

SSCE5V011SI

Ultra Low Capacitance Array for ESD Protection

● Description

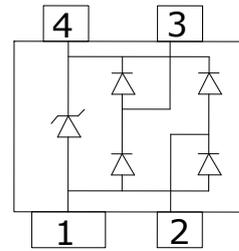
The SSCE5V011SI provides a typical line to line capacitance of 0.45pF between I/O pins and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for HDMI applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing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

● PIN configuration



Topview

● Applications

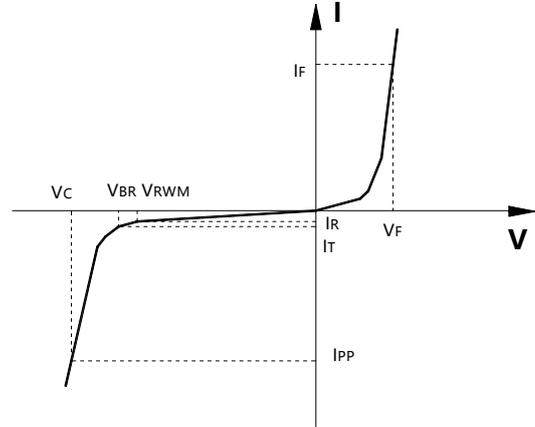
- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Server
- ✧ USB 1.1/2.0/3.0/3.1/OTG

● Mechanical data

- ✧ Lead finish:100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature:260°C
- ✧ Device meets MSL 1 requirements
- ✧ Pure tin plating: 7 ~ 17 um
- ✧ Pin flatness:≤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

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20 μ S)	150	W
T_{STG}	Storage Temperature	-55/+150	°C
T_J	Operating Temperature	-55/+150	°C

● Electrical Characteristics @TA=25°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	$V_{RWM} = 5.0\text{V}$, $T = 25^\circ\text{C}$			1	μA
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	
		$V_R = 0\text{V}$, $f = 1\text{MHz}$, any I/O pin to Ground		0.9	1.2	pF

- **Typical Performance Characteristics**

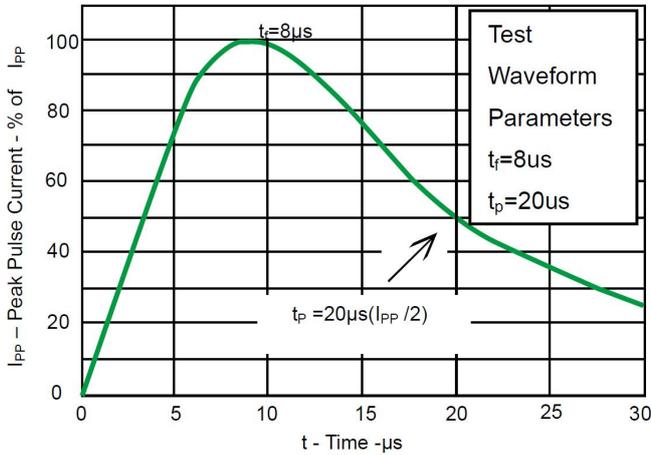


Fig 1. Pulse Waveform

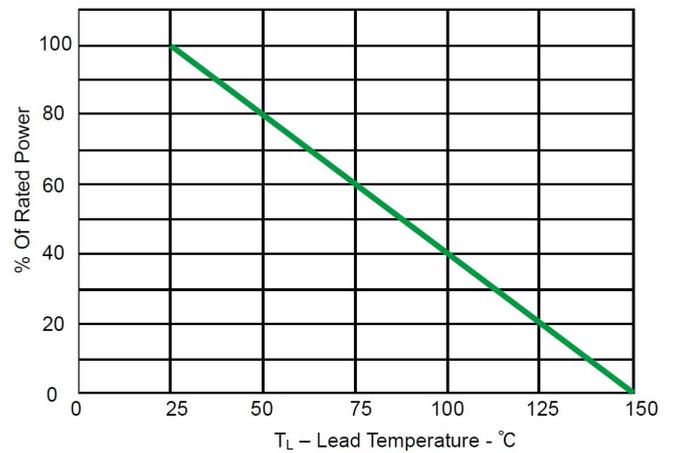
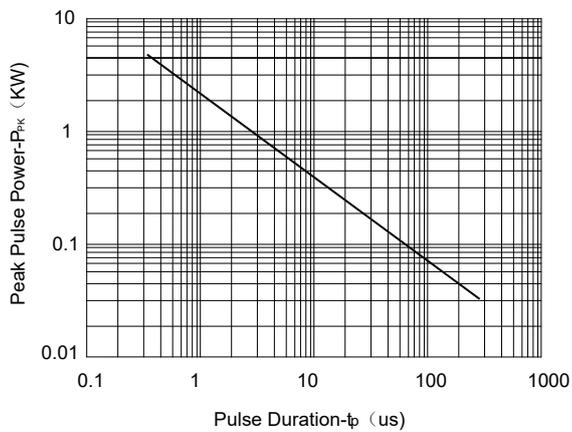


Fig 2. Power Derating Curve



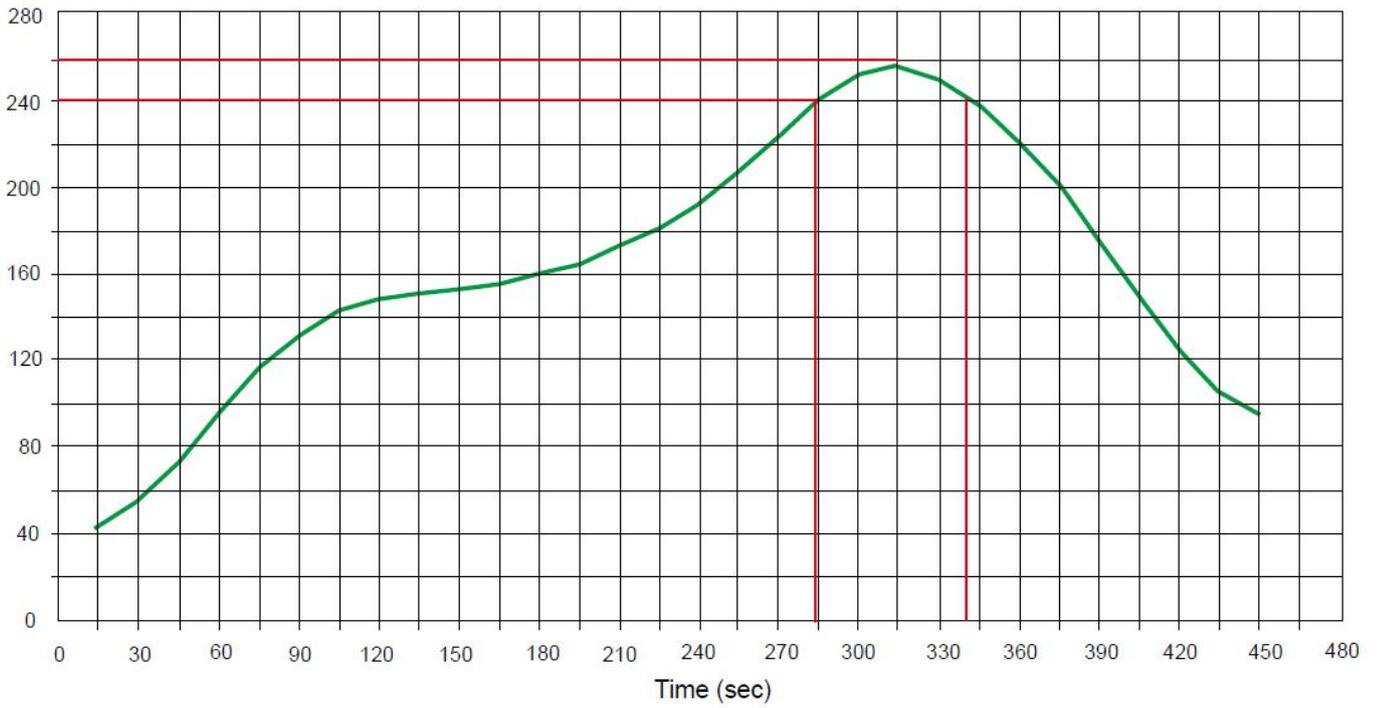
Non-Repetitive Peak Pulse Power vs. Pulse Time



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- Solder Reflow Recommendation

Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



- **Package Information**

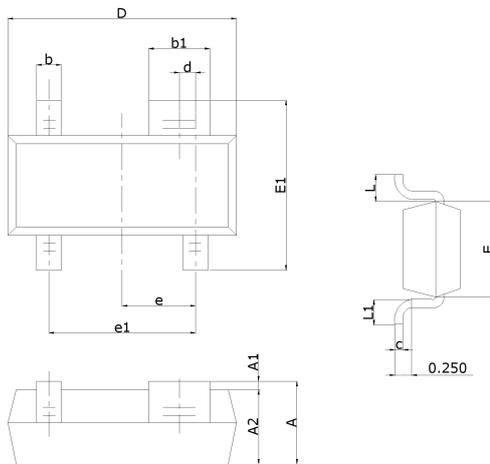
Ordering Information

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

Mechanical Data

Case: SOT-143

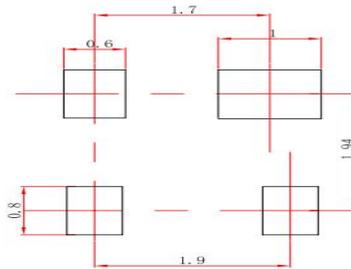
Case Material: Molded Plastic. UL Flammability



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





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