



# SSCE5V021SG

The SSCE5V021SG provides a typical line to line capacitance of 0.1pF and low insertion loss up to 10GHz 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).

## Features

- Protects four I/O lines and one Vcc line
- Low capacitance
- Working voltages : 5V
- Low leakage current
- Low capacitance (<0.8pF) for high-speed interfaces
- No insertion loss to 10.0GHz
- Response Time is < 1 ns
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- ROHS compliant
- AF technology

## Main 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

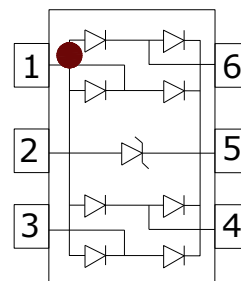
## Protection solution to meet

- IEC61000-4-2 (ESD)  $\pm 20\text{kV}$  (air),  $\pm 20\text{kV}$  (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 4A (8/20  $\mu\text{s}$ )

## Ordering Information

Device	Qty per Reel	Reel Size
SSCE5V021SG	3000	7 Inch

SOT-363





# SSCE5V021SG

## Maximum ratings (Temp=25°C Unless Otherwise Specified)

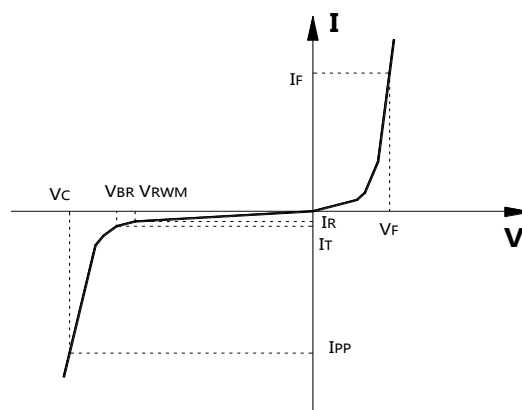
Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P <sub>PPP</sub>	40	Watts
Peak Pulse Current(tp=8/20μs waveform)	I <sub>PP</sub>	4	A
ESD Rating per IEC61000-4-2:	Contact	20	KV
	Air	20	
Lead Soldering Temperature	T <sub>L</sub>	260 (10 sec.)	°C
Operating Temperature Range	T <sub>J</sub>	-55 ~ 150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 ~ 150	°C

## Electrical characteristics (Temp=25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V <sub>RWM</sub>	Reverse Working Voltage	Any I/O to Ground			5.0	V
V <sub>BR</sub>	Reverse Breakdown Voltage	I <sub>T</sub> = 1mA, Any I/O to Ground	6.0			V
I <sub>R</sub>	Reverse Leakage Current	V <sub>RWM</sub> = 5V, Any I/O to Ground			1	μA
V <sub>F</sub>	Diode Forward Voltage	I <sub>F</sub> = 15mA		0.94	1.2	V
V <sub>C</sub>	Clamping Voltage	I <sub>PP</sub> = 1A, tp = 8/20μs, any I/O pin to Ground		7.8	9.6	V
		I <sub>PP</sub> = 4A, tp = 8/20μs, any I/O pin to Ground		12	15.0	V
I <sub>PP</sub>	Peak Pulse Current	tp = 8/20μs			4	A
C <sub>J</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1MHz, between I/O pins		0.1	0.3	pF
		V <sub>R</sub> = 0V, f = 1MHz, any I/O pin to Ground		0.45	0.8	pF

Junction capacitance is measured in V<sub>R</sub>=0V, F=1MHz

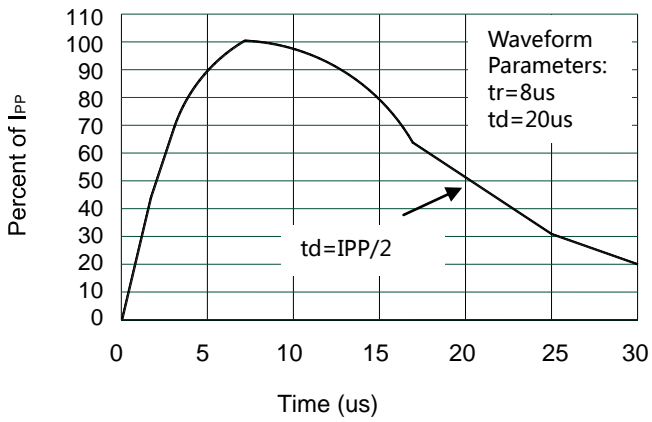
Symbol	Parameter
V <sub>RWM</sub>	Working Peak Reverse Voltage
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
I <sub>T</sub>	Test Current
I <sub>RM</sub>	Leakage current at V <sub>RWM</sub>
I <sub>PP</sub>	Peak pulse current
C <sub>O</sub>	Off-state Capacitance
C <sub>J</sub>	Junction Capacitance



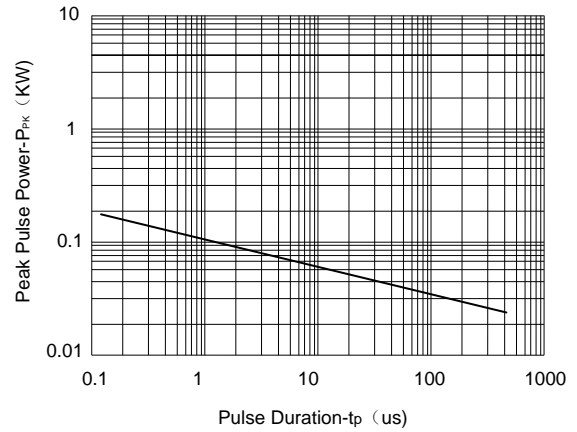
## Typical electrical characterist applications



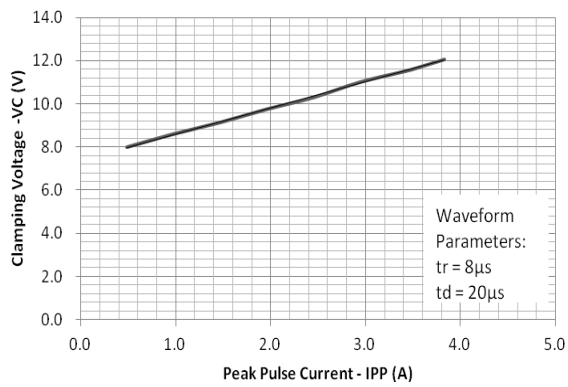
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**Pulse Waveform**



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



**Clamping Voltage vs. Peak Pulse**

## Package Information

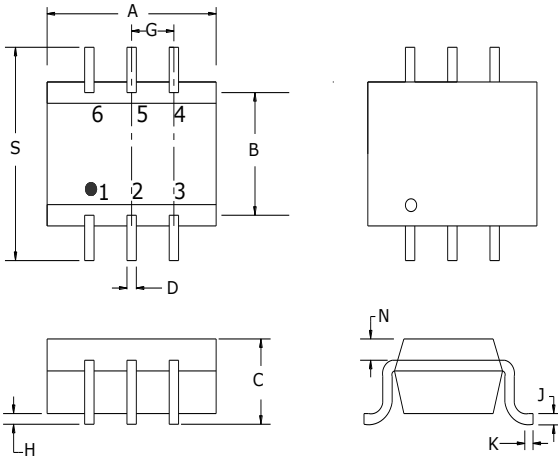


# SSCE5V021SG

## SOT363

### Mechanical Data

- Case: SOT363
- Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	MIN	MAX
A	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
N	0.20REF	
S	2.15	2.45

### Recommended Pad outline

