SSCE24V12N1

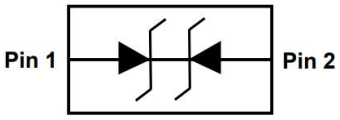
1-line Bidirectional Micro Packaged TVS Diodes for ESD Protection

● Description

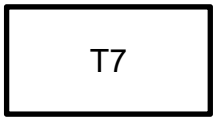
The SSCE24V12N1 is 24V bi-direction TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium.

The SSCE24V12N1 has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD(electrostatic discharge), and EFT (electrical fast transients).

● PIN configuration



Top view



Marking

✧ Feature

- ✧ 300W peak pulse power (t_P = 8/20us)
- ✧ DFN1006-2L Package
- ✧ Working voltage: 24V
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ RoHS compliant
- ✧ Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - – IEC61000-4-5 (Surge) 5A (8/20μs)

● Applications

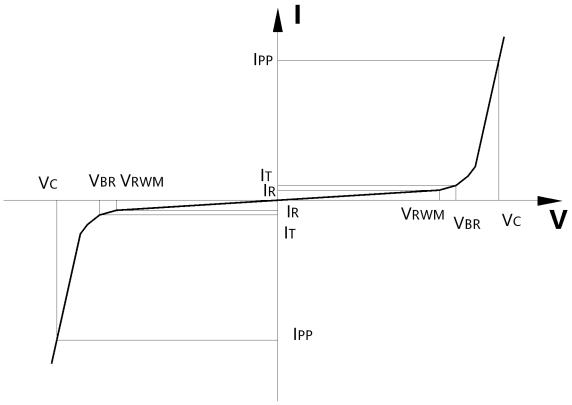
- ✧ Serial and Parallel Ports
- ✧ Notebooks, Desktops, Servers
- ✧ Projection TV
- ✧ Cellular handsets and accessories
- ✧ Portable instrumentation
- ✧ Peripherals
- ✧ MP3 Players

● Mechanical data

- ✧ Lead finish:100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature:260℃
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17 um
- ✧ Pin flatness: ≤3mil

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



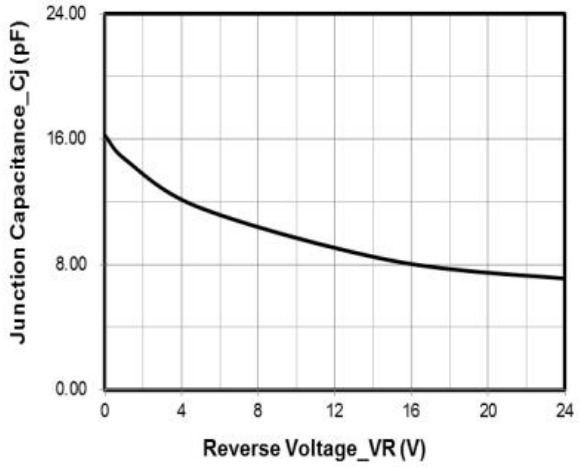
Absolute maximum rating @T_A=25℃

Parameter		Symbol	Value	Unit
Peak Pulse Power（8/20us）		P_{PP}	300	W
Peak Pulse Current（8/20us）		I_{PP}	5	A
ESD Rating per IEC61000-4-2：	Contact Air	V_{ESD}	30 30	kV
Storage Temperature		T_{STG}	-55/+150	℃
Operating Temperature		T_J	-55/+125	℃

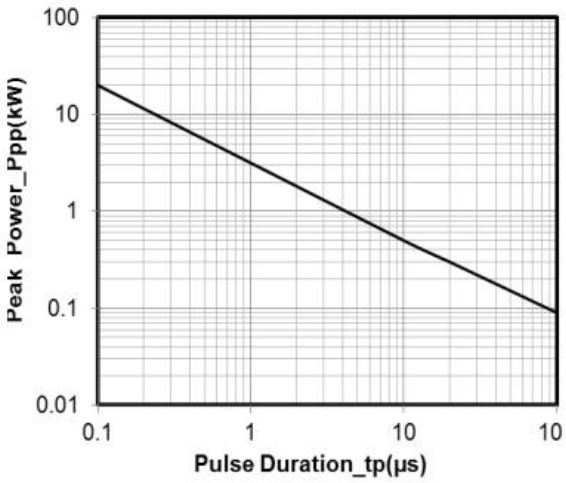
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	I_T = 1mA	26.7			V
Reverse Leakage Current	I_R	V_{RWM} =24V			0.2	μA
Clamping Voltage	V_C	I_{PP} =1A, t_P = 8/20us		36	40	V
Clamping Voltage	V_C	I_{PP}=5A, t_P = 8/20us			60	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		16	20	pF

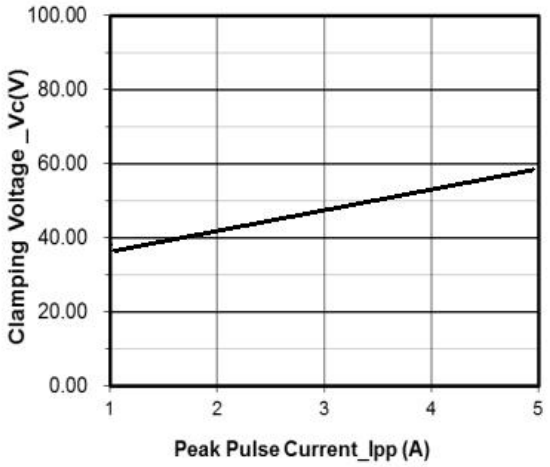
- **Typical Performance Characteristics**



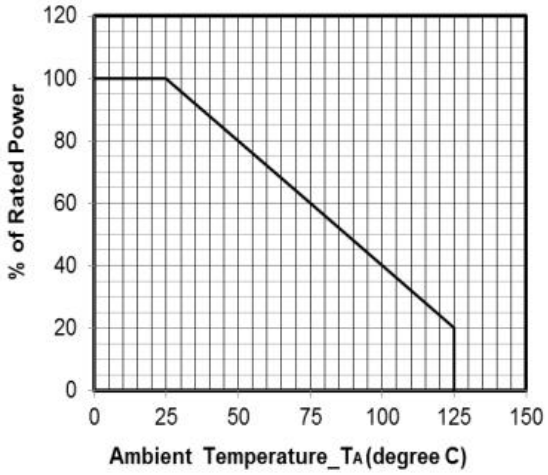
Junction Capacitance vs. Reverse Voltage



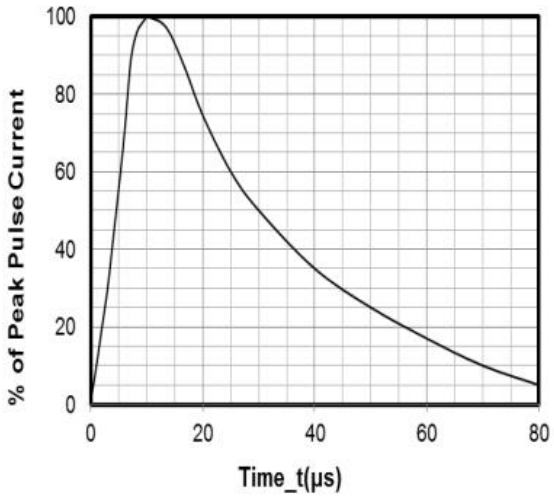
Peak Pulse Power vs. Pulse Time



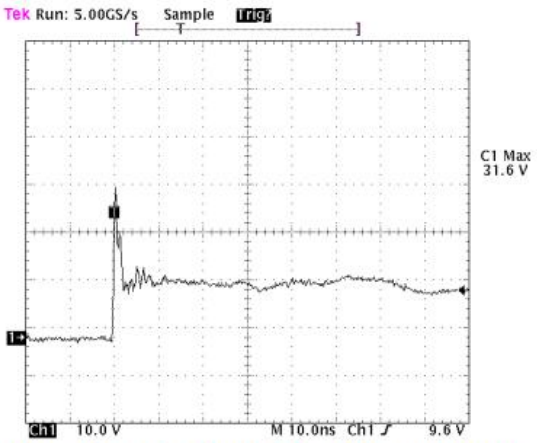
Clamping Voltage vs. Peak Pulse Current



Power Derating Curve



8 X 20μs Pulse Waveform



Note：Data is taken with a 10x attenuator

ESD Clamping Voltage
8 kV Contact per IEC61000−4−2

● Package Information

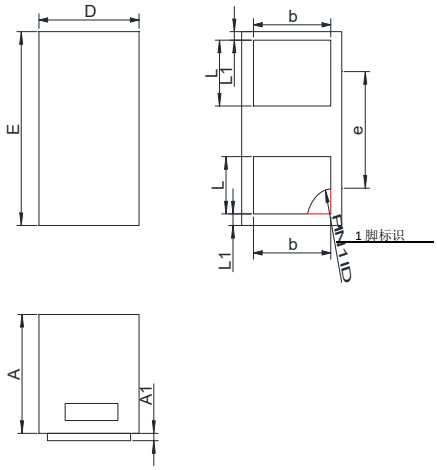
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE24V12N1	DFN1006-2L	10000	7 Inch

Mechanical Data

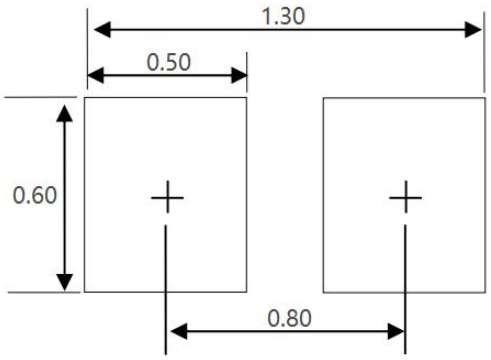
Case:DFN1006-2L

Case Material: Molded Plastic. UL Flammability



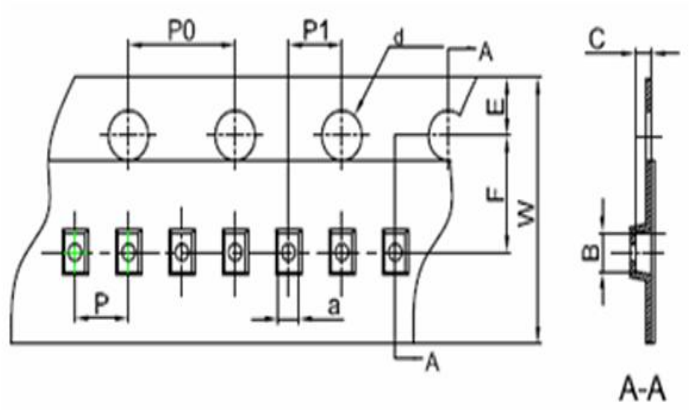
DIM	Millimeters	
	Min	Max
A	0.45	0.55
A1	0.00	0.05
D	0.55	0.65
E	0.95	1.05
b	0.45	0.60
e	0.65TYP	
L	0.2	0.3
L1	0.05REF	

Recommended Pad outline

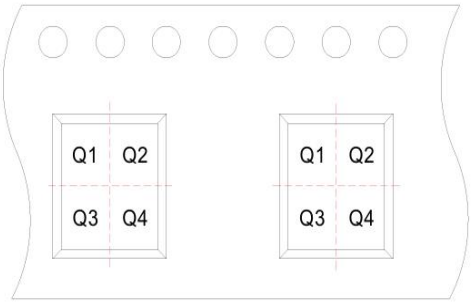


Unit:mm

- **Type and Reel Information-DFN1006-2L**

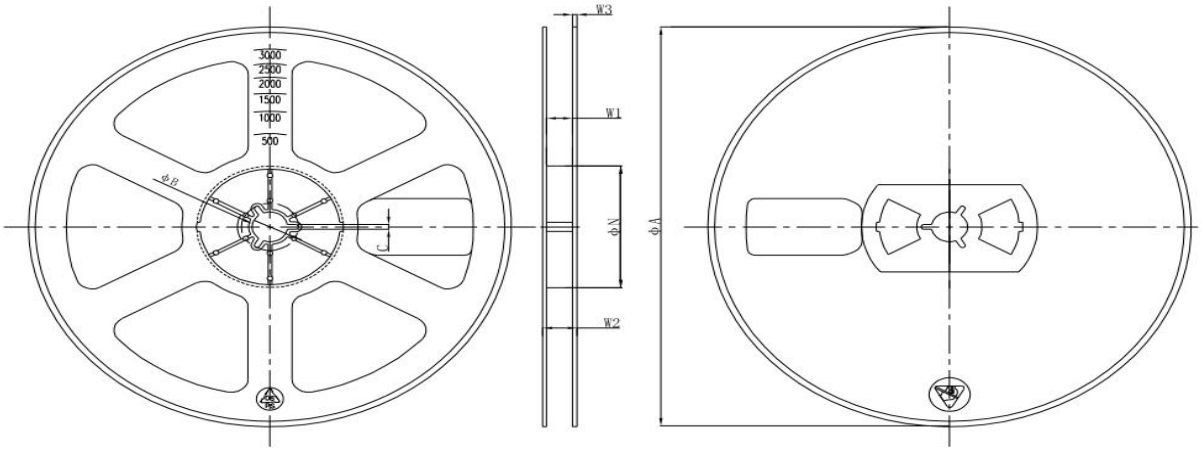


DIM	Millimeters
	Typ
a	0.68
B	1.14
C	0.58
d	Φ1.55
E	1.75
F	3.50
P0	4.00
P	2.00
P1	2.00
W	8.00



User direction of feed

Pin 1 Quadrant：Q1&Q2



ΦA	ΦN	ΦB	C	W1	W2	W3
178mm	54mm	13.2mm	2.2mm	9.5mm	13_{max}mm	1.4mm

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