SSCE12V22N1

1-line Bidirectional Micro Packaged TVS Diodes for ESD Protection

● Description

The SSCE12V22N1 is designed with AF 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.

It has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events), and EFT (electrical fast transients).

● Feature

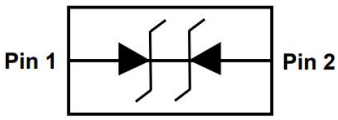
- ✧ 200W peak pulse power (t_p = 8/20μs)
- ✧ Working voltage: 12V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±25kV
    - Contact discharge: ±25kV
  - – IEC61000-4-5 (Lightning) 8A (8/20μs)
- ✧ RoHS Compliant

● Applications

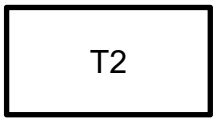
- ✧ Cellular Handsets and Accessories
- ✧ Personal Digital Assistants
- ✧ Notebooks and Handhelds
- ✧ Portable Instrumentation
- ✧ Digital Cameras
- ✧ Peripherals

● PIN configuration

DFN1006-2L (Bottom View)



Circuit Diagram



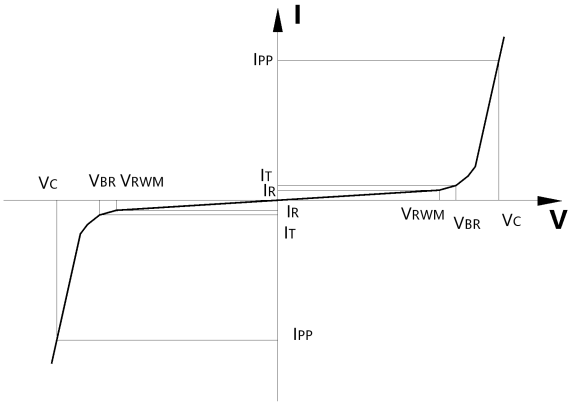
Marking

● Mechanical data

- ✧ DFN1006-2L Package
- ✧ 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



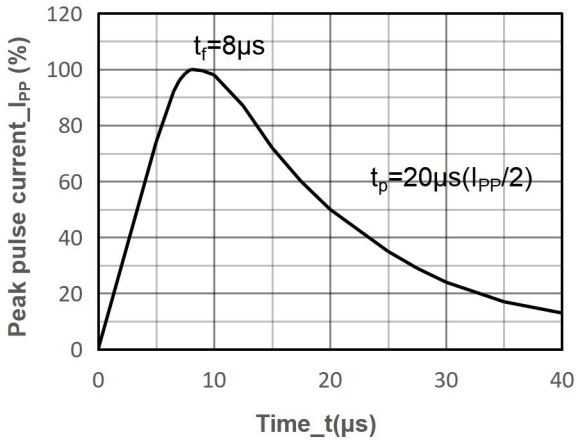
Absolute maximum rating (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power（8/20μs）	P_{PP}	200	W
Peak Pulse Current（8/20μs）	I_{PP}	8	A
ESD Rating per IEC61000-4-2： Contact Air	V_{ESD}	25 25	kV
Storage Temperature	T_{STG}	-55/+150	℃
Operating Temperature	T_J	-55/+125	℃

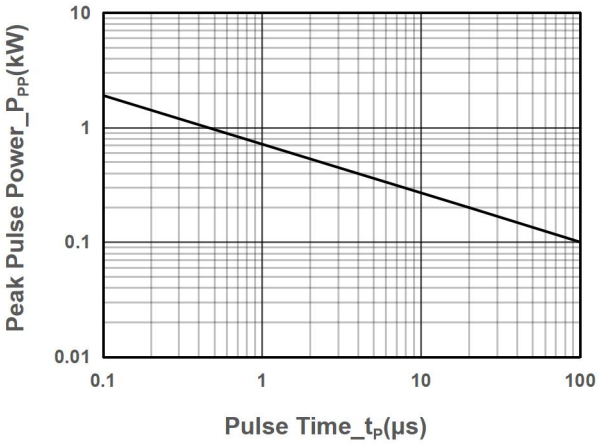
Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				12	V
Breakdown Voltage	V_{BR}	I_T = 1mA	12.6			V
Reverse Leakage Current	I_R	V_{RWM} = 12V		0.01	0.2	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_p = 8/20μs		13.9		V
Clamping Voltage	V_C	I_{PP} = 5A, t_p = 8/20μs		16	20	V
Clamping Voltage	V_C	I_{PP} = 8A, t_p = 8/20μs		17	25	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		5	10	pF

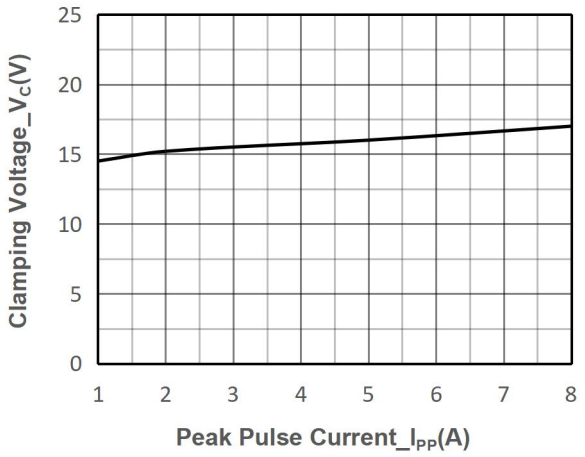
- **Typical Performance Characteristics (T_A=25℃ unless otherwise noted)**



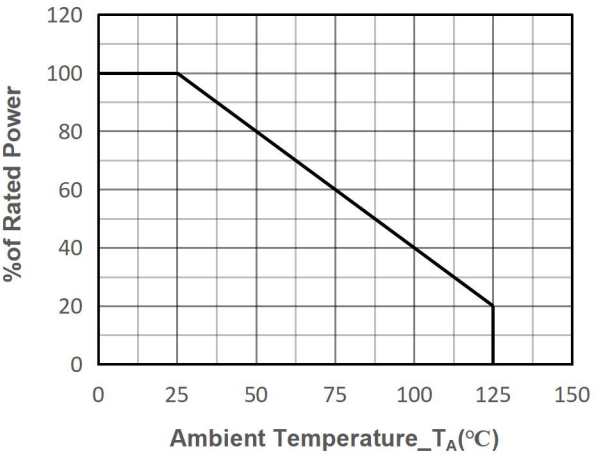
8/20μs Pulse Waveform



Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature

● Package Information

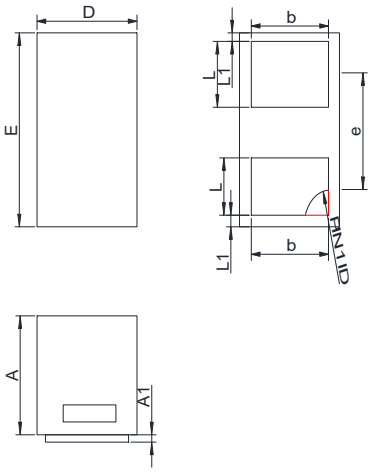
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE12V22N1	DFN1006-2L	10000	7 Inch

Mechanical Data

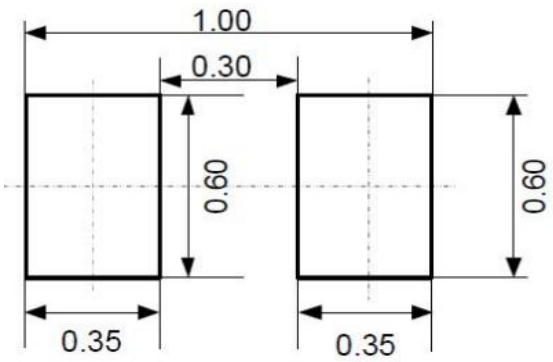
Case: DFN1006-2L

Case Material: Molded Plastic. UL Flammability

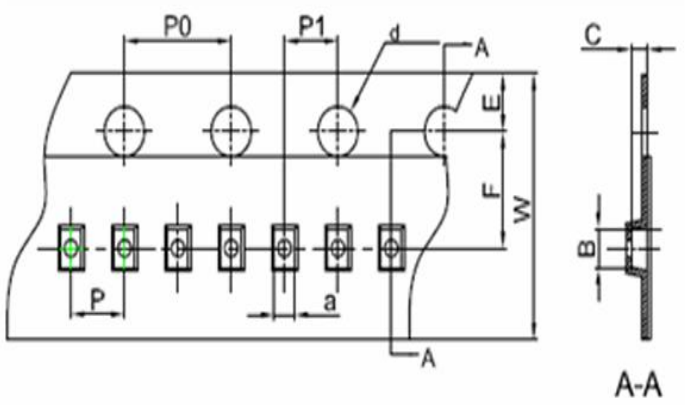


DIM	Millimeters	
	Min	Max
A	0.43	0.55
A1	0.00	0.05
D	0.55	0.65
E	0.95	1.05
b	0.45	0.60
e	0.65TYP	
L	0.2	0.3
L1	0.05REF	

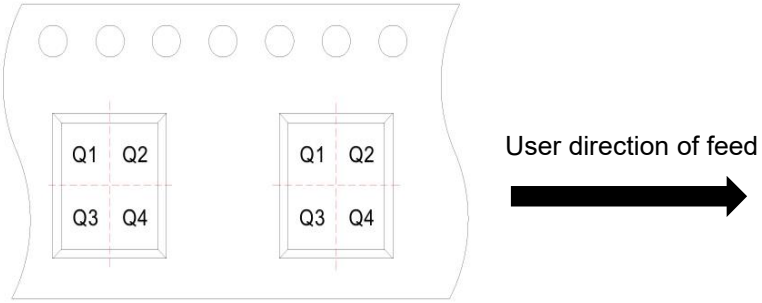
Recommended Pad outline (Unit: mm)



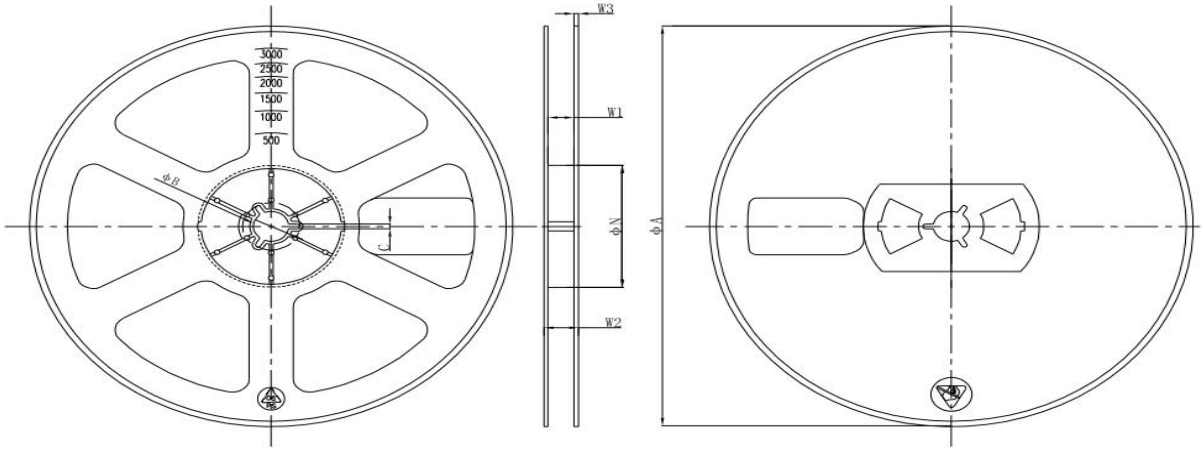
Type and Reel Information-DFN1006-2L



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



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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