



## SSCE5V022N1

1-Line Bi-directional TVS Diodes

### ● Description

The SSCE5V022N1 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.

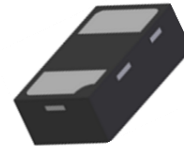
### ● Feature

- ✧ Working voltage: 5V
- ✧ Low clamping voltage
- ✧ Small Body Outline Dimensions
- ✧ Low leakage current
- ✧ 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) 6A (8/20 $\mu\text{s}$ )

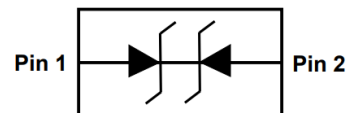
### ● Applications

- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Servers
- ✧ Portable instrumentation

### ● PIN configuration



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



**Circuit Diagram**



**Marking**

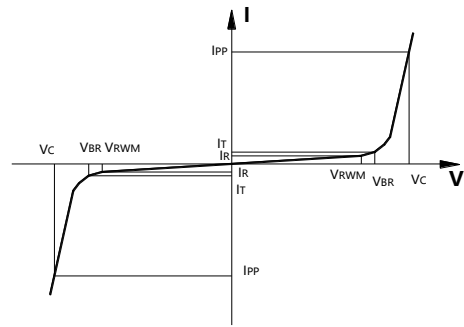
### ● Mechanical data

- ✧ Package:  
DFN1006-2L(1.0×0.6×0.5mm)
- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Device meets MSL 3 requirements
- ✧ Case Material: “Green” Molding Compound
- ✧ RoHS Compliant
- ✧ Pure tin plating: 7~17 $\mu\text{m}$
- ✧ Pin flatness:  $\leq 3\text{mil}$



## ● 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 @ $T_A=25^{\circ}\text{C}$

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PP}$	72	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{PP}$	6	A
ESD Rating per IEC61000-4-2: Contact Air	$V_{ESD}$	$\pm 30$ $\pm 30$	kV
Storage Temperature	$T_{STG}$	-55/+150	$^{\circ}\text{C}$
Operating Temperature	$T_J$	-55/+125	$^{\circ}\text{C}$

## ● Electrical Characteristics @ $T_A=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	5.6	7	7.8	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5\text{V}$			0.2	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$		7.5		V
Clamping Voltage	$V_C$	$I_{PP} = 6\text{A}$ , $t_P = 8/20\mu\text{s}$		8.5	12	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		15	20	pF





## ● Package Information

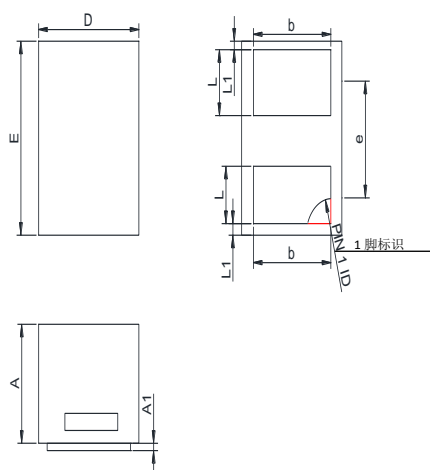
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V022N1	DFN1006-2L	10000	7 Inch

### Mechanical Data

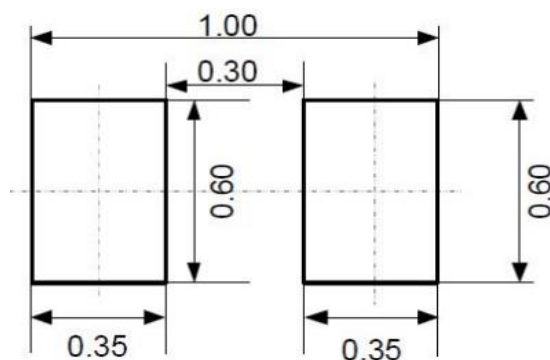
Case: DFN1006-2L

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





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