



SSCE5V011S8

2-Line Ultra Low Capacitance TVS Diode

● Description

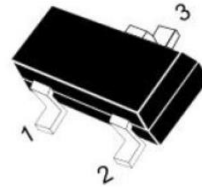
The SSCE5V011S8 is an uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The SSCE5V011S8 has an ultra-low capacitance with a typical value at 0.3pF, and complies with the IEC 61000-4-2 (ESD) standard with $\pm 25\text{kV}$ air and $\pm 20\text{kV}$ contact discharge. It is assembled into a lead-free SOT-523 package.

The small size, ultra-low capacitance and high ESD surge protection make SSCE5V011S8 an ideal choice to protect cell phone, digital video interfaces and other high speed ports.

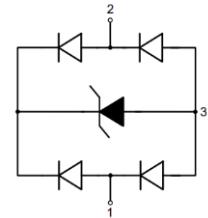
● Feature

- ✧ 80W peak pulse power ($t_P = 8/20\mu\text{s}$)
- ✧ SOT-523 Package
- ✧ Working voltage: 5V
- ✧ Ultra low capacitance: 0.3pF typical
- ✧ Low clamping voltage
- ✧ Low leakage current
- ✧ RoHS compliant
- ✧ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 25\text{kV}$
 - Contact discharge: $\pm 20\text{kV}$
 - IEC61000-4-5 (Surge) 5A (8/20 μs)

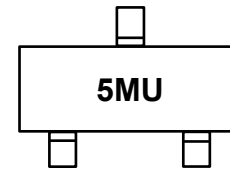
● PIN configuration



SOT-523



Circuit diagram



Marking(Top view)

● Applications

- ✧ Cellular Handsets and Accessories
- ✧ Display Ports
- ✧ MDDI Ports
- ✧ USB 2.0 and 3.0 Ports
- ✧ HDMI 1.3 and 1.4
- ✧ Digital Visual Interface (DVI)
- ✧ PCI Express and Serial SATA Ports
- ✧ Notebook Computer

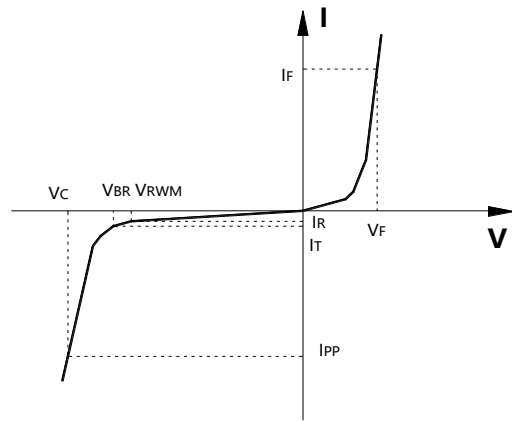
● Mechanical data

- ✧ 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 ~ 17 μm



● 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 @ $T_A=25^\circ\text{C}$

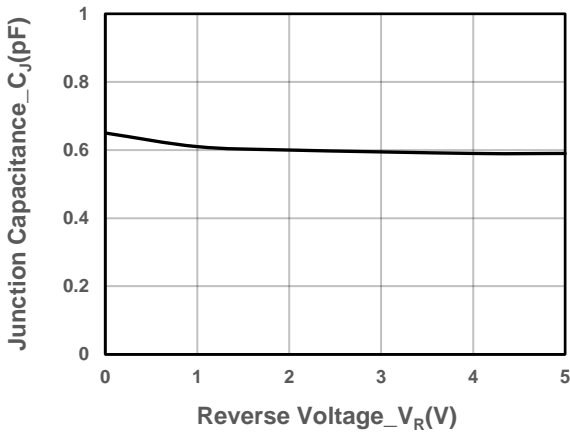
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PP}	80	W
Peak Pulse Current (8/20 μs)	I_{PP}	5	A
ESD Rating per IEC61000-4-2:	Contact	20	kV
	Air	25	
Storage Temperature	T_{STG}	-55/+150	$^\circ\text{C}$
Operating Temperature	T_J	-55/+125	$^\circ\text{C}$

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

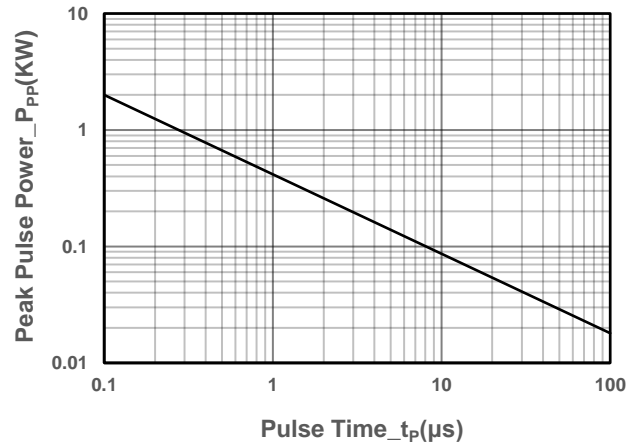
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5\text{V}$			0.5	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$, $t_P = 8/20\mu\text{s}$			9	V
Clamping Voltage	V_C	$I_{PP} = 5\text{A}$, $t_P = 8/20\mu\text{s}$			16	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, between I/O pins, between pin1 and pin2		0.3	0.4	pF
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to GND, between pin1 or pin2 to pin3		0.6	0.8	pF



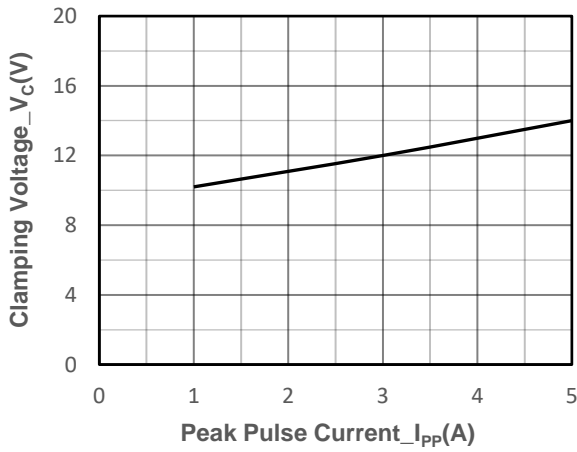
● Typical Performance Characteristics



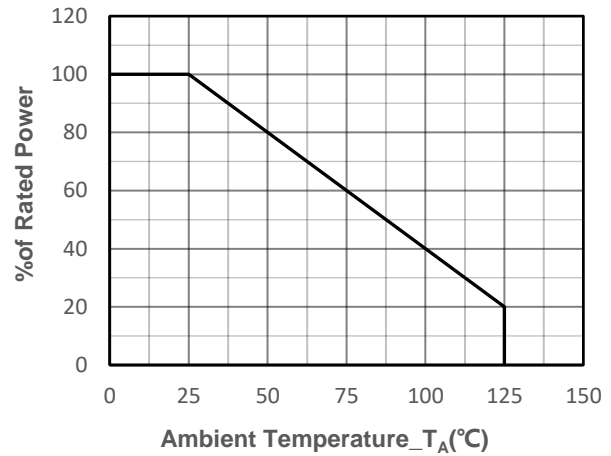
Junction Capacitance vs. Reverse Voltage



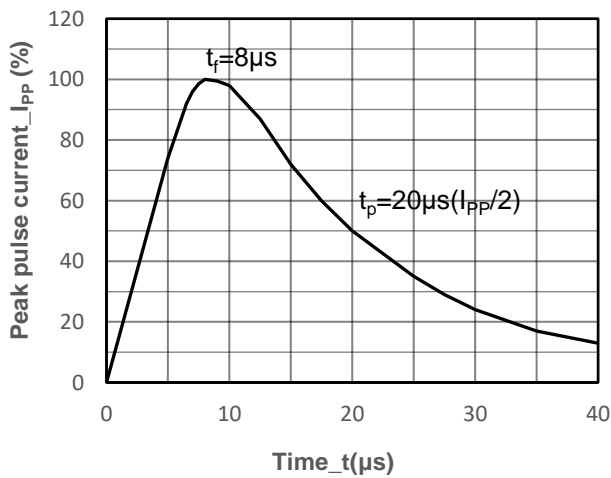
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



8/20us Pulse Waveform



● Package Information

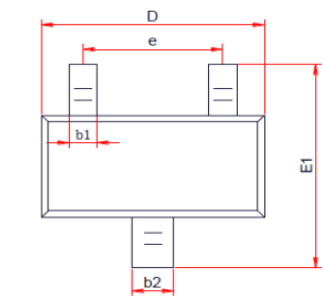
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V011S8	SOT-523	3000	7 Inch

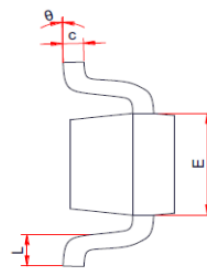
Mechanical Data

Case:SOT-523

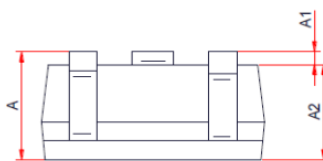
Case Material: Molded Plastic. UL Flammability



TOP VIEW



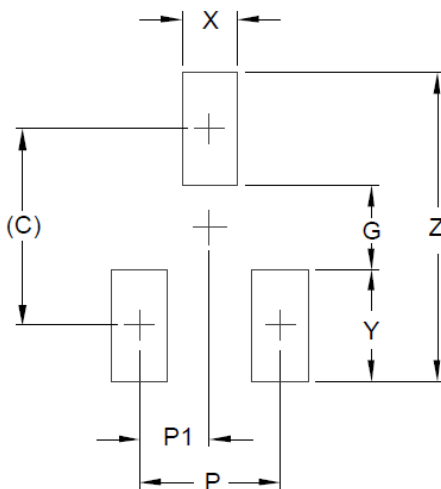
SIDE VIEW



SIDE VIEW

DIM	Millimeters		
	Min.	Typ.	Max.
A	0.60	-	0.90
A1	0.00	-	0.10
A2	0.60	0.75	0.80
b1	0.15	0.20	0.25
b2	0.15	0.20	0.30
c	0.10	-	0.20
D	1.50	1.60	1.70
E	0.75	0.80	0.85
E1	1.45	1.60	1.75
e	1.00BSC		
L	0.17	-	-

Recommended Pad outline



Dimensions	
DIM	Millimeters
c	(1.40)
p	1.00
p1	0.50
G	0.60
X	0.40
Y	0.80
Z	2.20



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