



SSCTXXV11L2

High Power TVS Diode

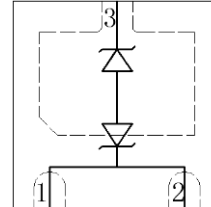
● Description

The SSCTXXV11L2 is a high power TVS, 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 lines. The SSCT12V11L2 complies with the IEC 610002 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a 3pin DFN20203 package. The leads are finished with NiPdAu. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multimedia card interfaces.

● Feature

- ✧ 4500`5500W peak pulse power (TP = 8/20 μs)
- ✧ DFN2020-3Package
- ✧ Working voltage: 12V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)

● PIN configuration



Topview

● Applications

- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Server
- ✧ USB 1.1/2.0/3.0/3.1/OTG

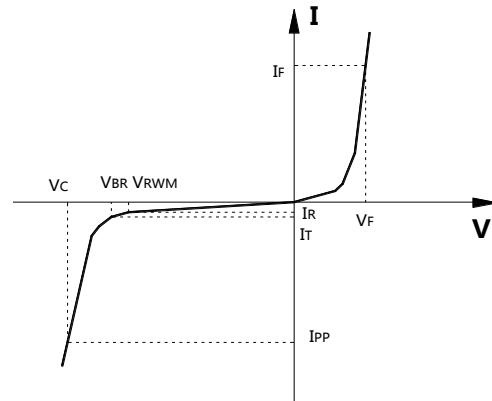
● Mechanical data

- ✧ Lead finish:100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature:260 $^{\circ}\text{C}$
- ✧ Device meets MSL 1 requirements
- ✧ Pure tin plating: 7 ~ 17 μm



● **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	Junction Capacitance



● **Absolute maximum rating @TA=25°C**

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20μS)	4500-5500	W
T_{STG}	Storage Temperature	-55/+150	°C
T_J	Operating Temperature	-55/+150	°C

● **Electrical Characteristics @TA=25°C**

SSCT12V11L2

Electrical characteristics (Temp=25°C Unless Otherwise Specified)						
Symb ol	Parameter	Conditions	Min.	Typ.	Max.	Units
V_{RWM}	Reverse Working Voltage	Pin 3 to pin 1,2			12	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1mA$, Pin 3 to pin 1,2	13.5			V
I_R	Reverse Leakage Current	$V_{RWM} = 12V$, Pin 3 to pin 1,2			1	μA
V_C	Clamping Voltage	$I_{PP} = 50A$, $t_p = 8/20\mu s$, Pin 3 to pin 1,2		19		V
		$I_{PP} = 170A$, $t_p = 8/20\mu s$, Pin 3 to pin 1,2		24.5	29	V
C_j	Junction Capacitance	$V_R = 0V$, $f = 1MHz$, Pin 3 to pin 1,2		1.3		nF
I_{PP}	Peak Pulse Current	$t_p = 8/20\mu s$ waveform			190	A
P_{PP}	Peak Pulse Power	$t_p = 8/20\mu s$ waveform		4500		W



SSCTXXV11L2

SSCT14V11L2

Electrical characteristics (Temp=25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{RWM}	Reverse Working Voltage	Pin 3 to pin 1,2			14	V
V _{BR}	Reverse Breakdown Voltage	IT = 1mA, Pin 3 to pin 1,2	15.2			V
I _R	Reverse Leakage Current	V _{RWM} =14V, Pin 3 to pin 1,2			1	μA
V _C	Clamping Voltage	I _{PP} = 50A, tp =8/20μs, Pin 3 to pin 1,2		21		V
		I _{PP} =160A, tp =8/20μs, Pin 3 to pin 1,2		27.5	31	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz, Pin 3 to pin 1,2		1.1		nF
I _{PP}	Peak Pulse Current	tp=8/20μs waveform			170	A
P _{pp}	Peak Pulse Power	tp=8/20μs waveform		4500		W

SSCT17V11L2

Electrical characteristics (Temp=25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{RWM}	Reverse Working Voltage	Pin 3 to pin 1,2			17	V
V _{BR}	Reverse Breakdown Voltage	IT = 1mA, Pin 3 to pin 1,2	18.2			V
I _R	Reverse Leakage Current	V _{RWM} =17V, Pin 3 to pin 1,2			1	μA
V _C	Clamping Voltage	I _{PP} = 50A, tp =8/20μs, Pin 3 to pin 1,2		26		V
		I _{PP} =130A, tp =8/20μs, Pin 3 to pin 1,2		30	36	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz, Pin 3 to pin 1,2		0.95		nF
I _{PP}	Peak Pulse Current	tp=8/20μs waveform			150	A
P _{pp}	Peak Pulse Power	tp=8/20μs waveform		4500		W



SSCTXXV11L2

SSCT24V11L2

Electrical characteristics (Temp=25°C Unless Otherwise Specified)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Units
V _{RWM}	Reverse Working Voltage	Pin 3 to pin 1,2			24	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA, Pin 3 to pin 1,2	25			V
I _R	Reverse Leakage Current	V _{RWM} =24V, Pin 3 to pin 1,2			1	μA
V _C	Clamping Voltage	I _{pp} = 50A, t _p =8/20μs, Pin 3 to pin 1,2		26		V
		I _{pp} =150A, t _p =8/20μs, Pin 3 to pin 1,2		29	35	V
C _J	Junction Capacitance	V _R = 0V, f = 1MHz, Pin 3 to pin 1,2		0.74		nF
I _{PP}	Peak Pulse Current	t _p =8/20μs waveform			200	A
P _{pp}	Peak Pulse Power	t _p =8/20μs waveform		5500		W

Junction capacitance is measured in VR=0V,F=1MHz



SSCTXXV11L2

● Typical Performance Characteristics

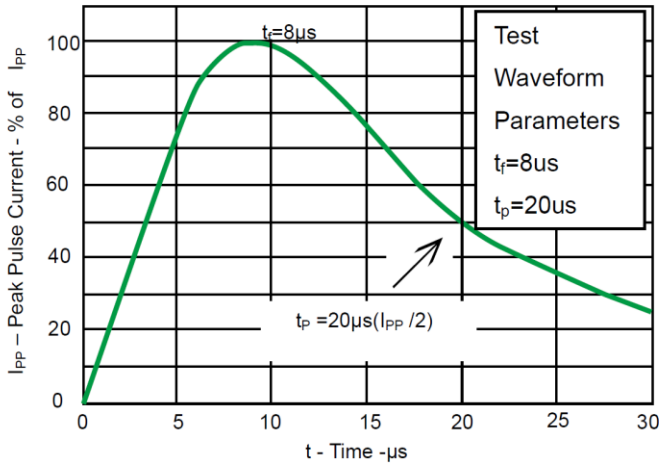


Fig 1. Pulse Waveform

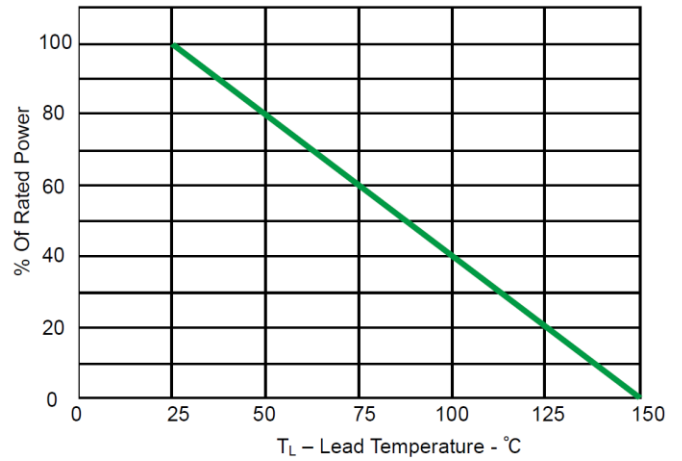
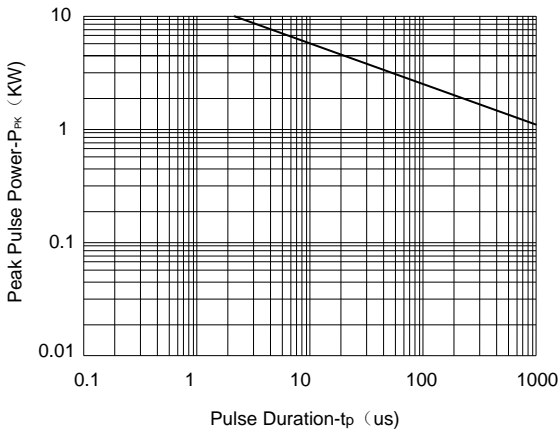


Fig 2. Power Derating Curve

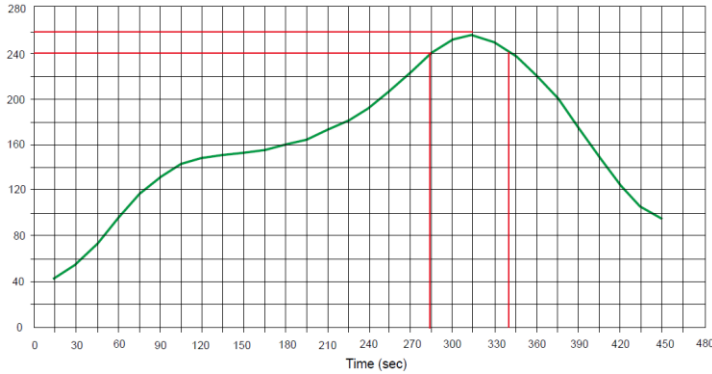


Non-Repetitive Peak Pulse Power vs. Pulse Time



● Solder Reflow Recommendation

Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



● Package Information

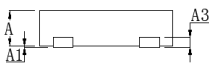
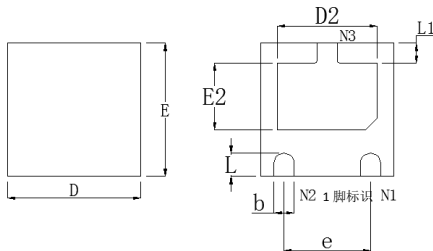
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCEXXV11L2	DFN2020-3	3000	7 Inch

Mechanical Data

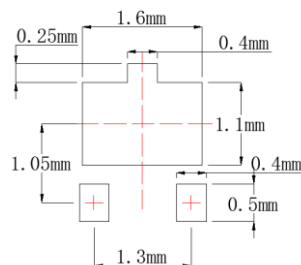
Case: DFN2020-3

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters		
	Min	Nom	Max
A	0.50	0.55	0.60
A1	0.00	-	0.05
A3	0.15 REF.		
D	1.95	2.00	2.05
E	1.95	2.00	2.05
b	0.25	0.30	0.35
L	0.30	0.35	0.40
L1	0.25	0.30	0.35
D2	1.35	1.50	1.60
E2	0.85	1.00	1.10
e	1.30 BSC		

Recommended Pad outline





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