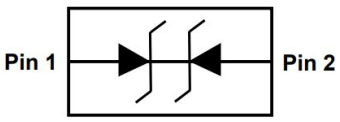
SSCE7V042N1

1-line Bidirectional Micro Packaged TVS Diodes for ESD Protection

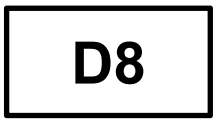
Description

The SSCE7V042N1 is designed with SSC 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,SDI and other high speed line applications.

PIN configuration



Top view



Marking

Feature

- 84W peak pulse power (t_P = 8/20us)
- DFN1006-2L Package
- Working voltage: 7V
- Low clamping voltage
- Low capacitance
- Low leakage current
- RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD)±20kV(air),±20kV(contact)

Applications

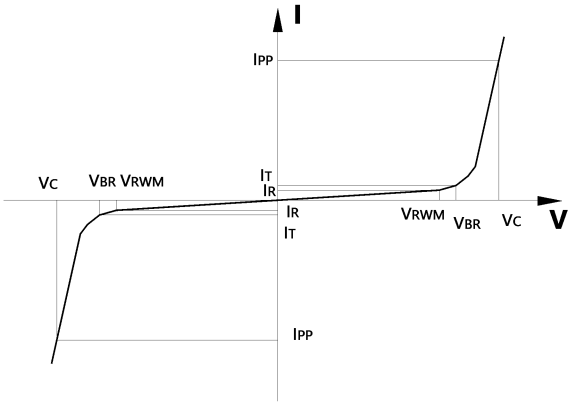
- DVI & HDMI Port Protection
- Serial and Parallel Ports
- Projection TV
- Notebooks, Desktops, Servers
- Portable instrumentation
- Mobile Phones and Accessories

Mechanical data

- Lead finish:100% matte Sn(Tin)
- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 1 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



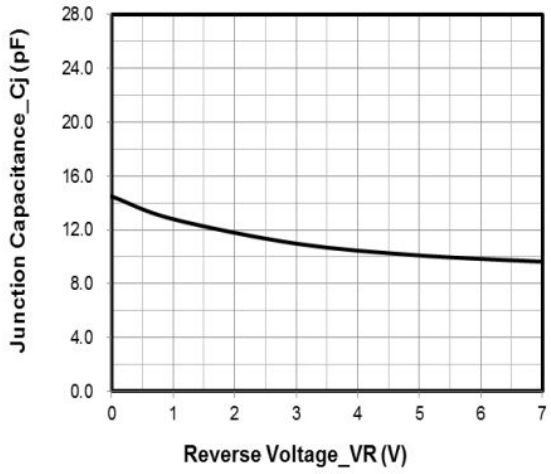
Absolute maximum rating @TA=25℃

Parameter	Symbol	Value	Unit
Peak Pulse Power（8/20us）	P_{PP}	84	W
Peak Pulse Current（8/20us）	I_{PP}	6	A
ESD Rating per IEC61000-4-2： Contact Air	V_{ESD}	20 20	KV
Storage Temperature	T_{STG}	-55/+150	℃
Operating Temperature	T_J	-55/+125	℃

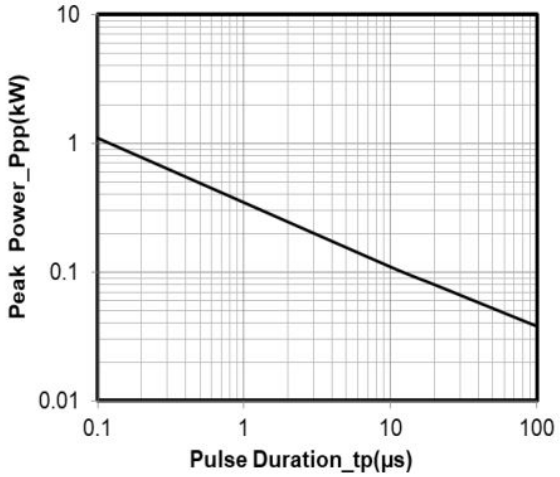
Electrical Characteristics @TA=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				7	V
Breakdown Voltage	V_{BR}	I_T = 1mA	7.5			V
Reverse Leakage Current	I_R	V_{RWM} =7V			1	μA
Clamping Voltage	V_C	I_{PP} = 1A, t_P = 8/20us			9	V
Clamping Voltage	V_C	I_{PP}=6A, t_P = 8/20us			14	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		14	20	pF

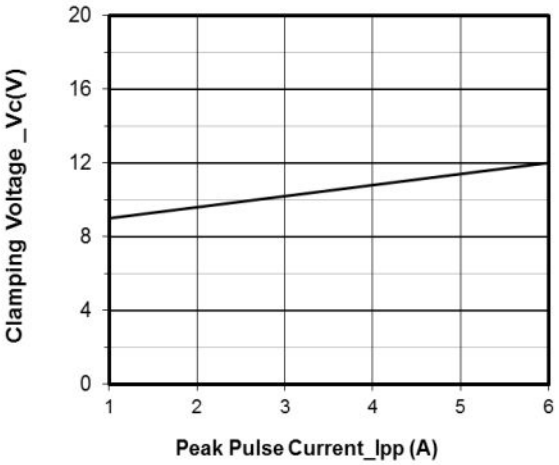
- **Typical Performance Characteristics**



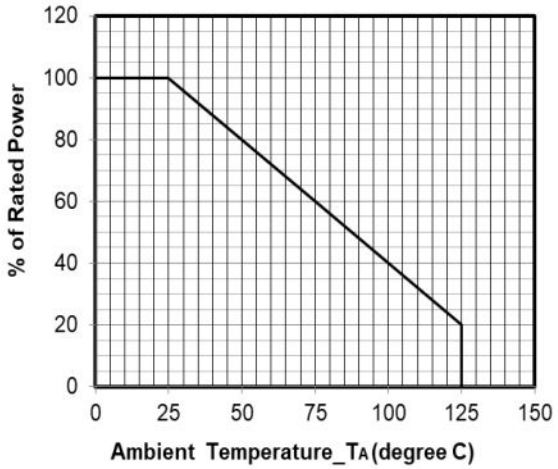
Junction Capacitance vs. Reverse Voltage



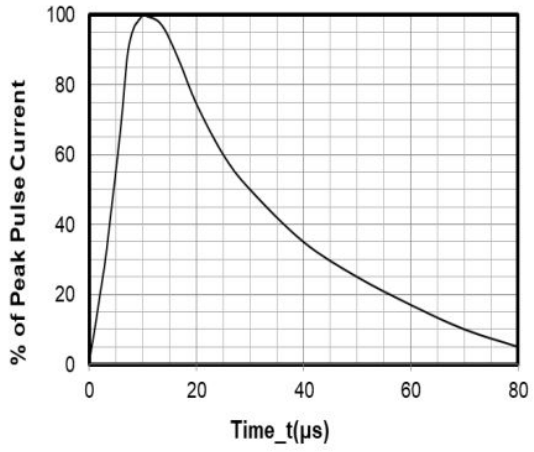
Peak Pulse Power vs. Pulse Time



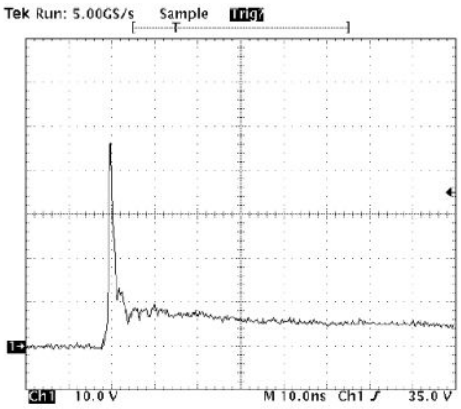
Clamping Voltage vs. Peak Pulse Current (tp = 8/20μs)



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**

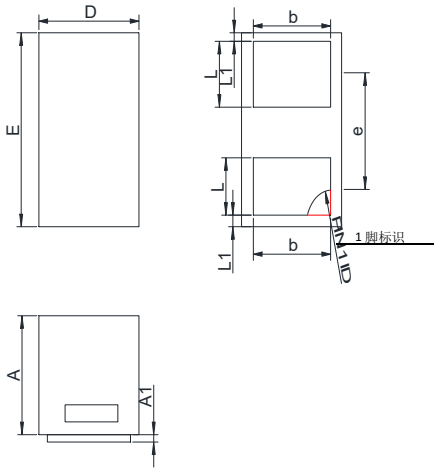
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE7V042N1	DFN1006-2L	10000	7 Inch

Mechanical Data

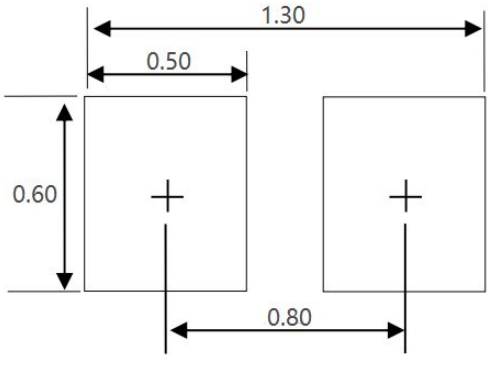
Case:DFN1006-2L

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	2021-04-14
V1.1	1.Revise Typical Performance Characteristics 2.Revise P_{PP} and I_{PP}	2022-05-10

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