



## SSCE24V12D3

1-line Bidirectional Micro Packaged TVS Diodes for ESD Protection

### ● Description

The SSCE24V12D3 is 24V bi-direction TVS technology 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.

The SSCE24V12D3 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

- ✧ 300W peak pulse power ( $t_P = 8/20\mu s$ )
- ✧ SOD-523 Package
- ✧ Working voltage: 24V
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30kV$   
Contact discharge:  $\pm 25kV$
  - IEC61000-4-5 (Lightning) 5A (8/20 $\mu s$ )
- ✧ RoHS compliant

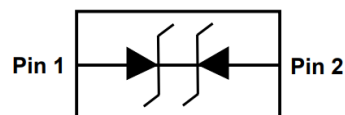
### ● Applications

- ✧ Serial and Parallel Ports
- ✧ Notebooks, Desktops, Servers
- ✧ Projection TV
- ✧ Cellular handsets and accessories
- ✧ Portable instrumentation
- ✧ Peripherals
- ✧ MP3 Players

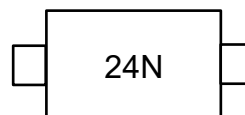
### ● PIN configuration



**SOD-523**



**Circuit diagram**



**Marking (Top View)**

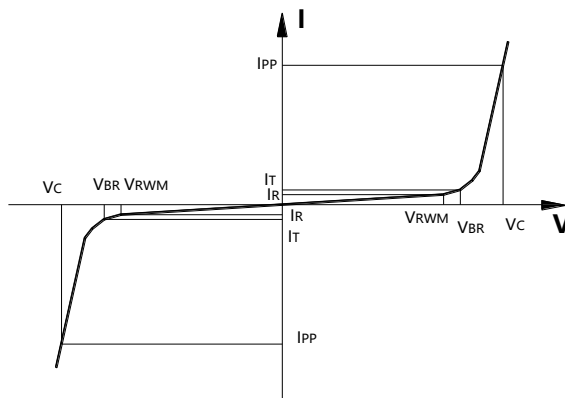
### ● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL3 requirements
- ✧ Pure tin plating: 7 ~ 17  $\mu m$
- ✧ Pin flatness:  $\leq 3mil$



## ● 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 @ $T_A=25^{\circ}\text{C}$

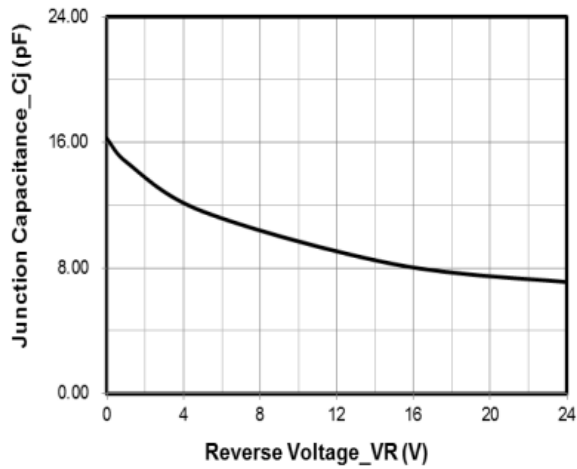
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PP}$	300	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{PP}$	5	A
ESD Rating per IEC61000-4-2: Contact Air	$V_{ESD}$	25 30	kV
Storage Temperature	$T_{STG}$	-55/+150	$^{\circ}\text{C}$
Operating Temperature	$T_J$	-55/+125	$^{\circ}\text{C}$

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

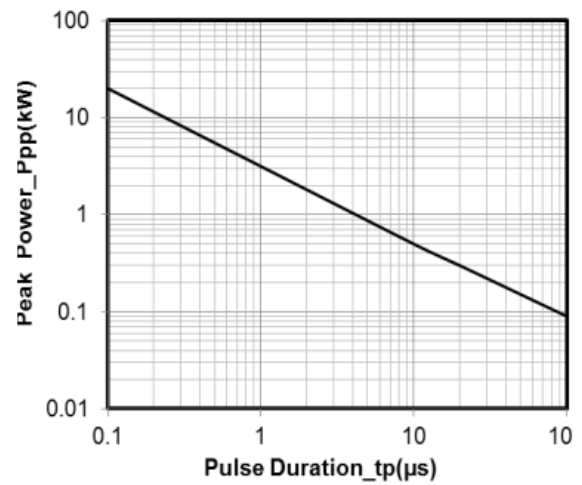
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				24	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	26.7			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 24\text{V}$			0.2	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$		36	40	V
Clamping Voltage	$V_C$	$I_{PP} = 5\text{A}$ , $t_P = 8/20\mu\text{s}$			60	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		16	20	pF



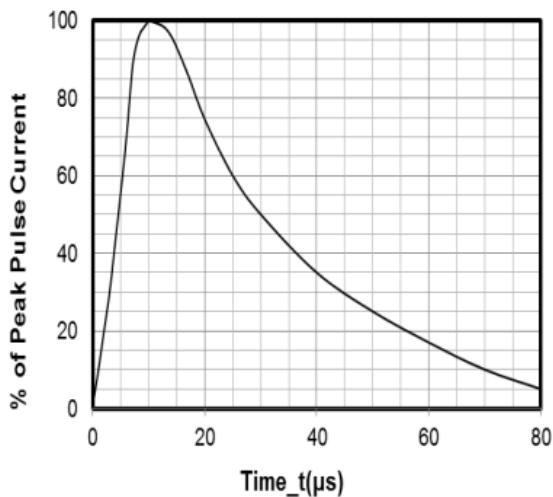
## ● Typical Performance Characteristics



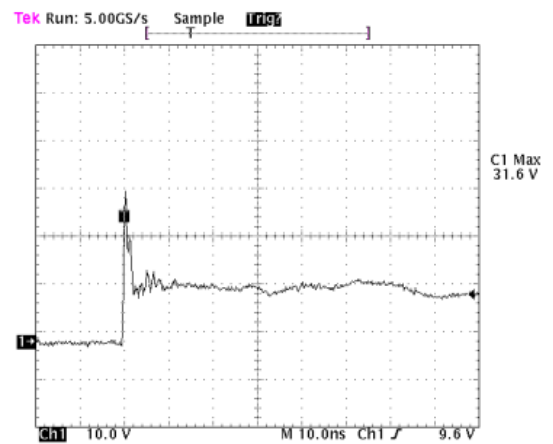
Junction Capacitance vs. Reverse Voltage



Peak Pulse Power vs. Pulse Time



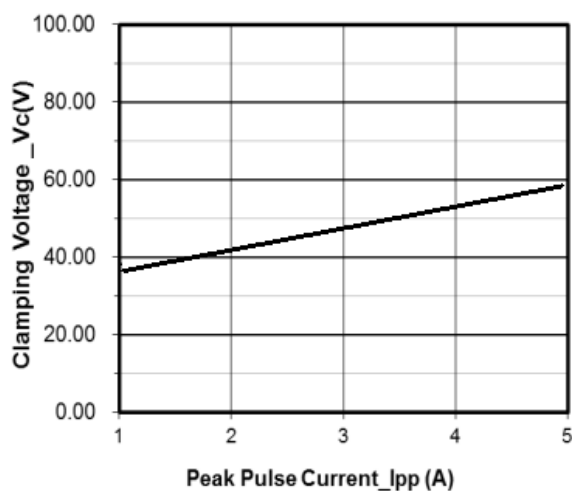
8 X 20 $\mu$ s Pulse Waveform



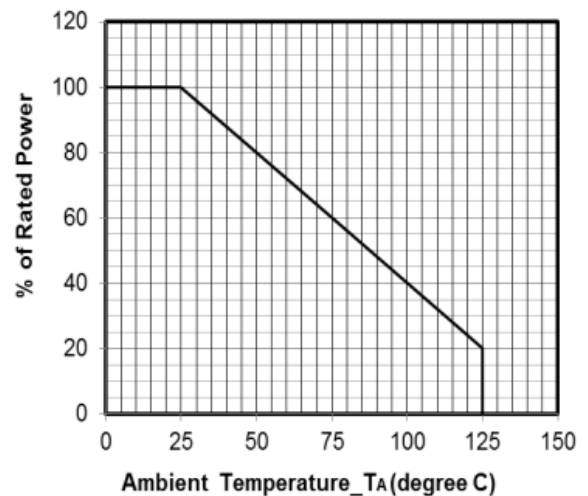
Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2



Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



## ● Package Information

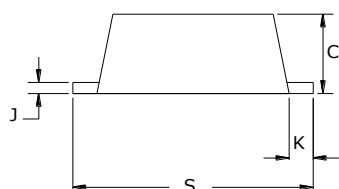
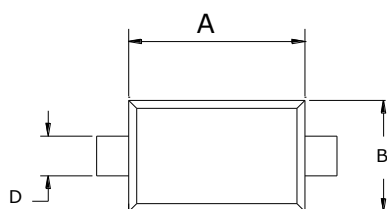
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE24V12D3	SOD-523	3000	7 Inch

### Mechanical Data

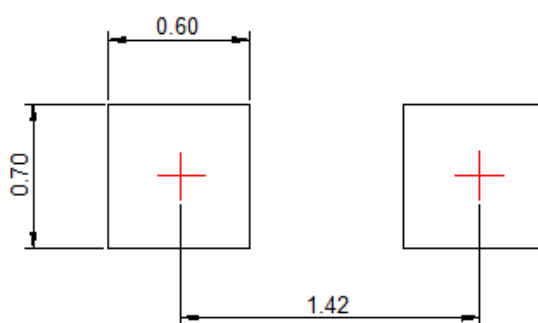
Case: SOD-523

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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