



## SSCE5V041N1

1-Line Uni-directional low Capacitance TVS Diode

### ● Description

The SSCE5V041N1 is a uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive high-speed data lines.

The SSCE5V041N1 has an ultra-low capacitance with a typical value at 100 pF, and complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. It is suited for use in high frequency designs such as digital cameras, audio players and many other portable applications.

### ● Features

- ◇ 200W peak pulse power ( $t_P = 8/20\mu\text{s}$ )
- ◇ DFN1006-2L Package
- ◇ Working voltage:5V
- ◇ Low Leakage Current
- ◇ Low capacitance
- ◇ Low clamping voltage
- ◇ Response Time is Typically <1ns
- ◇ Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test  
Air discharge:  $\pm 30\text{kV}$   
Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5(Lightning)11A(8/20 $\mu\text{s}$ )

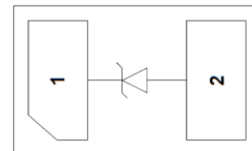
### ● Mechanical Characteristics

- ◇ Package: DFN1006-2L (1.0x0.6x0.5mm)
- ◇ Lead finish: 100% matte Sn (Tin)
- ◇ Device meets MSL 3 requirements
- ◇ Case Material: "Green" Molding Compound.
- ◇ RoHS Compliant
- ◇ Marking Information: See Below.

### ● PIN configuration



**DFN1006-2L (Bottom View)**



**Circuit Diagram**



**Marking (Top View)**

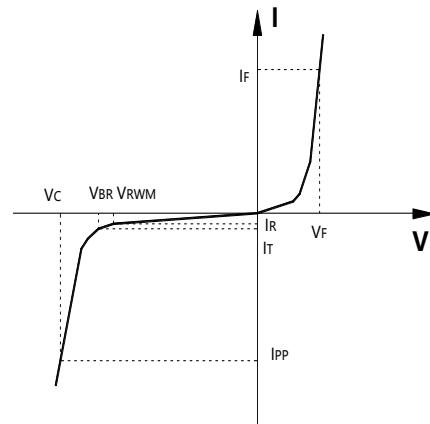
### ● Applications

- ◇ Cellular Handsets and Accessories
- ◇ Keypads, Side Keys, LCD Displays
- ◇ Personal Digital Assistants
- ◇ Notebooks and Handhelds
- ◇ Portable Instrumentation
- ◇ Digital cameras
- ◇ Audio Players
- ◇ Peripherals



● **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 ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

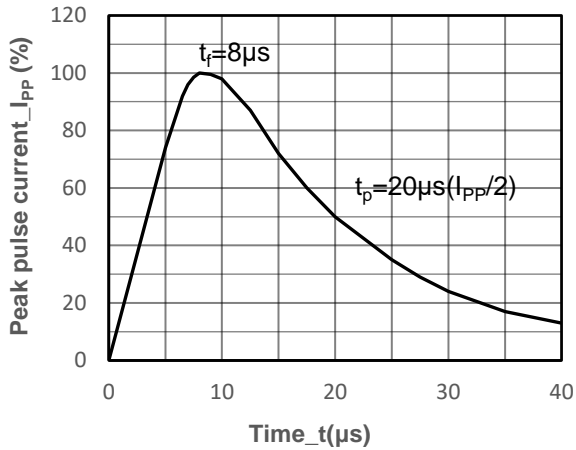
Parameter	Symbol	Value	Units
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PP}$	200	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{PP}$	11	A
ESD Rating per IEC61000-4-2:	$V_{ESD}$	$\pm 30$	kV
Contact Air		$\pm 30$	
Storage Temperature	$T_{STG}$	-55/+150	$^\circ\text{C}$
Operating Temperature	$T_J$	-55/+125	$^\circ\text{C}$

● **Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

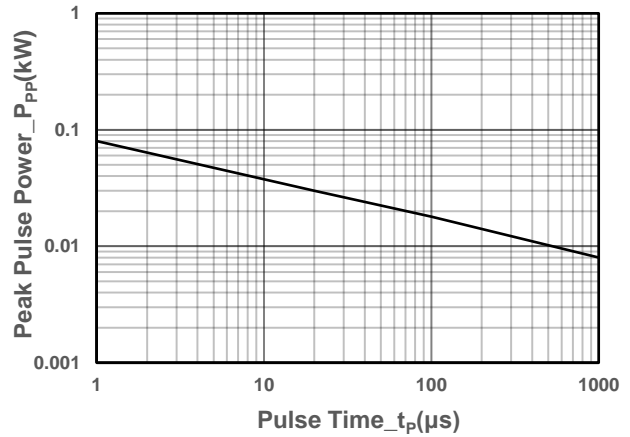
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	6	7.2		V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$			0.1	$\mu\text{A}$
Forward Voltage	$V_F$	$I_F = 15\text{mA}$			1.2	V
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$		8		V
Clamping Voltage	$V_C$	$I_{PP} = 11\text{A}$ , $t_P = 8/20\mu\text{s}$		12	18	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		80	100	pF



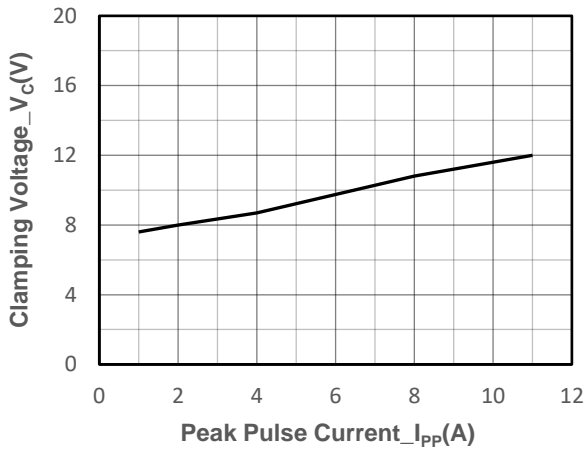
● Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)



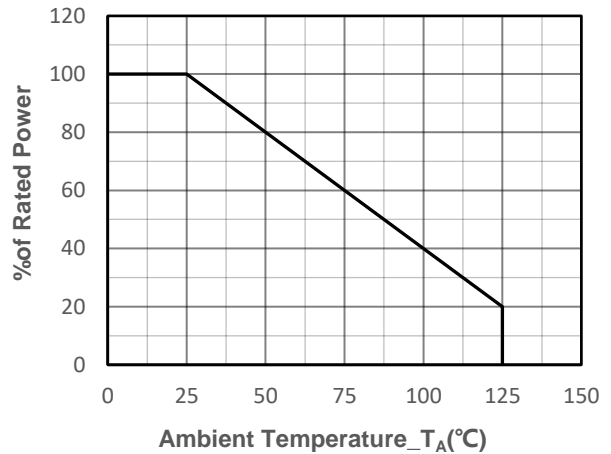
8/20 $\mu\text{s}$  Pulse Waveform



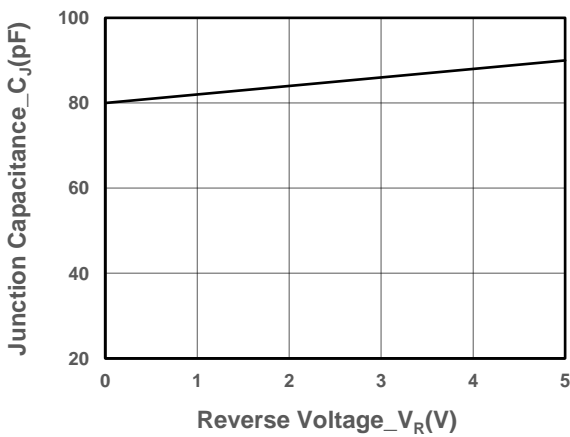
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



Junction Capacitance vs. Reverse Voltage



## ● Package Information

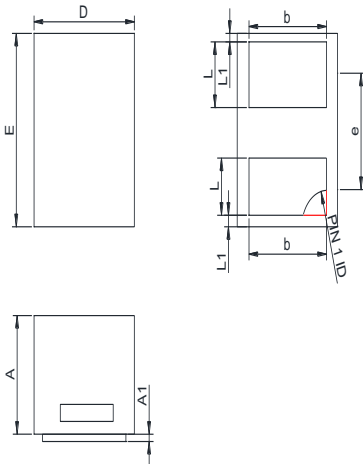
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V041N1	DFN1006-2L	10000	7 Inch

### Mechanical Data

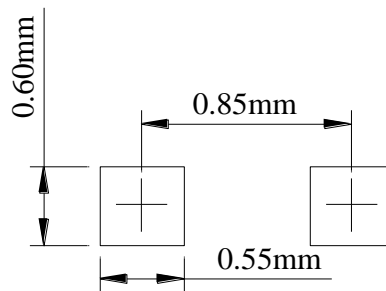
Case: DFN1006-2L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.45	0.55
A1	0.00	0.05
D	0.55	0.65
E	0.95	1.05
b	0.45	0.60
e	0.65TYP	
L	0.2	0.3
L1	0.05REF	

### Suggested Land Pattern





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