



## SSCE15V12N1

1-line Bidirectional Micro Packaged TVS Diodes for ESD Protection

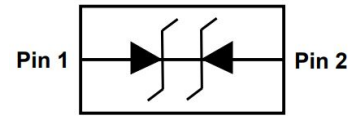
### ● Description

The SSCE15V12N1 is a bi-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 data and power line. The SSCE15V12N1 complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge.

### ● Feature

- ◇ 200W peak pulse power ( $t_p = 8/20\mu\text{s}$ )
- ◇ DFN1006-2L Package
- ◇ Working voltage: 15V
- ◇ Low clamping voltage
- ◇ Low capacitance
- ◇ Low leakage current
- ◇ Complies with following standards:
  - IEC61000-4-2(ESD)  $\pm 30\text{kV}$ (contact), $\pm 30\text{kV}$ (air)
  - IEC61000-4-5(Lightning) 5A(8/20 $\mu\text{s}$ )

### ● PIN configuration



Top view



Marking

### ● Applications

- ◇ Cellular Handsets and Accessories
- ◇ Personal Digital Assistants
- ◇ Notebooks and Handhelds
- ◇ Portable Instrumentation
- ◇ Digital Cameras
- ◇ Peripherals
- ◇ Audio Players
- ◇ Industrial Equipment

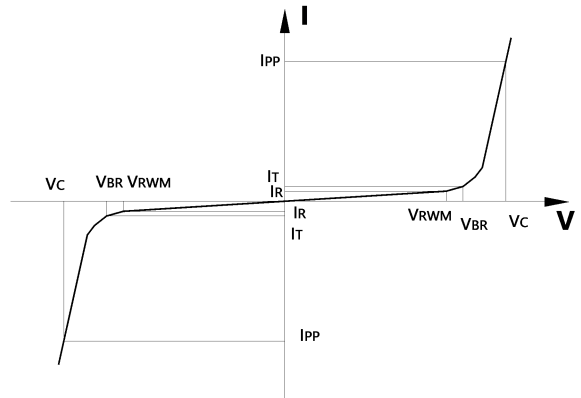
### ● Mechanical data

- ◇ 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  $\mu\text{m}$
- ◇ Pin flatness:  $\leq 3\text{mil}$
- ◇ RoHS compliant



## ● 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 @TA=25°C

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	$P_{PP}$	200	W
Peak Pulse Current (8/20us)	$I_{PP}$	5	A
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Storage Temperature	$T_{STG}$	-55/+150	°C
Operating Temperature	$T_J$	-55/+125	°C

## ● Electrical Characteristics @TA=25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				15	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	16.7			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 15V$			0.2	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A, t_p = 8/20us$		20		V
Clamping Voltage	$V_C$	$I_{PP} = 5A, t_p = 8/20us$		30	40	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		15	20	pF



- Typical Performance Characteristics

Figure 1: Peak Pulse Power Vs Pulse Time

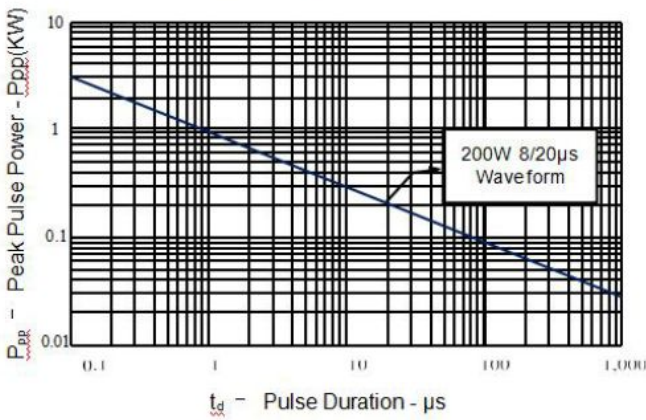


Figure 2: Power Derating Curve

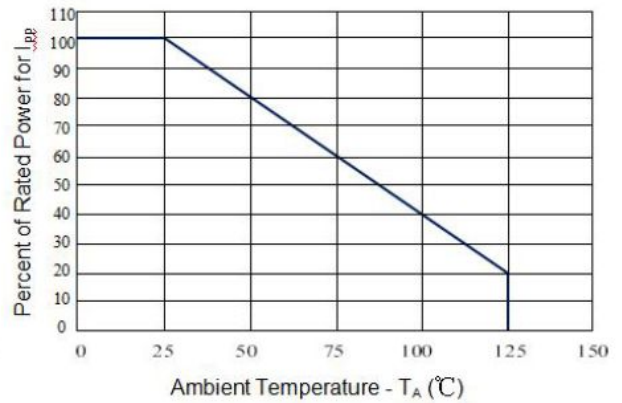


Figure 3: Clamping Voltage vs. Peak Pulse Current

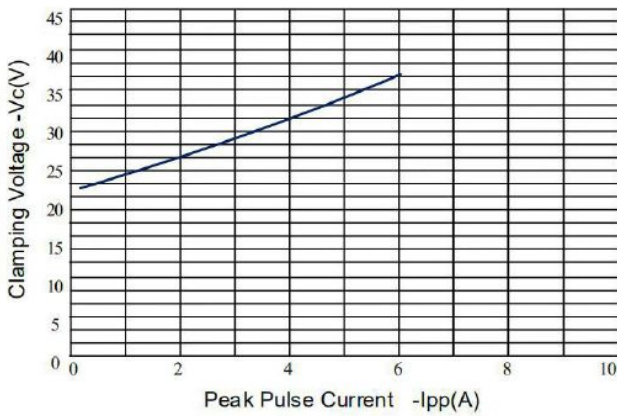
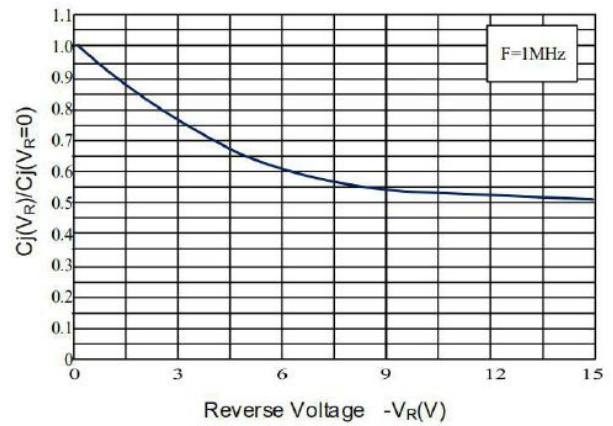


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage





- **Package Information**

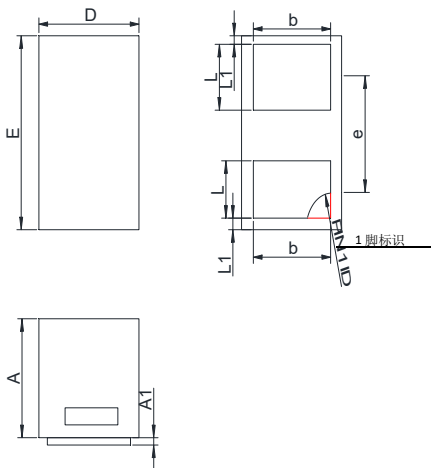
## Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE15V12N1	DFN1006-2L	10000	7 Inch

## Mechanical Data

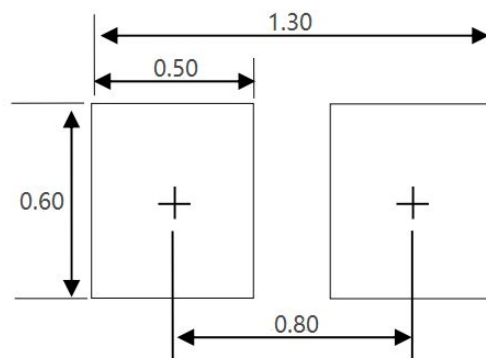
Case:DFN1006-2L

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	

## Recommended Pad outline



Unit:mm



- **History Version**

V1.0	First edition	2022-02-24
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