



## SSCE5V012D2

### Bidirectional Ultra-low Capacitance TVS ARRAY

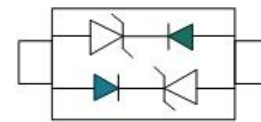
#### ● Description

The SSCE5V012D2 is ultra-low capacitance transient voltage suppressor array, designed to protect applications such as portable electronics and SMART phones. At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This series offers an ultra low capacitance and low leakage current in a miniature SOD-323 package.

#### ● Feature

- ◇ 350W peak pulse power ( $t_P = 8/20\mu s$ )
- ◇ SOD-323 Package
- ◇ Working voltage: 5V
- ◇ Low clamping voltage
- ◇ Low capacitance
- ◇ RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)

#### ● PIN configuration



Top view



Marking

#### ● Applications

- ◇ Hand-Held Portable Applications
- ◇ Networking and Telecom(Ethernet 10/100/1000 Base T)
- ◇ USB Interface
- ◇ Automotive Electronics
- ◇ Serial and Parallel Ports
- ◇ Notebooks, Desktops, Servers

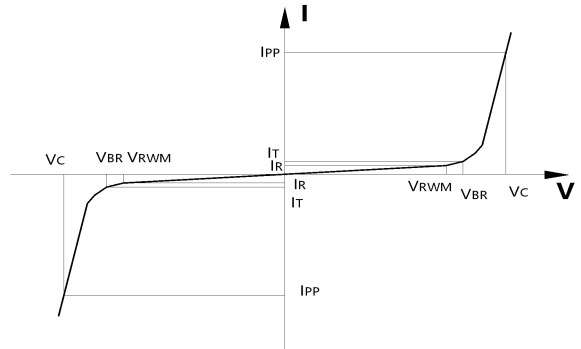
#### ● Mechanical data

- ◇ 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:  $\leq 3mil$



## ● 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
$C$	Junction Capacitance



## ● Absolute maximum rating @TA=25°C

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	$P_{PP}$	350	W
Peak Pulse Current (tp=8/20μs waveform)	$I_{PP}$	18	A
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Operating Temperature Range	$T_J$	-55 ~ 150	°C
Storage Temperature Range	$T_{STG}$	-55 ~ 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	$T_L$	260	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

\*Other voltages may be available upon request.

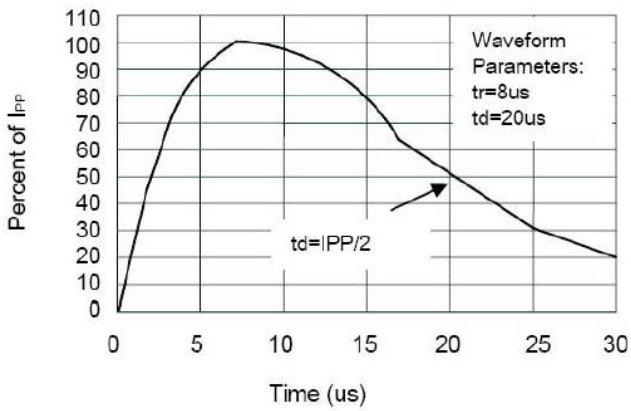
1. Non-repetitive current pulse, per Figure 1.

## ● Electrical Characteristics @TA=25°C

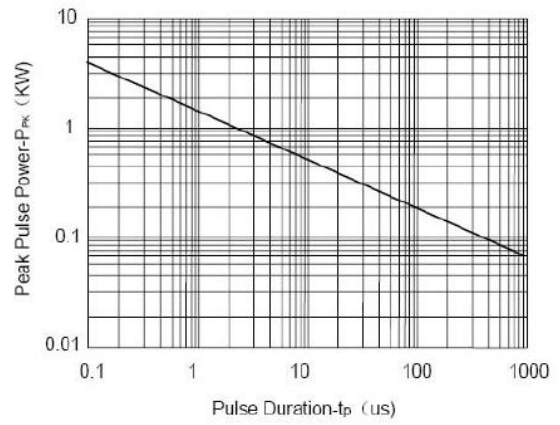
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	6			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$			1	μA
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$			9.8	V
Clamping Voltage	$V_C$	$I_{PP} = 18\text{A}$ , $t_P = 8/20\mu\text{s}$			20	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		0.8	1.5	pF



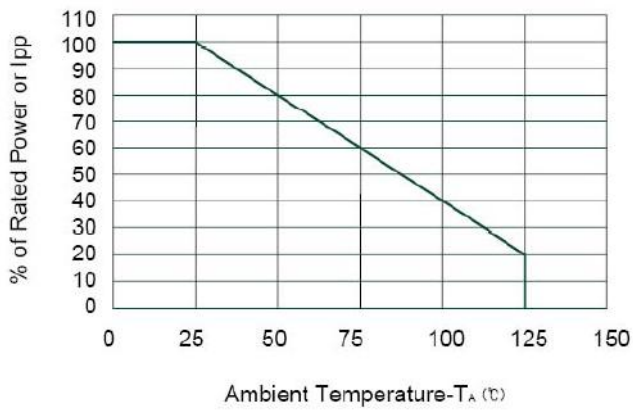
## ● Typical Performance Characteristics



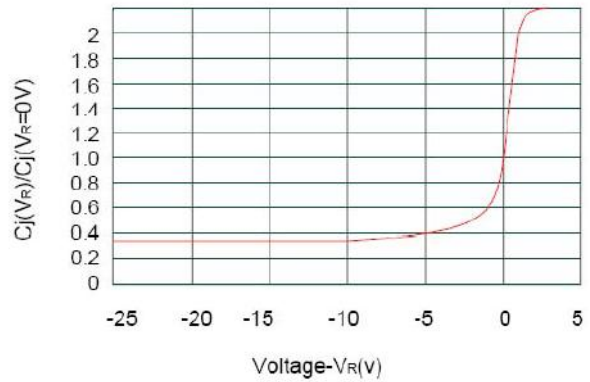
**Pulse Waveform**



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



**Power Derating Curve**



**Junction Capacitance vs. Reverse Voltage**



# SSCE5V012D2

## ● Package Information

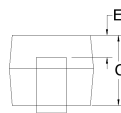
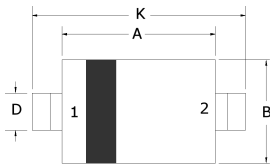
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V012D2	SOD-323	3000	7 Inch

### Mechanical Data

Case: SOD-323

Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	Min	Max
A	1.60	1.80
B	1.2	1.40
C	0.80	0.90
D	0.25	0.35
E	0.15REF	
H	0	0.10
J	0.08	0.15
K	2.50	2.70

### Recommended Pad outline





- **History Version**

V3.0	Product datasheet	2021-07-21
V3.1	Add marking Icon	2022-04-18

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