



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), and EFT (electrical fast transients).

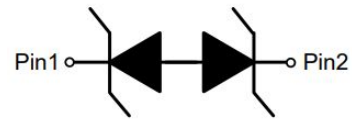
● Feature

- ✧ 400W peak pulse power ($t_p = 8/20\mu s$)
- ✧ SOD-523 Package
- ✧ Working voltage: 5V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ Response Time is $< 1\text{ ns}$
- ✧ RoHS compliant
- ✧ IEC61000-4-2(ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5(Surge)20A(8/20us)

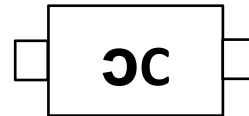
● PIN configuration



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

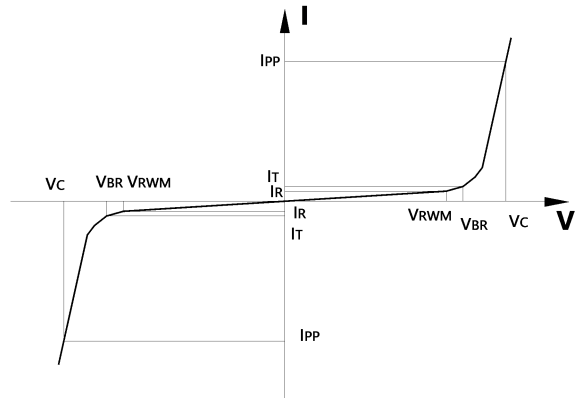
● Mechanical data

- ✧ Lead finish: 100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17 μm
- ✧ Pin flatness: $\leq 3\text{ mil}$



● 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 @ $T_A=25^{\circ}C$

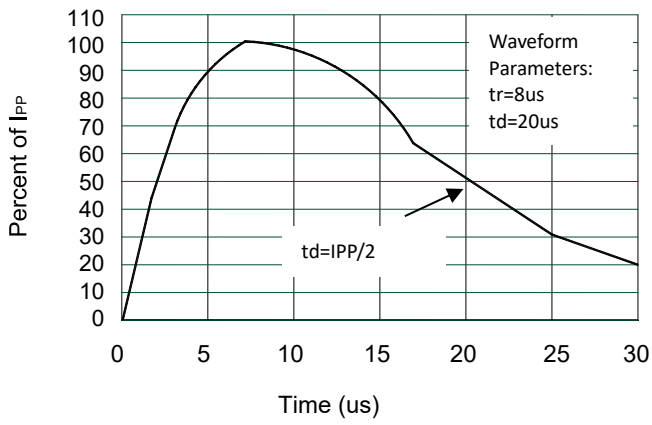
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	P_{PP}	400	W
Peak Pulse Current (8/20us)	I_{PP}	20	A
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Storage Temperature	T_{STG}	-55/+150	$^{\circ}C$
Operating Temperature	T_J	-55/+125	$^{\circ}C$

● Electrical Characteristics @ $T_A=25^{\circ}C$

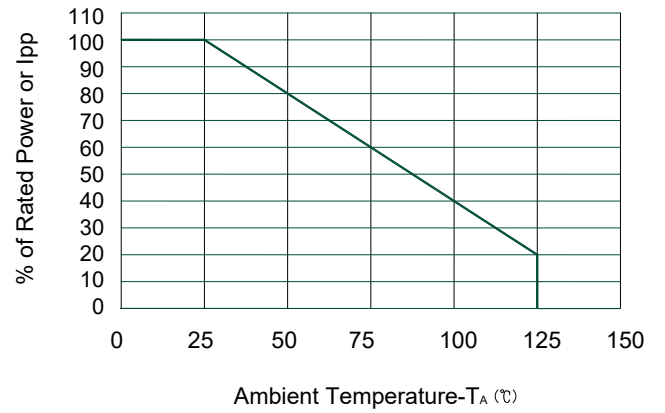
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1mA$	5.8		8.0	V
Reverse Leakage Current	I_R	$V_{RWM} = 5V$			1.0	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_p = 8/20us$			9.8	V
Clamping Voltage	V_C	$I_{PP} = 20A, t_p = 8/20us$		15	20	V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$		30	40	pF



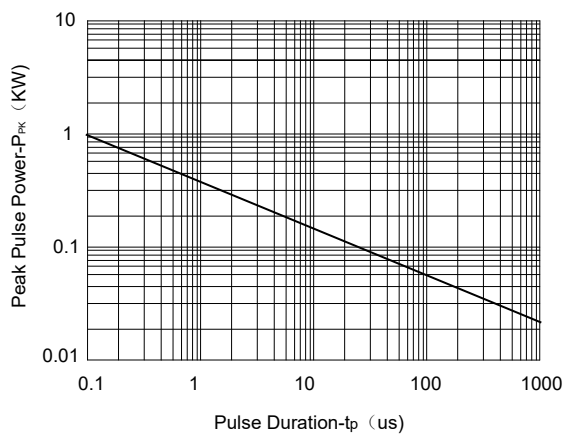
● Typical Performance Characteristics



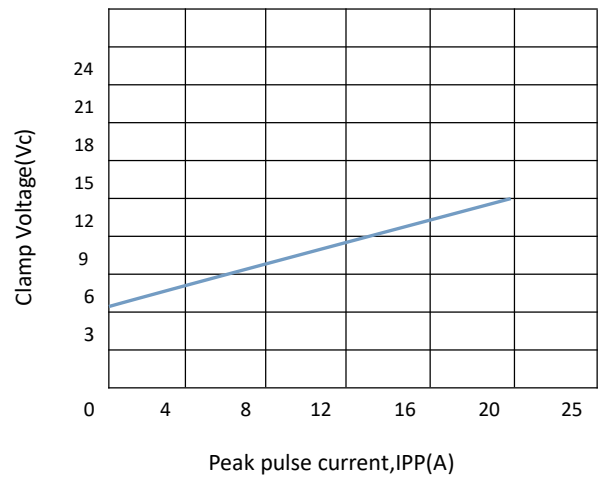
Pulse Waveform



Power Derating Curve



Non-Repetitive Peak Pulse Power vs. Pulse Time



Clamping Voltage Vs Peak Pulse



● Package Information

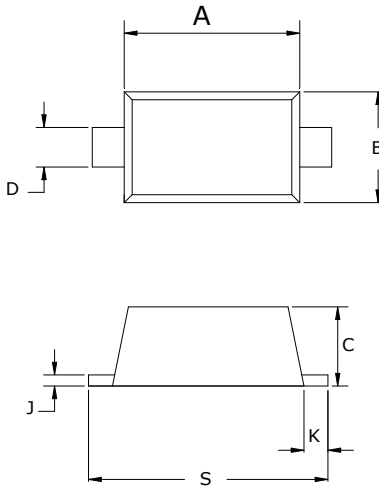
Ordering Information

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

Mechanical Data

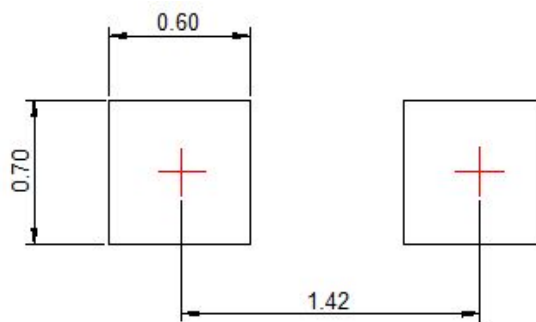
Case:SOD-523

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	1.10	1.30
B	0.75	0.85
C	0.51	0.70
D	0.25	0.35
J	0.08	0.15
K	0.15	0.25
S	1.50	1.70

Recommended Pad outline





- **History Version**

V1.0	Product datasheet	2021-06-04
V1.1	1.Add Marking 2.Update Typical Performance Characteristics	2022-05-13

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