SSCE5V021D3

1-line Uni-directional Micro Packaged TVS Diodes for ESD Protection

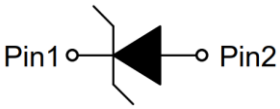
Description

The SSCE5V012D3 is designed to protect voltage sensitive components from ESD. Excellent clamping capability,low leakage,and fast response time provide best in class protection on designs that are exposed to ESD.Because of its small size,it is suited for use in cellular phones,MP3 players,digital cameras and many other portable applications where board space comes at a premium.

It 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).

PIN configuration

SOD-523



Circuit diagram

Marking(Top View)

Feature

- 50W 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)±15kV(air),±8kV(contact)
- IEC61000-4-4 (EFT) 40A (5/50 ns)
- IEC61000-4-5(Surge)4A(8/20us)

Applications

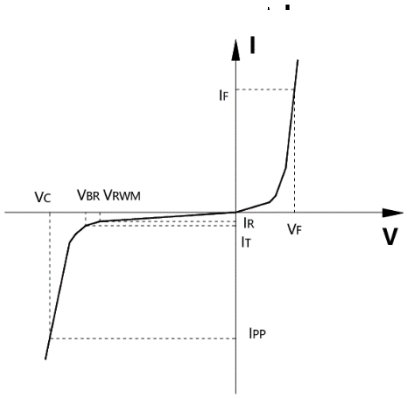
- USB 1.0/2.0/3.0/4.0, VGA, DVI, SDI
- DVI & HDMI Port Protection
- Serial and Parallel Ports
- Mobile Handsets
- Notebooks, Desktops, Servers
- High Speed Line
- Portable instrumentation

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



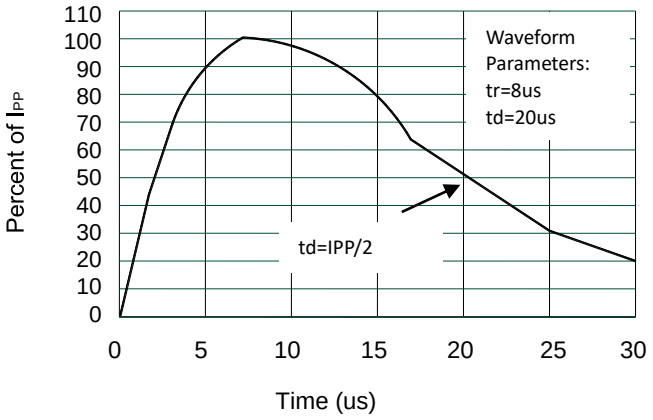
- **Absolute maximum rating @TA=25℃**

Parameter	Symbol	Value	Unit
Peak Pulse Power（8/20us）	P_{PP}	50	W
Peak Pulse Current（8/20us）	I_{PP}	4	A
ESD Rating per IEC61000-4-2： Contact Air	V_{ESD}	8 15	KV
Storage Temperature	T_{STG}	-55/+150	℃
Operating Temperature	T_J	-55/+125	℃

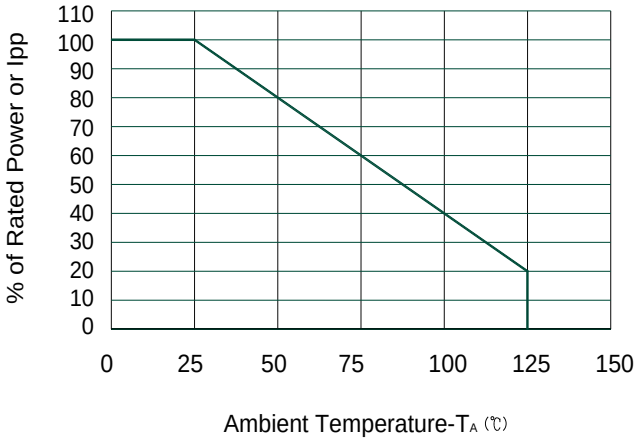
- **Electrical Characteristics @TA=25℃**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	I_T = 1mA	6			V
Reverse Leakage Current	I_R	V_{RWM} =5V			1	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20us			10	V
Clamping Voltage	V_C	I_{PP}=4A, t_P = 8/20us			15	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		0.5	1	pF

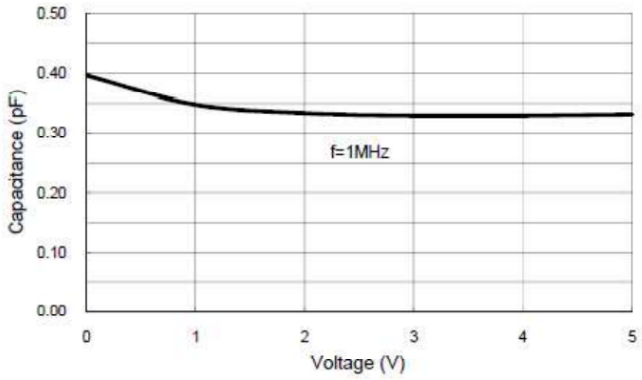
Typical Performance Characteristics



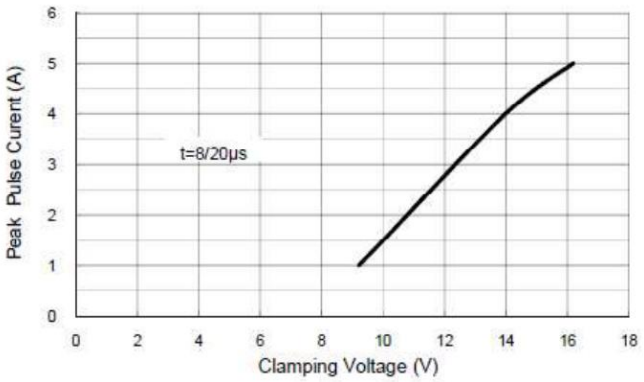
Pulse Waveform



Power Derating Curve



Voltage vs Capacitance(pF)



Clamping Voltage Vs Peak Pulse Current(A)

Package Information

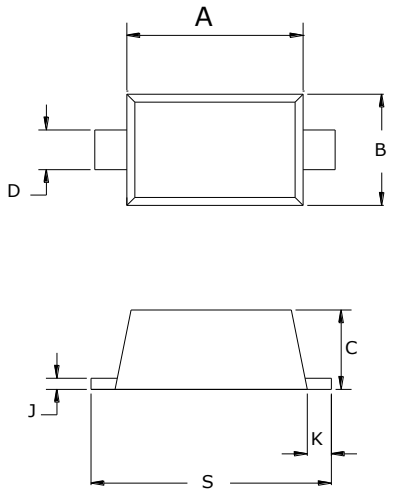
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V021D3	SOD-523	3000	7 Inch

Mechanical Data

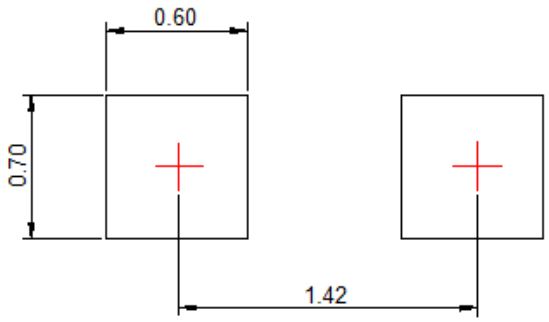
Case:SOD-523

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



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