



## SSCE5V011S5

### 4-Line Ultra Low Capacitance Array for ESD Protection

#### ● Description

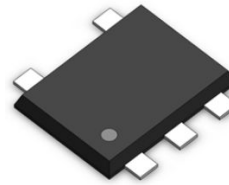
The SSCE5V011S5 is a low capacitance TVS array, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines. The SSCE5V011S5 has low capacitance with a typical value at 3.5pF, and complies with the IEC 61000-4-2 (ESD) standard with  $\pm 15\text{kV}$  air and  $\pm 8\text{kV}$  contact discharge. It is assembled into a 5-pin lead-free SOT-553 package.

The combination of small size, low capacitance and high level of ESD protection makes it ideal for cellular, notebooks, desktops, and other portable application.

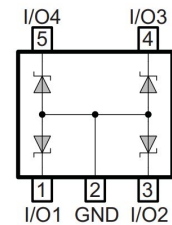
#### ● Feature

- ✧ 24W peak pulse power ( $t_p = 8/20\mu\text{s}$ )
- ✧ SOT-553 Package
- ✧ Working voltage: 5V
- ✧ Low capacitance: 3.5pF typical (I/O to I/O)
- ✧ Low clamping voltage
- ✧ Low leakage current
- ✧ RoHS compliant
- ✧ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 15\text{kV}$
    - Contact discharge:  $\pm 8\text{kV}$
  - IEC61000-4-4 (EFT) 40A (5/50ns)

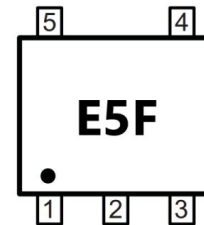
#### ● PIN configuration



**SOT-553**



**Circuit diagram**



**Marking(Top view)**

#### ● Applications

- ✧ Cellular Handsets and Accessories
- ✧ Personal Digital Assistants
- ✧ Notebooks and Handhelds
- ✧ Portable Instrumentation
- ✧ Digital Cameras
- ✧ Peripherals
- ✧ Audio Players
- ✧ Keypads, Side Keys, LCD Displays

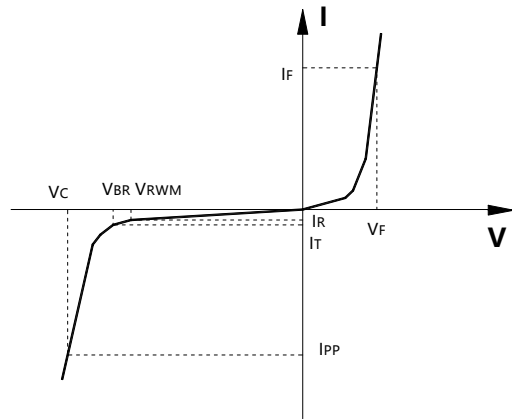
#### ● Mechanical data

- ✧ Lead finish: 100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature:  $260^\circ\text{C}$
- ✧ Device meets MSL 1 requirements
- ✧ Pure tin plating:  $7 \sim 17 \mu\text{m}$



## ● 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)	$P_{PP}$	24	W
Peak Pulse Current (8/20us)	$I_{PP}$	2	A
ESD Rating per IEC61000-4-2:	Contact	8	KV
	Air	15	
Storage Temperature	$T_{STG}$	-55/+150	°C
Operating Temperature	$T_J$	-55/+125	°C

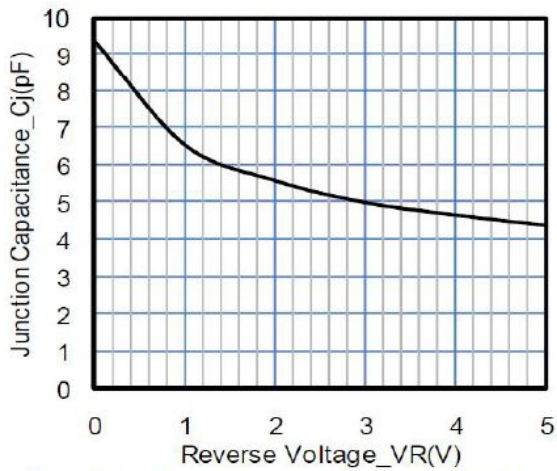
## ● Electrical Characteristics @TA=25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	6			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V$			0.1	uA
Clamping Voltage	$V_C$	$I_{PP} = 1A, t_p = 8/20us$			10.5	V
Clamping Voltage	$V_C$	$I_{PP} = 2A, t_p = 8/20us$			12	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz, I/O$ to I/O		3.5		pF
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz, I/O$ to GND		8		pF

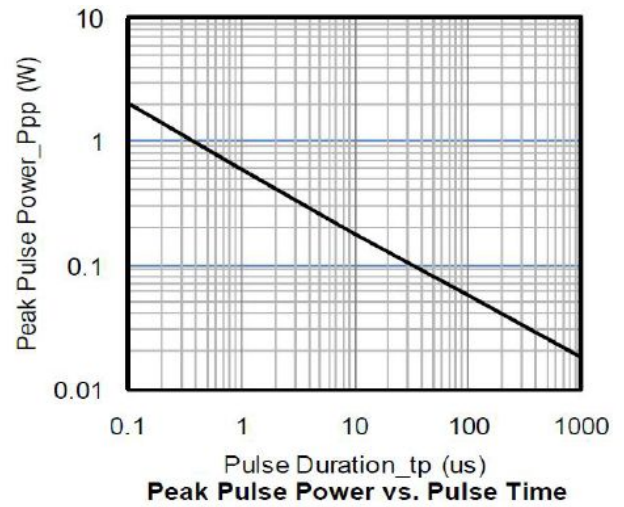
Note 1: I/O pins are Pin 1, 3, 4 and 5



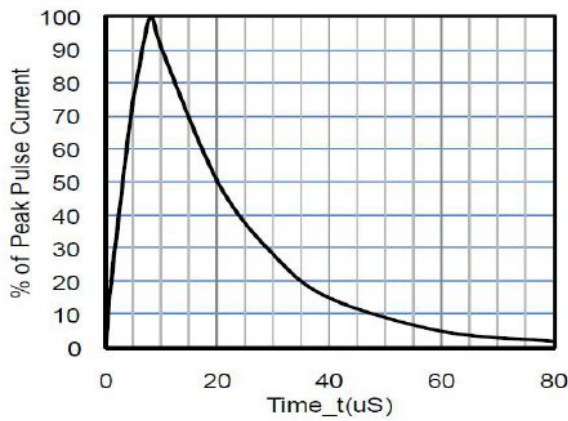
## ● Typical Performance Characteristics



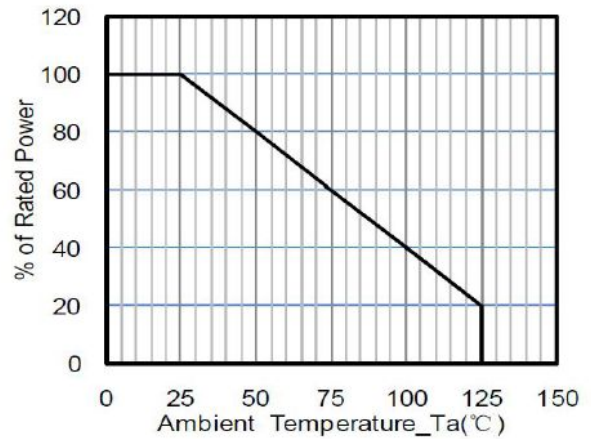
**Junction Capacitance vs. Reverse Voltage**



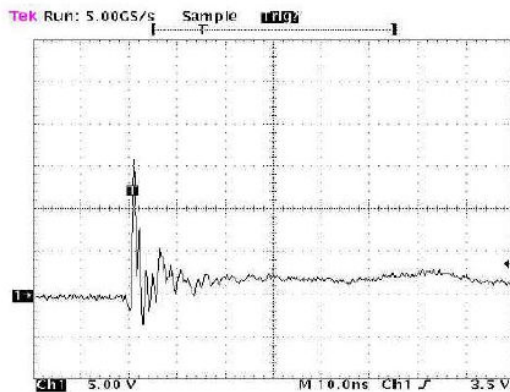
**Peak Pulse Power vs. Pulse Time**



**8 X 20uS Pulse Waveform**



**Power Derating Curve**



**ESD Clamping Voltage**

**8 kV Contact per IEC61000-4-2**



- **Package Information**

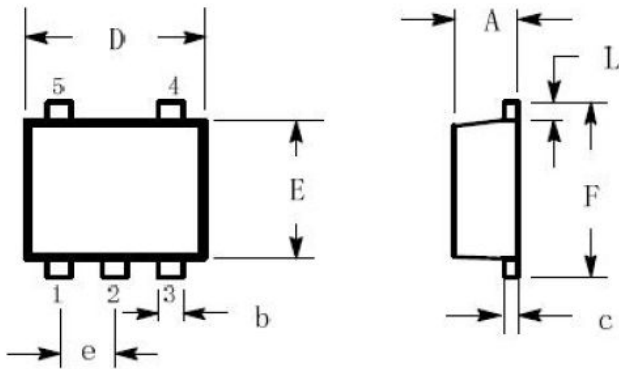
## Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V011S5	SOT-553	3000	7 Inch

## Mechanical Data

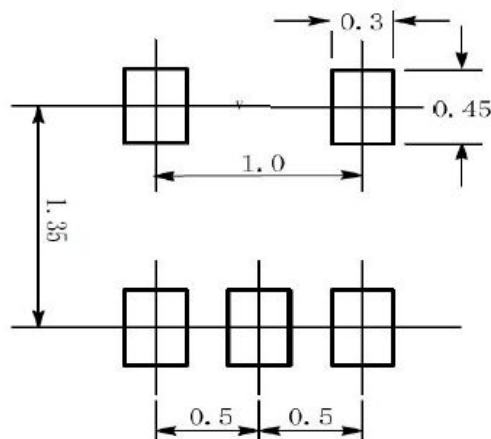
Case:SOT-553

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters		
	Min.	Typ.	Max.
A	0.50	0.55	0.60
b	0.17	0.22	0.27
c	0.08	0.13	0.18
D	1.50	1.60	1.70
e	0.50BSC		
E	1.10	1.20	1.30
L	0.10	0.20	0.30
F	1.50	1.70	1.80

## Recommended Pad outline(Unit: mm)





- **History Version**

V1.0	First edition	2021-06-04
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