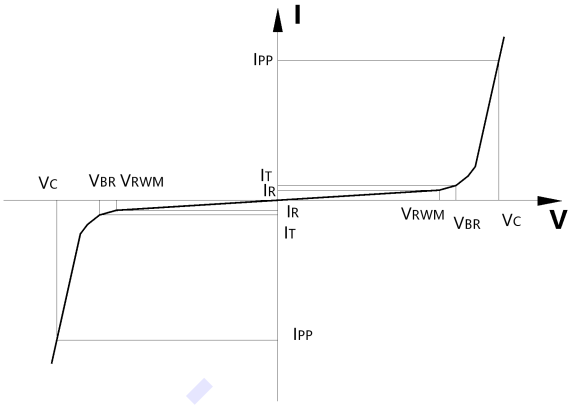
- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Serial and Parallel Ports
- Peripherals

Mechanical data

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

Electronic 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



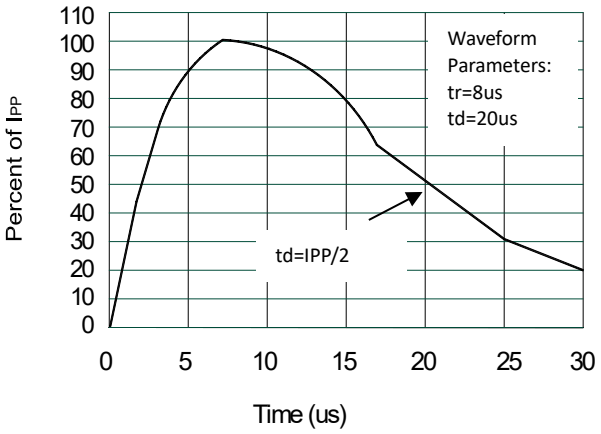
Absolute maximum rating @T_A=25℃

Parameter		Symbol	Value	Unit
Peak Pulse Power（8/20us）		P_{PP}	400	W
Peak Pulse Current（8/20us）		I_{PP}	20	A
ESD Rating per IEC61000-4-2：	Contact	V_{ESD}	30	kV
	Air		30	
Storage Temperature		T_{STG}	-55/+150	℃
Operating Temperature		T_J	-55/+125	℃

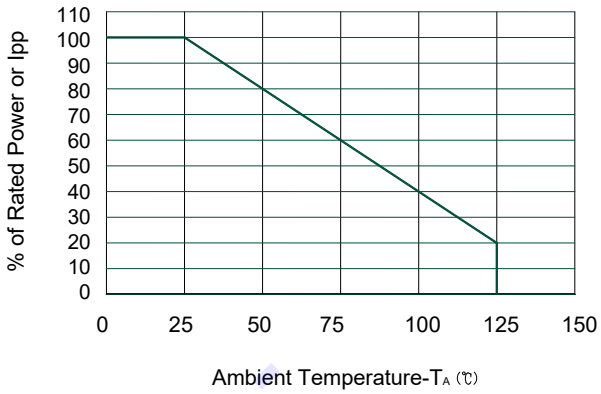
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	I_T = 1mA	5.8		8.0	V
Reverse Leakage Current	I_R	V_{RWM} =5V			1.0	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20us			9.8	V
Clamping Voltage	V_C	I_{PP}=20A, t_P = 8/20us		15	20	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		60	100	pF

Typical Performance Characteristics

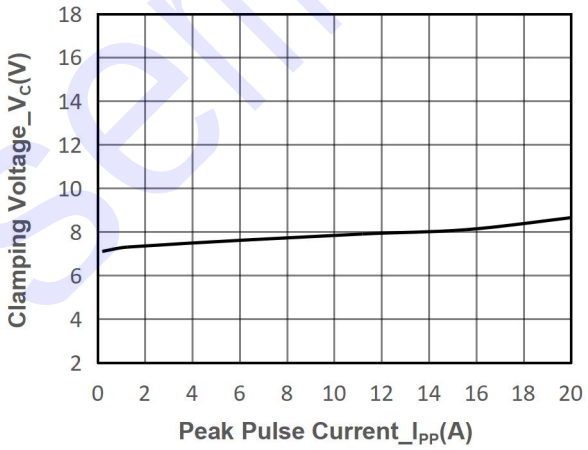


Pulse Waveform



Power Derating Curve

Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current

- **Package Information**

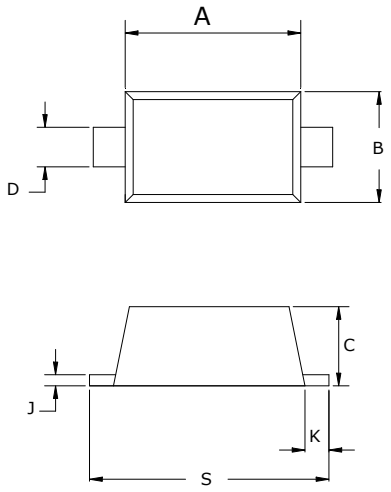
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT5V022D3	SOD-523	3000	7 Inch

Mechanical Data

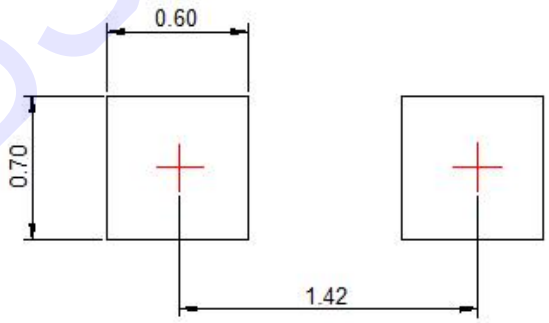
Case: SOD-523

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	1.10	1.30
B	0.70	0.85
C	0.50	0.77
D	0.25	0.38
J	0.07	0.15
K	0.15	0.25
S	1.50	1.70

Recommended Pad outline (Unit: mm)



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