



## SSCT7V011D2

1-line Uni-directional Micro Packaged TVS Diode

### ● Description

The SSCT7V011D2 is an Uni-directional high power TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line. It complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into an ultra-small lead free SOD-323 package.

The small size and high ESD surge protection make SSCT7V011D2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

### ● Feature

- ✧ 2800W peak pulse power ( $t_P = 8/20\mu\text{s}$ )
- ✧ SOD-323 Package
- ✧ Working voltage: 7V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ Response Time is  $< 1\text{ ns}$
- ✧ RoHS compliant
- ✧ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Surge) 130A (8/20 $\mu\text{s}$ )

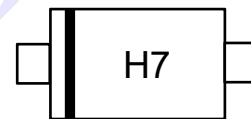
### ● PIN configuration



**SOD-323**



**Circuit diagram**



**Marking(Top View)**

### ● Applications

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

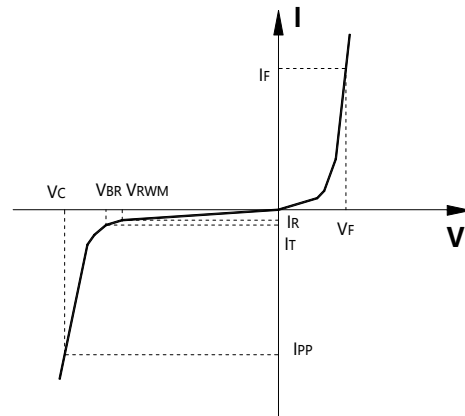
### ● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature:  $260^\circ\text{C}$
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating:  $7 \sim 17\ \mu\text{m}$
- ✧ 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 @ $T_A=25^\circ\text{C}$

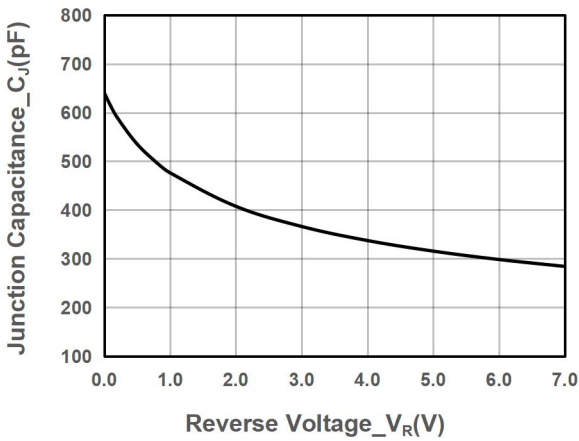
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	$P_{PP}$	2800	W
Peak Pulse Current (8/20us)	$I_{PP}$	130	A
ESD Rating per IEC61000-4-2:	Contact Air	$V_{ESD}$	30
			30
Storage Temperature	$T_{STG}$	-55/+150	$^\circ\text{C}$
Operating Temperature	$T_J$	-55/+125	$^\circ\text{C}$

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

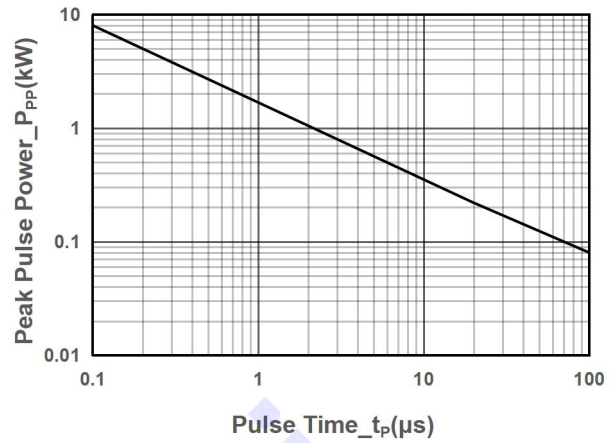
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				7	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	7.8			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 7\text{V}$			1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 10\text{A}$ , $t_P = 8/20\mu\text{s}$		9.5		V
Clamping Voltage	$V_C$	$I_{PP} = 130\text{A}$ , $t_P = 8/20\mu\text{s}$		19	22	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		800	1100	pF



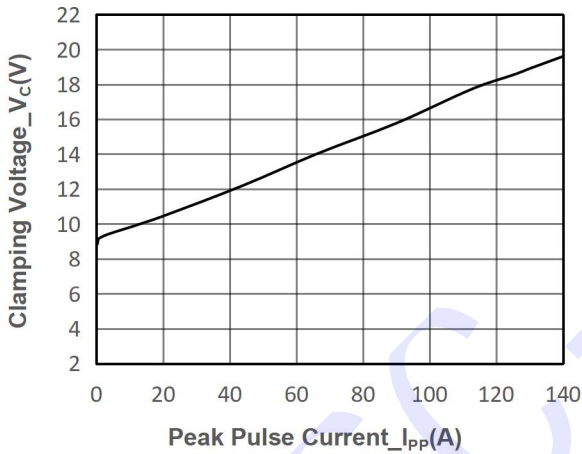
## ● Typical Performance Characteristics



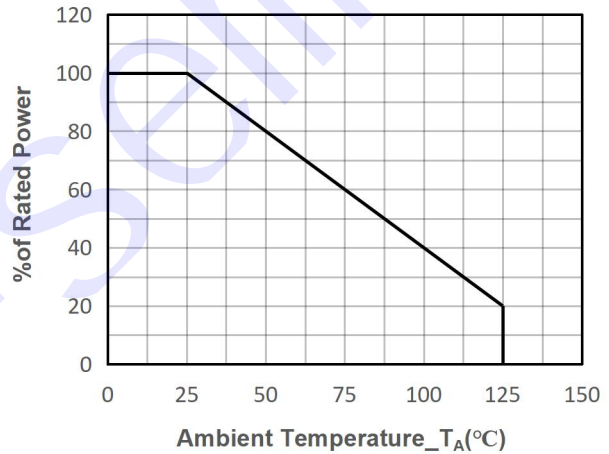
Junction Capacitance vs. Reverse Voltage



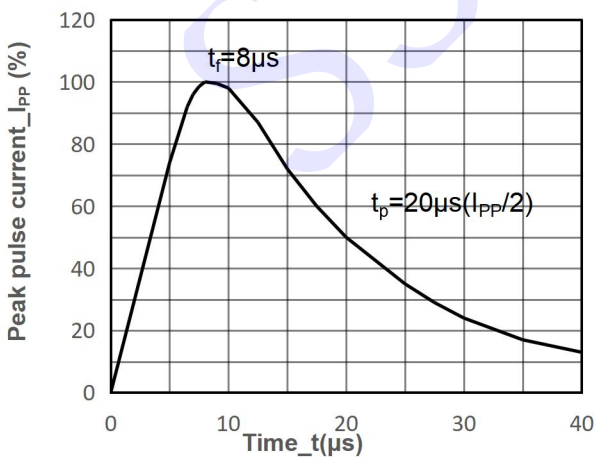
Peak Pulse Power vs. Pulse Time



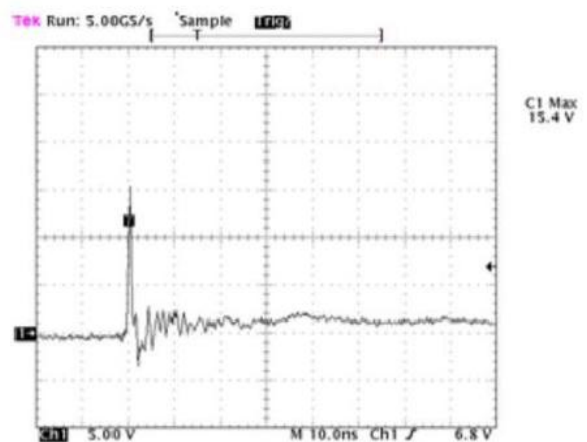
Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



8/20  $\mu$ s Pulse Waveform



Note: Data is taken with a 10x attenuator  
ESD Clamping Voltage 8kV contact per IEC61000-4-2



- Package Information

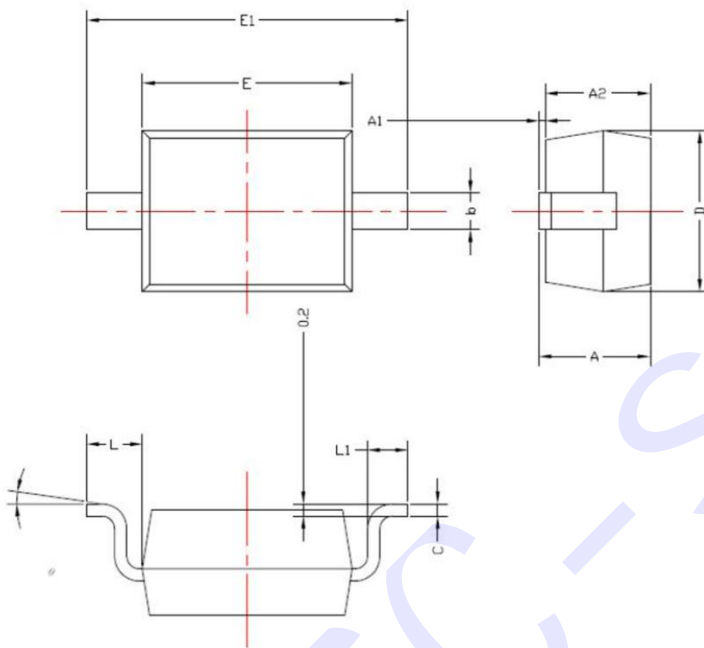
## Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT7V011D2	SOD-323	3000	7 Inch

## Mechanical Data

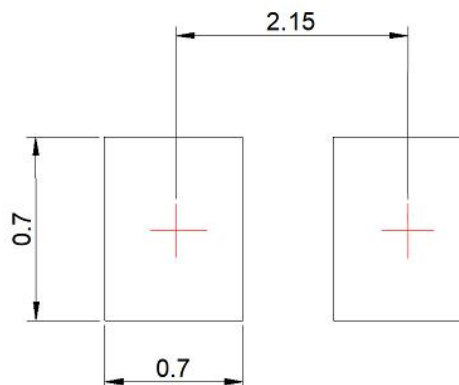
Case: SOD-323

Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	Min	Max
A	0.75	1.05
A1	0.00	0.10
A2	0.75	0.95
b	0.20	0.40
c	0.08	0.15
D	1.20	1.40
E	1.60	1.80
E1	2.45	2.75
L	0.475REF	
L1	0.20	0.40
$\theta$	0°	8°

## Recommended Pad outline ( Unit: mm)





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