SSCE5V011SG

5-Line TVS Diode Array for ESD Protection

Description

The SSCE5V011SG provides a typical line to line capacitance of 0.3pF and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for USB 3.0 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).

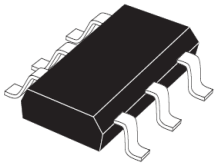
Feature

- 75W peak pulse power (t_P = 8/20μs)
- SOT-363 Package
- Working voltage: 5V
- Low clamping voltage
- Low capacitance
- RoHS compliant
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±25kV
    - Contact discharge: ±20kV
  - IEC61000-4-5 (Lightning) 5A (8/20μs)

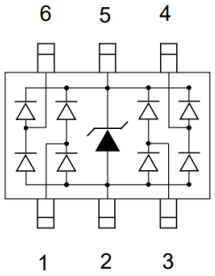
Mechanical data

- 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: ≤3mil

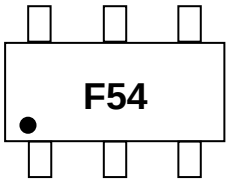
PIN configuration



SOT-363



Circuit diagram



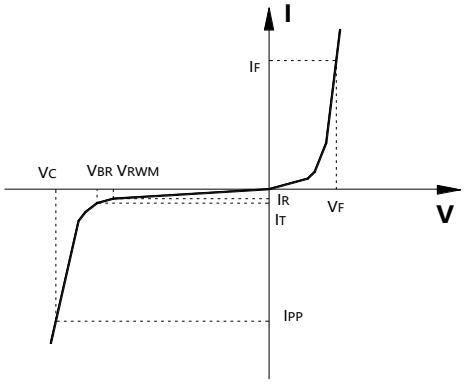
Marking (Top View)

Applications

- Digital Visual Interface (DVI)
- 10/100/1000 Ethernet
- USB 1.1/2.0/3.0/OTG
- IEEE 1394 Firewire Ports
- Projection TV Monitors and Flat Panel Displays
- Notebook Computers
- Set Top Box
- Projection TV

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



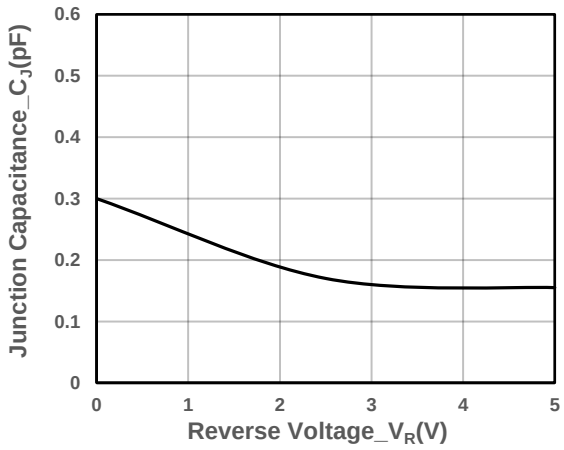
Absolute maximum rating @T_A=25℃

Parameter	Symbol	Value	Units
Peak Pulse Power（8/20μs）	P_{PP}	75	W
Peak Pulse Current（8/20μs）	I_{PP}	5	A
ESD Rating per IEC61000-4-2： Contact Air	V_{ESD}	20 25	kV
Storage Temperature	T_{STG}	-55/+150	℃
Operating Temperature	T_J	-55/+125	℃

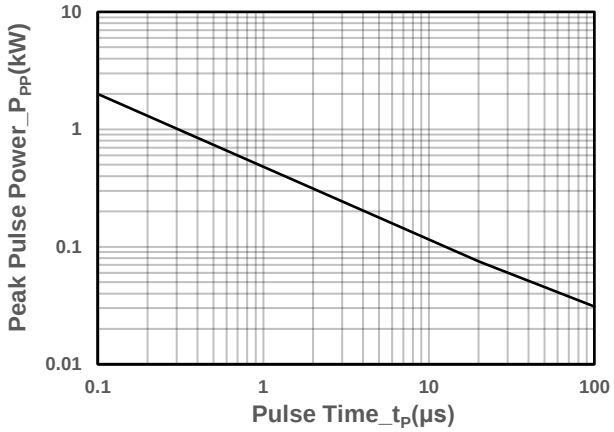
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to GND			5	V
Breakdown Voltage	V_{BR}	I_T = 1mA Any I/O to GND	6		9	V
Reverse Leakage Current	I_R	V_{RWM} = 5V			0.5	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20μs			10	V
Clamping Voltage	V_C	I_{PP} = 5A, t_P = 8/20μs			15	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz, between I/O pins		0.3	0.4	pF
Junction Capacitance	C_J	V_R = 0V, f = 1MHz, any I/O pin to GND			0.8	pF

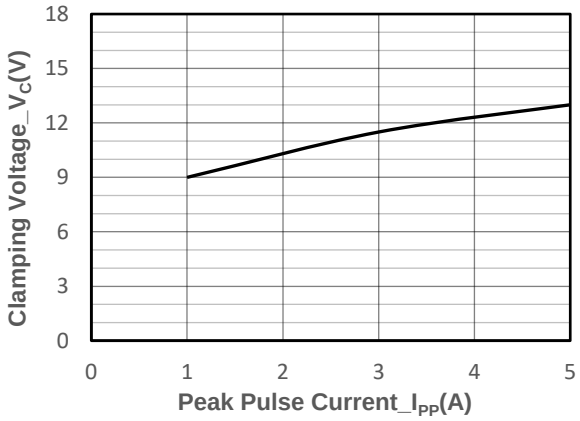
Typical Performance Characteristics



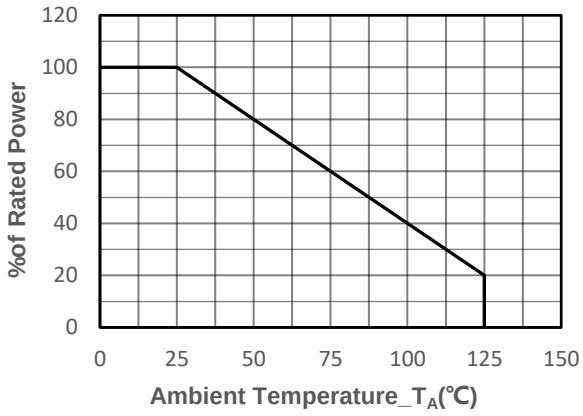
Junction Capacitance vs. Reverse Voltage



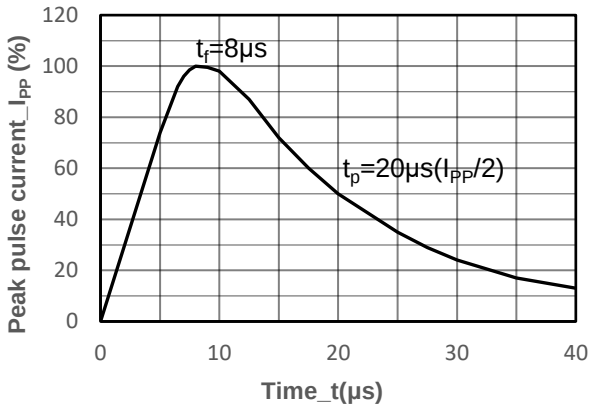
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



8/20μs Pulse Waveform

Package Information

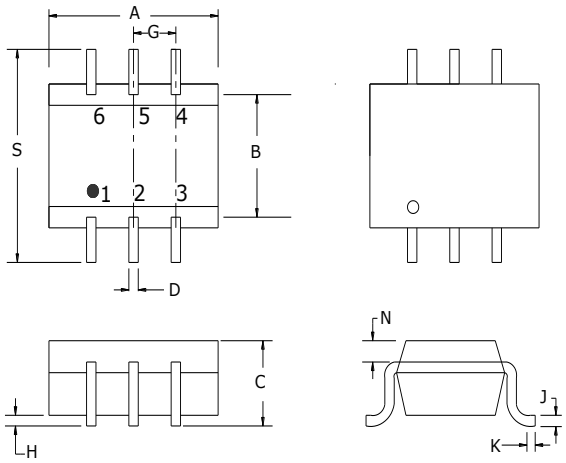
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V011SG	SOT-363	3000	7 Inch

Mechanical Data

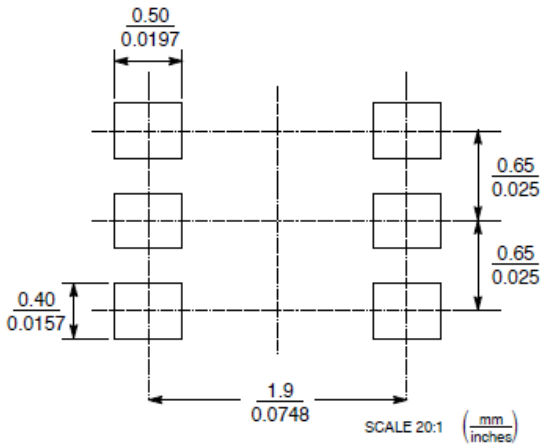
Case: SOT-363

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters		
	Min	Nom	Max
A	1.90	2.00	2.20
B	1.15	-	1.35
C	0.90	-	1.10
D	0.15	-	0.35
G	0.65BSC		
H	-	-	0.10
J	0.08	-	0.15
K	0.15	-	0.35
S	2.10	-	2.45
N	0.20REF		

Recommended Pad outline



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