SSCE5V011SI

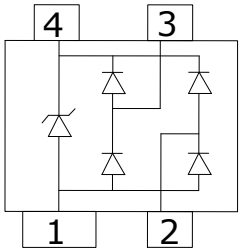
Ultra Low Capacitance Array for ESD Protection

● Description

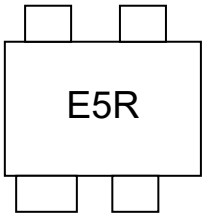
The SSCE5V011SI provides a typical line to line capacitance of 0.45pF between I/O pins and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for HDMI applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing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

● PIN configuration



Top View



Making

● Feature

- ✧ 150W peak pulse power (t_P = 8/20μs)
- ✧ 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)±15kV(air), ±8kV(contact)

● Applications

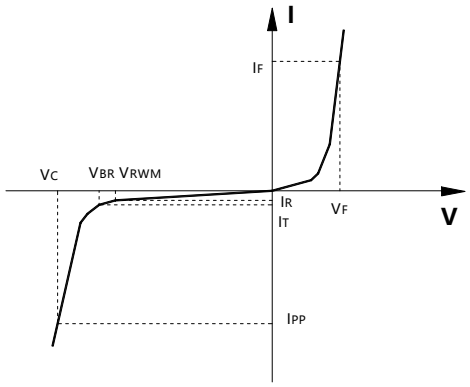
- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Server
- ✧ USB 1.1/2.0/3.0/3.1/OTG

● Mechanical data

- ✧ Lead finish:100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature:260℃
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17 um
- ✧ Pin flatness: ≤3mi

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



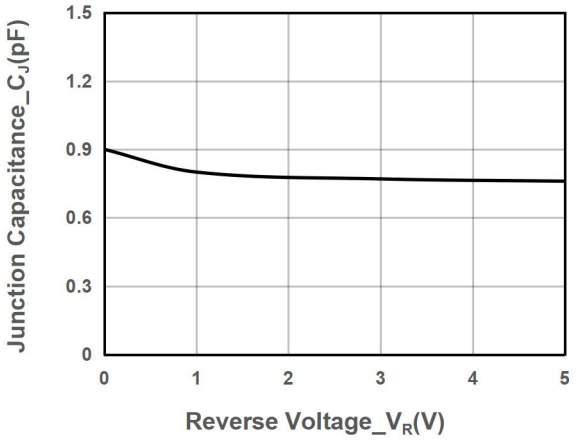
Absolute maximum rating @T_A=25℃

Parameter	Symbol	Value	Units
Peak Pulse Power（8/20μs）	P_{PP}	150	W
Peak Pulse Current（8/20μs）	I_{PP}	5	A
Storage Temperature	T_{STG}	-55/+150	℃
Operating Temperature	T_J	-55/+125	℃

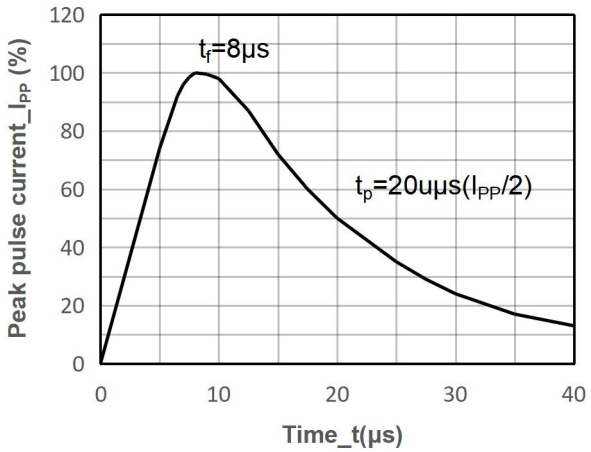
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to Ground			5	V
Breakdown Voltage	V_{BR}	It = 1mA Any I/O to Ground	6			V
Reverse Leakage Current	I_R	VRWM = 5.0V			1	μA
Diode Forward Voltage	V_F	IF = 15mA		0.85	1.2	
Clamping Voltage	V_C	IPP = 1A, t_P = 8/20μs			15.5	V
Clamping Voltage	V_C	IPP= 5A, t_P = 8/20μs			30	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz, between I/O pins		0.45	0.6	pF
		VR = 0V, f = 1MHz, any I/O pin to Ground		0.9	1.2	pF

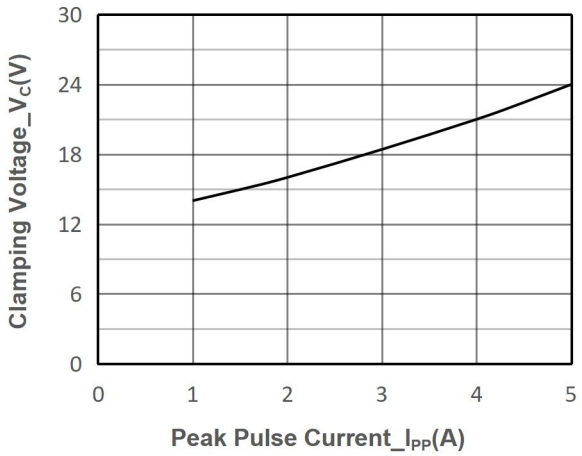
- **Typical Performance Characteristics**



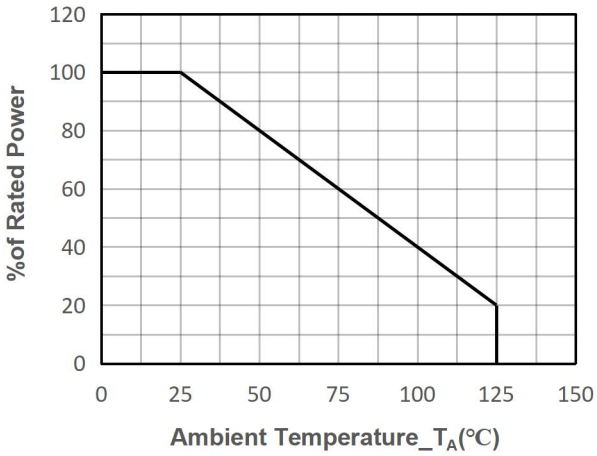
Junction Capacitance vs. Reverse Voltage



8/20μs Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature

● Package Information

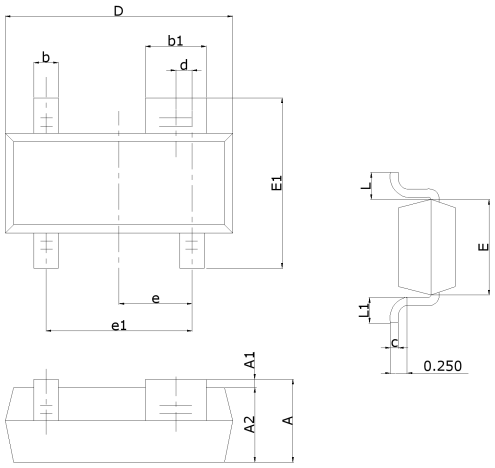
Ordering Information

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

Mechanical Data

Case: SOT-143

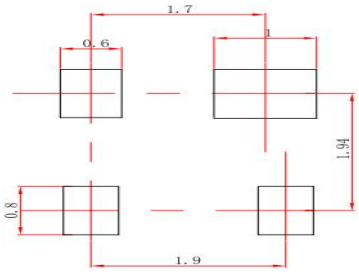
Case Material: Molded Plastic. UL Flammability



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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