



## SSCE5V011SI

Ultra Low Capacitance Array for ESD Protection

### ● Description

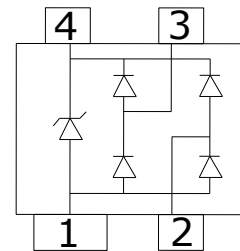
The SSCE5V011SI provides a typical line to line capacitance of 0.45pF between I/O pins and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for HDMI applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing devices.

It has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

### ● Feature

- ✧ 150W peak pulse power ( $t_P = 8/20\mu s$ )
- ✧ SOT-143 Package
- ✧ Working voltage: 5V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ RoHS compliant transient protection for high-speed data lines to IEC61000-4-2(ESD) $\pm 15kV$ (air),  $\pm 8kV$ (contact)

### ● PIN configuration



**Top View**

### ● Applications

- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Server
- ✧ USB 1.1/2.0/3.0/3.1/OTG

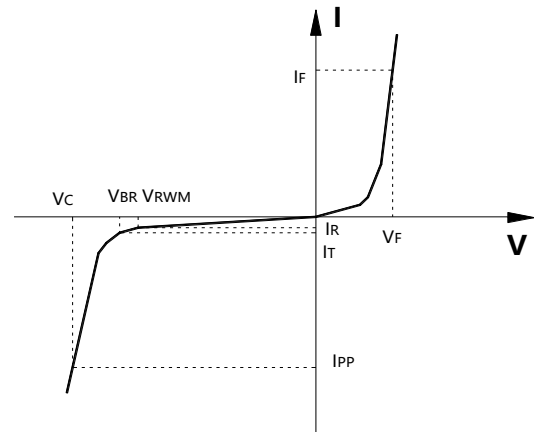
### ● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 3 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 @ $T_A=25^\circ\text{C}$**

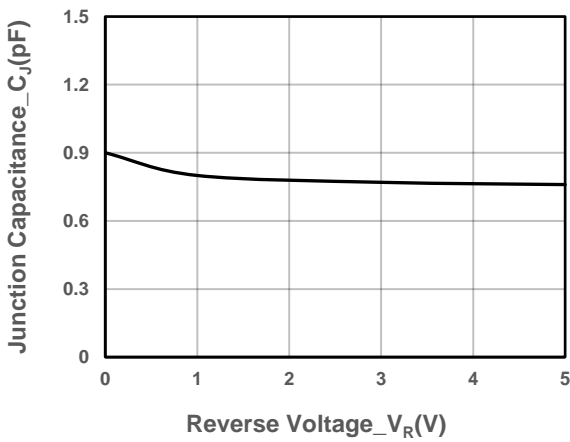
Symbol	Parameter	Value	Units
$P_{PP}$	Peak Pulse Power (8/20 $\mu\text{s}$ )	150	W
$T_{STG}$	Storage Temperature	-55/+150	$^\circ\text{C}$
$T_J$	Operating Temperature	-55/+150	$^\circ\text{C}$

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

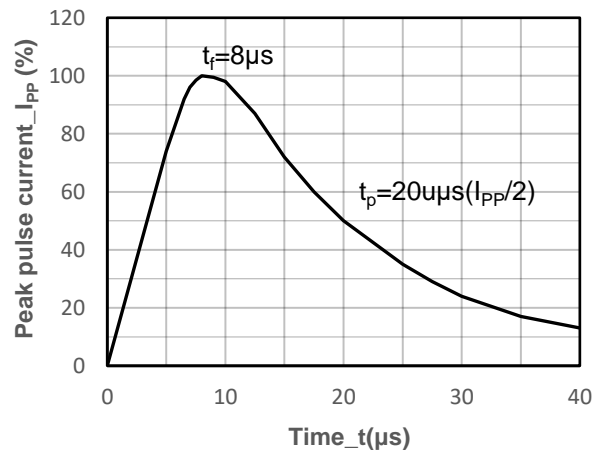
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$	Any I/O to Ground			5	V
Breakdown Voltage	$V_{BR}$	$I_t = 1\text{mA}$ Any I/O to Ground	6			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5.0\text{V}$			1	$\mu\text{A}$
Diode Forward Voltage	$V_F$	$I_F = 15\text{mA}$		0.85	1.2	
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$			15.5	V
Clamping Voltage	$V_C$	$I_{PP} = 5\text{A}$ , $t_p = 8/20\mu\text{s}$			30	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$ , between I/O pins		0.45	0.6	pF
		$V_R = 0\text{V}$ , $f = 1\text{MHz}$ , any I/O pin to Ground		0.9	1.2	pF



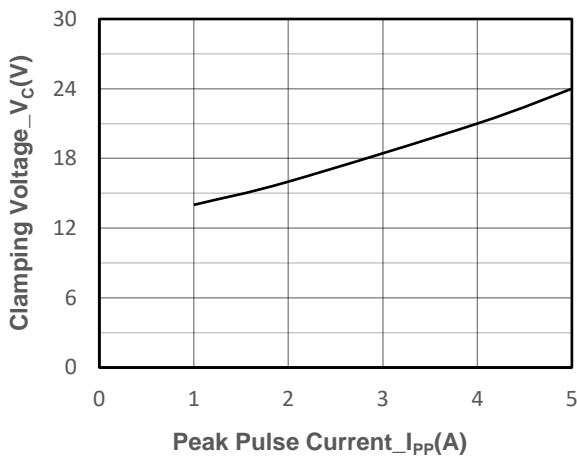
- Typical Performance Characteristics



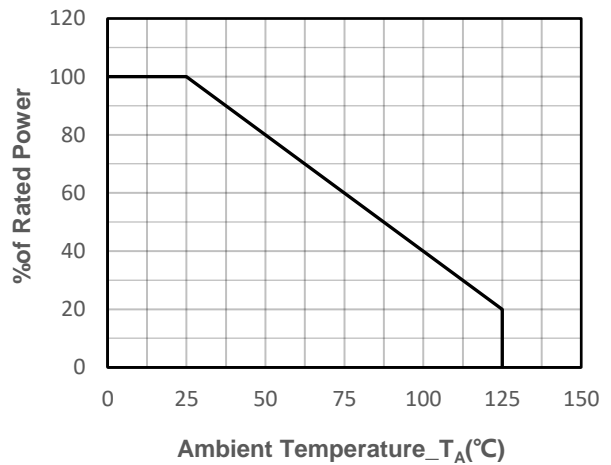
Junction Capacitance vs. Reverse Voltage



8/20µs Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



- **Package Information**

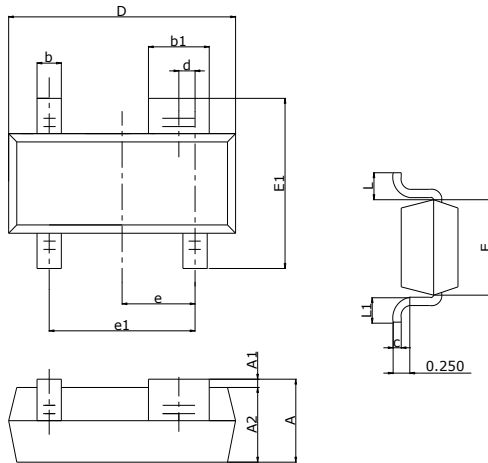
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V011SI	SOT-143	3000	7 Inch

### Mechanical Data

Case: SOT-143

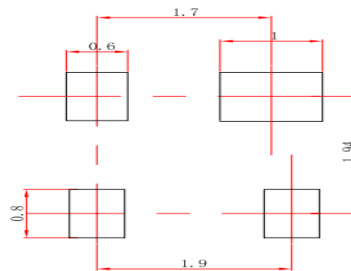
Case Material: Molded Plastic. UL Flammability



SOT-143

DIM	Millimeters	
	Min	Max
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
b 1	0.75	0.90
c	0.08	0.15
D	2.80	3.00
d	0.20TYP	
E	1.20	1.40
E1	2.25	2.55
e	0.95TYP	
e1	1.80	2.00
L	0.55REF	
L1	0.30	0.50

### Recommended Pad outline (Unit: mm)





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