



## SSCE3V312D3

1-line Bidirectional Micro Packaged TVS Diodes for ESD Protection

### ● Description

The SSCE3V312D3 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).

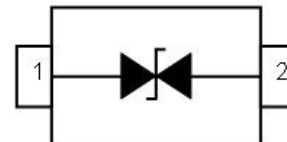
### ● Feature

- ✧ 400W peak pulse power ( $t_p = 8/20\mu s$ )
- ✧ SOD-523 Package
- ✧ Working voltage: 3.3V
- ✧ 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) 23A(8/20 $\mu s$ )

### ● PIN configuration



**SOD-523**



**Top View**

### ● Applications

- ✧ Cellular handsets and accessories
- ✧ Portable instrumentation
- ✧ Peripherals
- ✧ Serial and Parallel Ports
- ✧ Notebooks, Desktops, Servers
- ✧ Projection TV

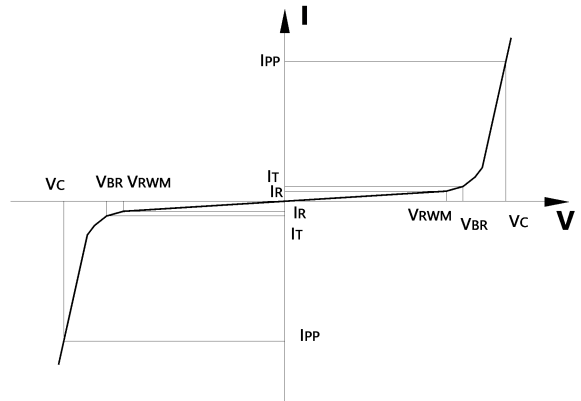
### ● Mechanical data

- ✧ Lead finish: 100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 1 requirements
- ✧ Pure tin plating: 7 ~ 17  $\mu m$
- ✧ 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 @TA=25°C

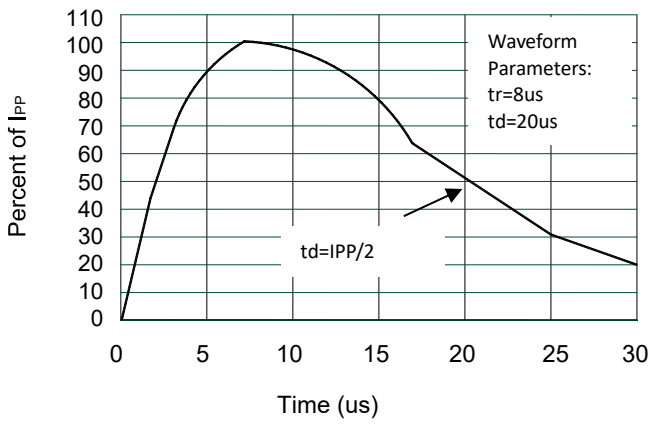
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	$P_{PP}$	400	W
Peak Pulse Current (8/20us)	$I_{PP}$	23	A
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Storage Temperature	$T_{STG}$	-55/+150	°C
Operating Temperature	$T_J$	-55/+125	°C

## ● Electrical Characteristics @TA=25°C

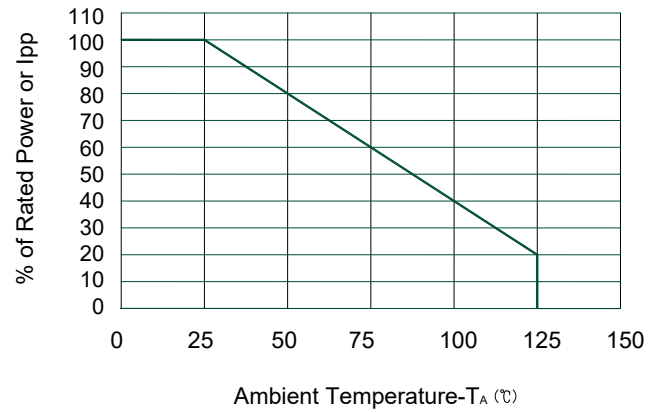
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				3.3	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	3.8		6	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 3.3V$			0.1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A, t_p = 8/20us$			6.5	V
Clamping Voltage	$V_C$	$I_{PP} = 23A, t_p = 8/20us$		13	18	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		35	50	pF



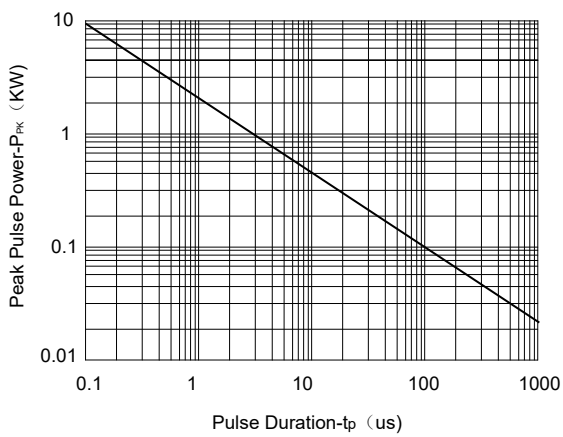
## ● Typical Performance Characteristics



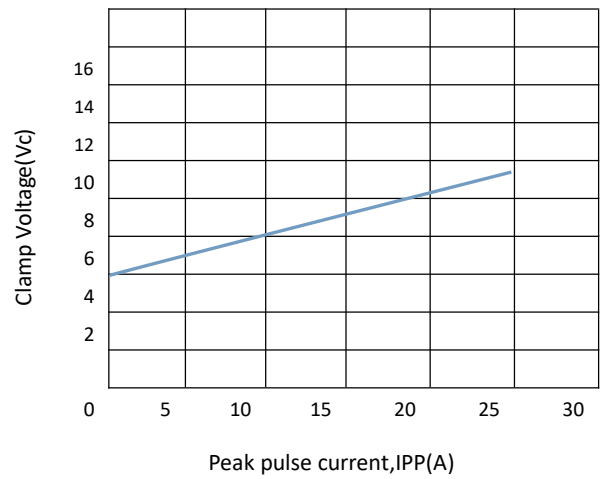
**Pulse Waveform**



**Power Derating Curve**



**Non-Repetitive Peak Pulse Power vs. Pulse Time**



**Clamping Voltage Vs Peak Pulse**



## ● Package Information

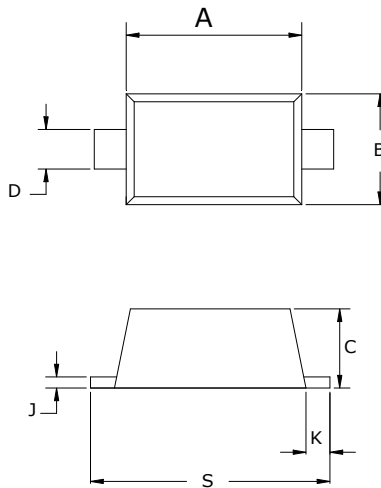
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE3V312D3	SOD-523	3000	7 Inch

### Mechanical Data

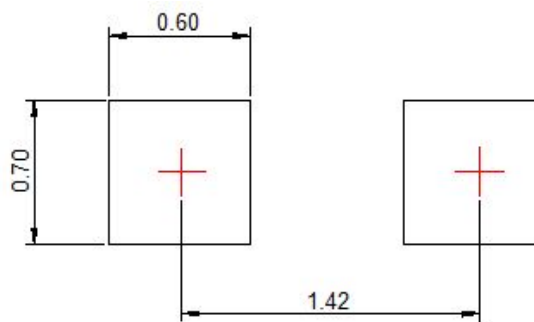
Case:SOD-523

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**

V2.0	Product datasheet	2020-07-15
V2.1	1.Update electrical characteristic parameters 2.Update Typical Performance Characteristics	2022-05-10

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