



## SSCT24V31L2

High Power TVS Diode

### ● Description

The SSCT24V31L2 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 SSCT24V31L2 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 DFN2020-3L package. 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, POS, and multimedia card interfaces.

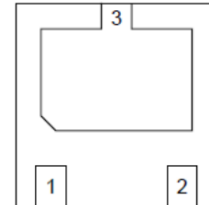
### ● Feature

- ✧ 7200W peak pulse power ( $T_P = 8/20\mu\text{s}$ )
- ✧ DFN2020-3L Package
- ✧ Working voltage: 24V
- ✧ Low clamping voltage
- ✧ Low leakage current
- ✧ 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 (Surge) 120A (8/20 $\mu\text{s}$ )

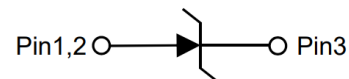
### ● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ RoHS compliant
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature:  $260^\circ\text{C}$
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17  $\mu\text{m}$

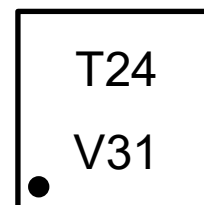
### ● PIN configuration



**DFN2020-3L**



**Circuit Diagram**



**Marking (Top View)**

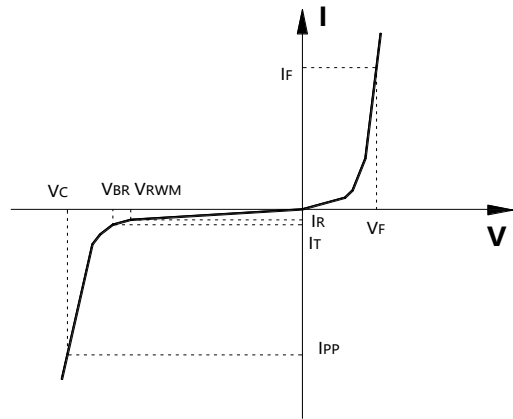
### ● Applications

- ✧ Power Management
- ✧ Industrial Application
- ✧ Power Supply Protection
- ✧ Cell phone handsets and accessories
- ✧ Personal digital assistants (PDA's)
- ✧ Notebooks, desktops, and servers
- ✧ Portable instrumentation
- ✧ Cordless phones
- ✧ Peripherals



● **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 ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

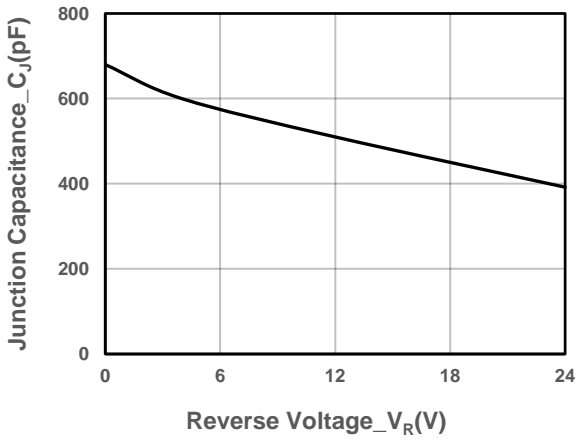
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	$P_{PP}$	7200	W
Peak Pulse Current (8/20 $\mu\text{s}$ )	$I_{PP}$	120	A
ESD Rating per IEC61000-4-2:	Contact Air	30	kV
		30	
Storage Temperature	$T_{STG}$	-55/+150	$^\circ\text{C}$
Operating Temperature	$T_J$	-55/+125	$^\circ\text{C}$

● **Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)**

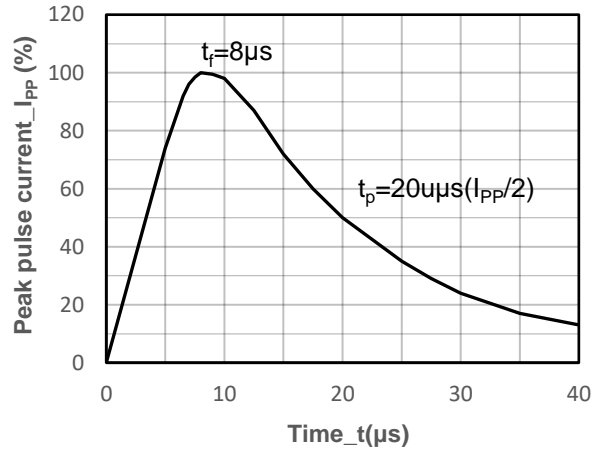
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				24	V
Breakdown Voltage	$V_{BR}$	$I_T = 1\text{mA}$	26		30	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 24\text{V}$			1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP} = 50\text{A}$ , $t_P = 8/20\mu\text{s}$		34		V
Clamping Voltage	$V_C$	$I_{PP} = 120\text{A}$ , $t_P = 8/20\mu\text{s}$		44	60	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		680		pF



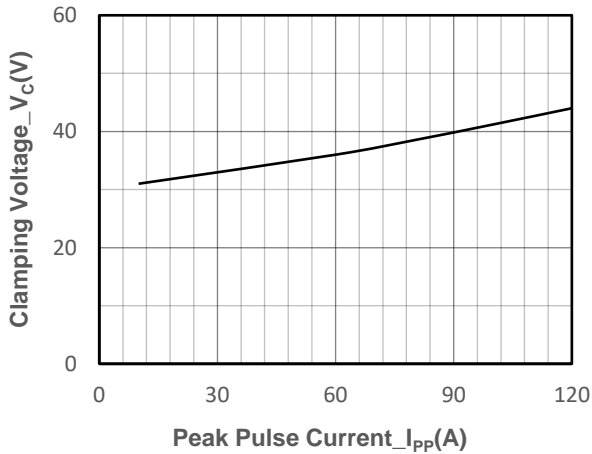
● Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)



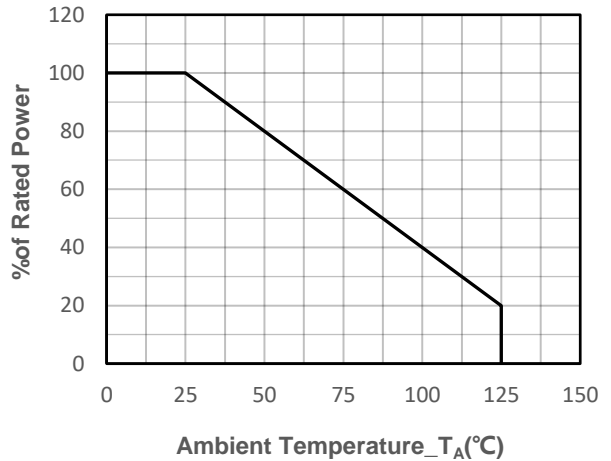
Junction Capacitance vs. Reverse Voltage



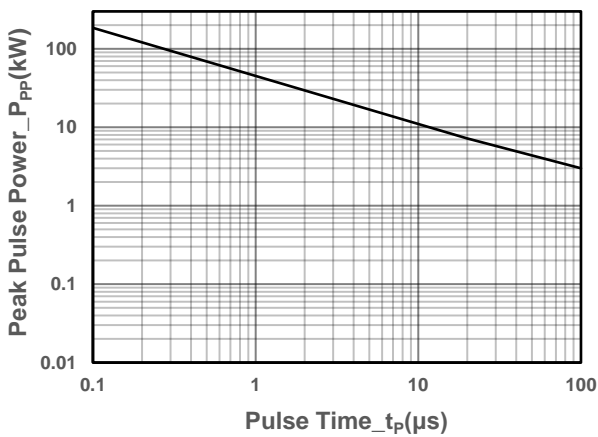
8/20 $\mu\text{s}$  Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



Peak Pulse Power vs. Pulse Time



## ● Package Information

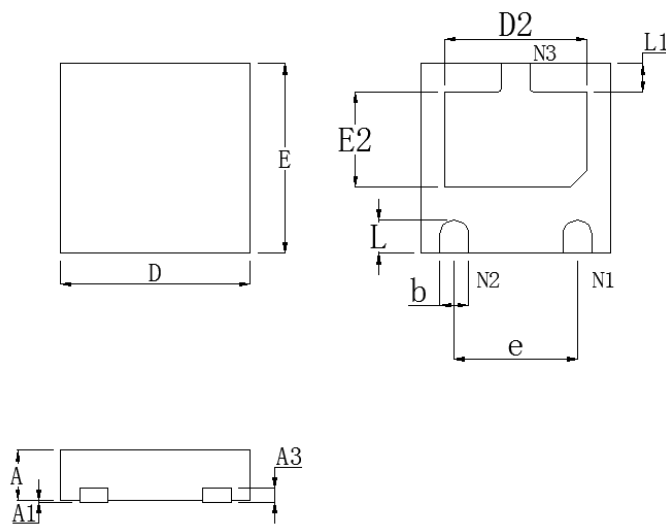
### Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT24V31L2	DFN2020-3L	3000	7 Inch

### Mechanical Data

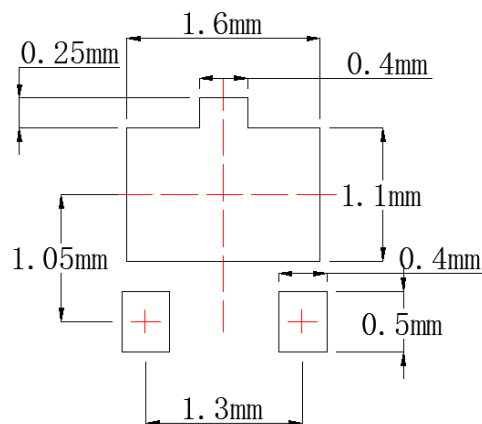
Case: DFN2020-3L

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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