



# SSCE5V042N1

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Ultra-low Capacitance Bidirectional Micro Packaged TVS Diodes for ESD Protection

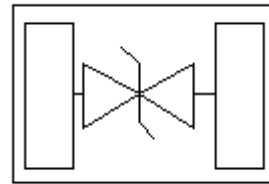
### ● Description

The SSCE5V042N1 is designed with Punch-Through process TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed, USB 3.0 super speed, VGA, DVI, HDMI, ESATA and other high speed line applications.

### ● Feature

- ✧ 50W peak pulse power ( $t_P = 8/20\mu s$ )
- ✧ DFN1006 Package
- ✧ Working voltage: 5V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD)  $\pm 25kV$ (air),  $\pm 25kV$ (contact)

### ● PIN configuration



Topview

### ● Applications

- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Servers
- ✧ Solid-state Punch-Through TVS Process technology Portable instrumentation

### ● Mechanical data

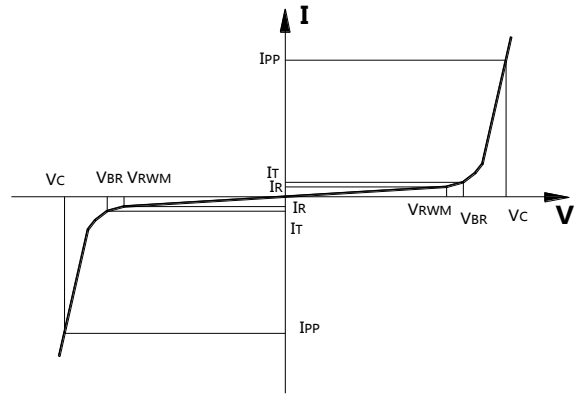
- ✧ Lead finish: 100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 1 requirements
- ✧ Pure tin plating: 7 ~ 17  $\mu m$
- ✧ Pin flatness:  $\leq 3mil$



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## ● 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 (8/20μS)	50	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	$V_{RWM}$			5		V
Breakdown Voltage	$V_{BR}$	$I_t = 1mA$	5.6		7.8	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5.0V, T = 25°C$			1	μA
Clamping Voltage	$V_C$	$I_{PP} = 3A, tP = 8/20μs$		6.2		V
Clamping Voltage	$V_C$	$I_{PP} = 5A, tP = 8/20μs$		7.5		V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		15		pF



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## ● Typical Performance Characteristics

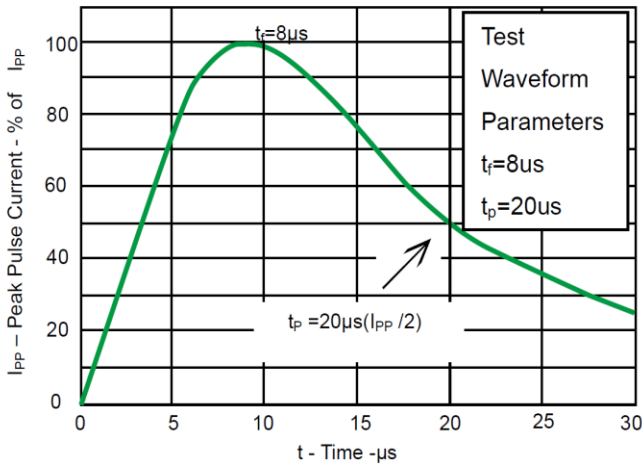


Fig 1. Pulse Waveform

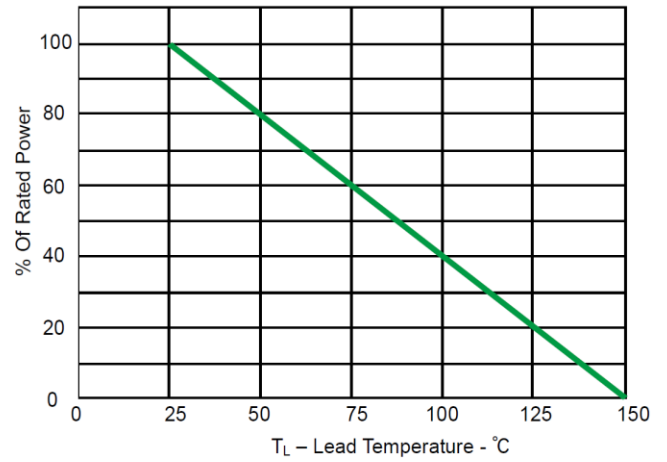
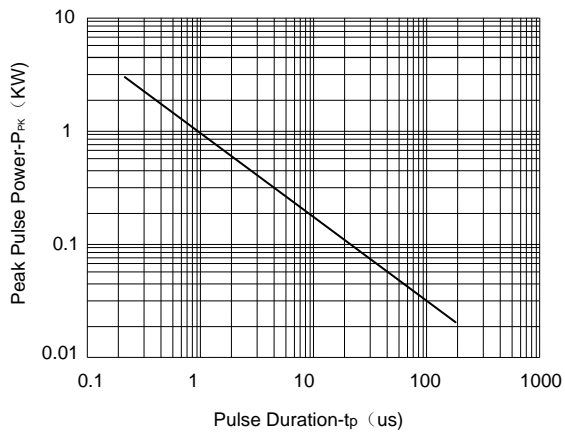
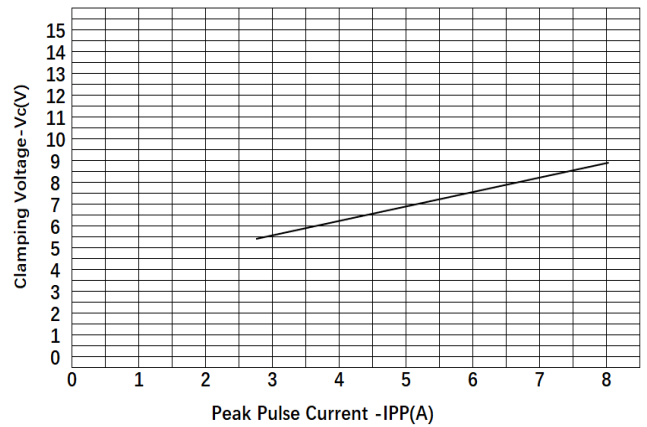


Fig 2. Power Derating Curve



Non-Repetitive Peak Pulse Power vs. Pulse Time



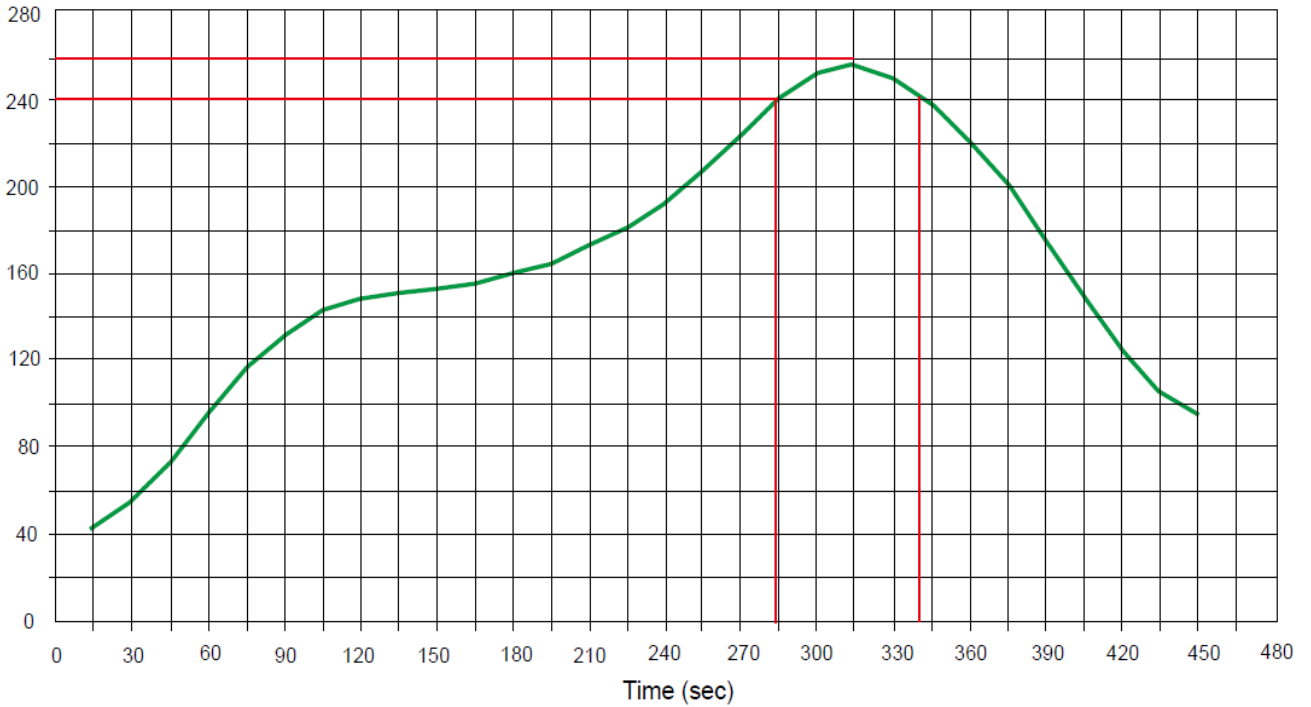
Clamping Voltage vs Peak Pulse Current



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- **Solder Reflow Recommendation**

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





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- **Package Information**

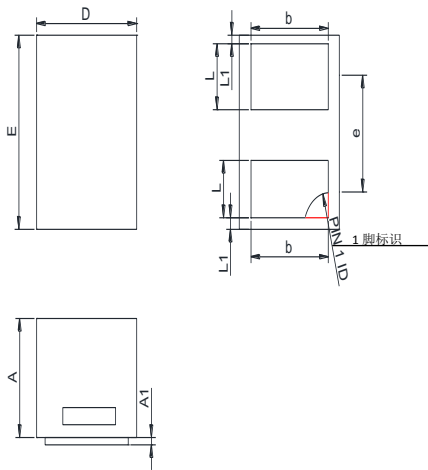
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V042N1	DFN1006	10000	7 Inch

### Mechanical Data

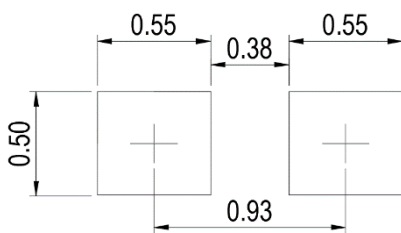
Case:DFN1006

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.35	0.50
A1	0.00	0.05
D	0.45	0.55
E	0.95	1.05
b	0.45	0.55
e	0.65TYP	
L	0.2	0.3
L1	0.05REF	

### Recommended Pad outline





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