



## SSCT20V21L2

High Power TVS Diode

### ● Description

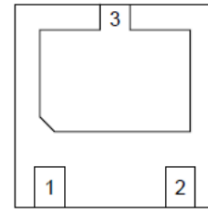
The SSCT20V21L2 is a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines. The SSCT20V21L2 complies with the IEC 610002 (ESD) standard with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into a 3pin DFN2020-3L package. 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

- ◇ 6500W peak pulse power (TP = 8/20us)
- ◇ DFN2020-3L Package
- ◇ Working voltage: 20V
- ◇ Low clamping voltage
- ◇ Low leakage current
- ◇ RoHS compliant
- ◇ 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) 145A (8/20us)

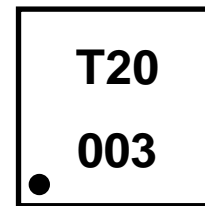
### ● PIN configuration



**Top view**



**Circuit Diagram**



**Marking**

### ● Applications

- ◇ Power lines
- ◇ Cellular handsets
- ◇ Tablets
- ◇ Microprocessors
- ◇ Portable Electronics
- ◇ Notebooks, Desktops, Server

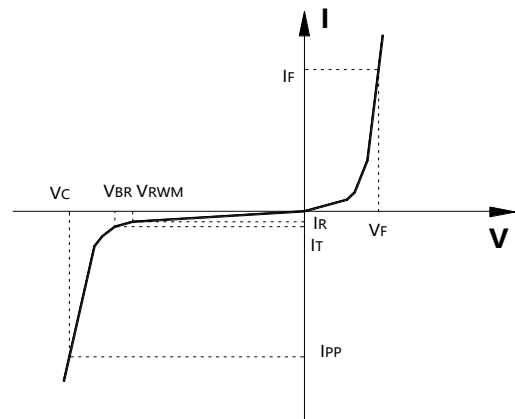
### ● Mechanical data

- ◇ Lead finish: 100% matte Sn(Tin)
- ◇ Mounting position: Any
- ◇ Qualified max reflow temperature: 260°C
- ◇ Device meets MSL 1 requirements
- ◇ Pure tin plating: 7 ~ 17 um



● **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°C**

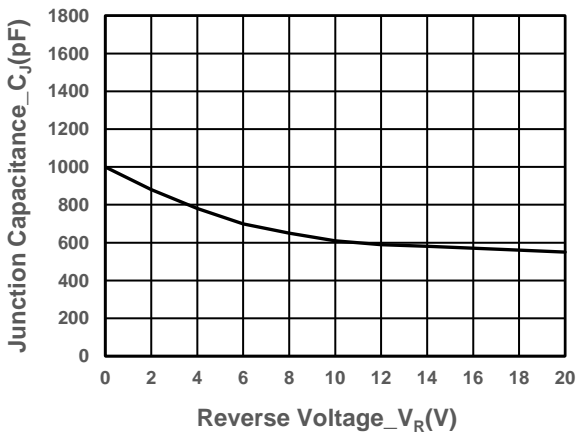
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	$P_{PP}$	6500	W
Peak Pulse Current (8/20us)	$I_{PP}$	145	A
ESD Rating per IEC61000-4-2:	$V_{ESD}$	Contact	30
		Air	30
Storage Temperature	$T_{STG}$	-55/+150	°C
Operating Temperature	$T_J$	-55/+125	°C

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

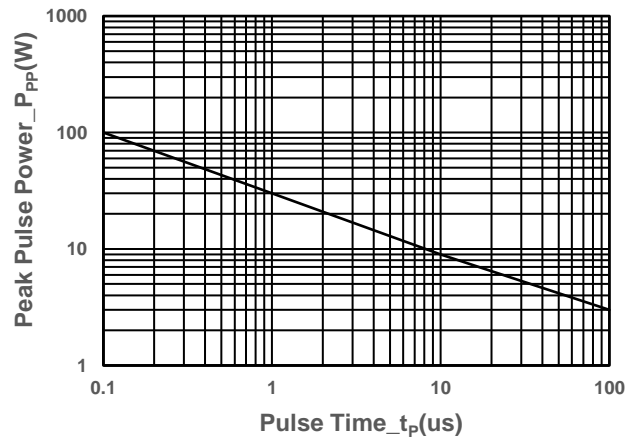
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	$V_{RWM}$				20	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	21		23.5	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 20V$			0.5	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 85A, t_p = 8/20us$			31.5	V
Clamping Voltage	$V_C$	$I_{PP} = 145A, t_p = 8/20us$			45	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		1000		pF



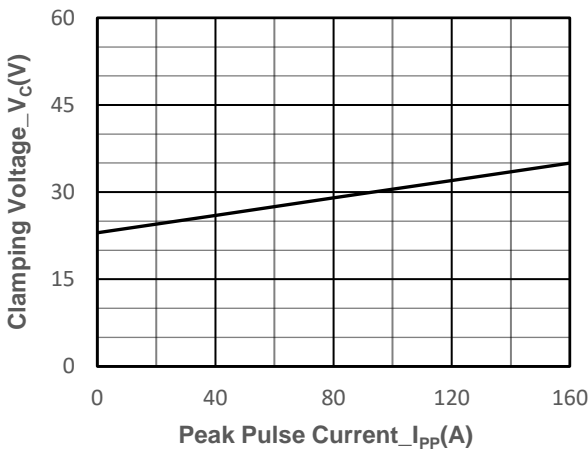
## ● Typical Performance Characteristics



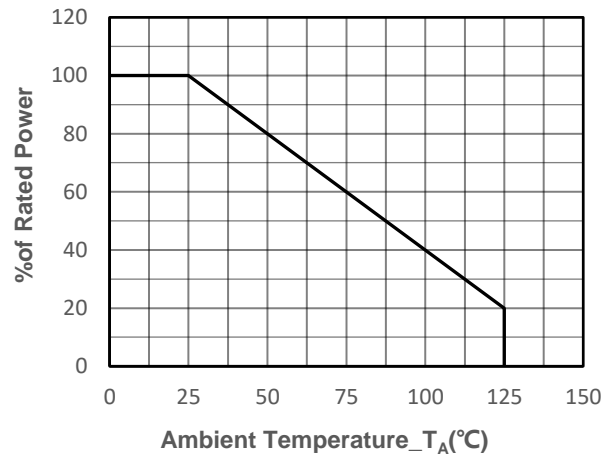
**Junction Capacitance vs. Reverse Voltage**



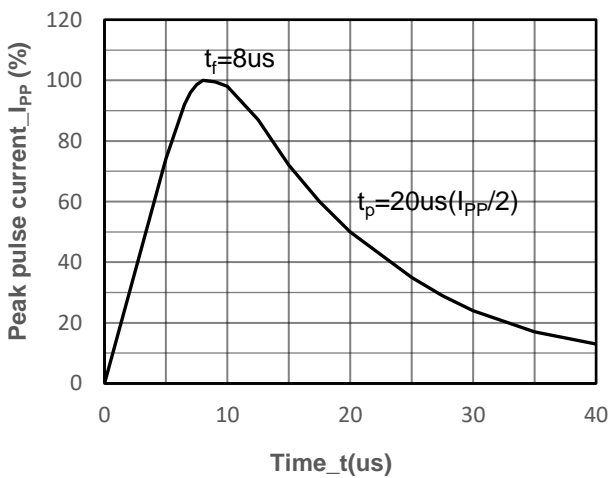
**Peak Pulse Power vs. Pulse Time**



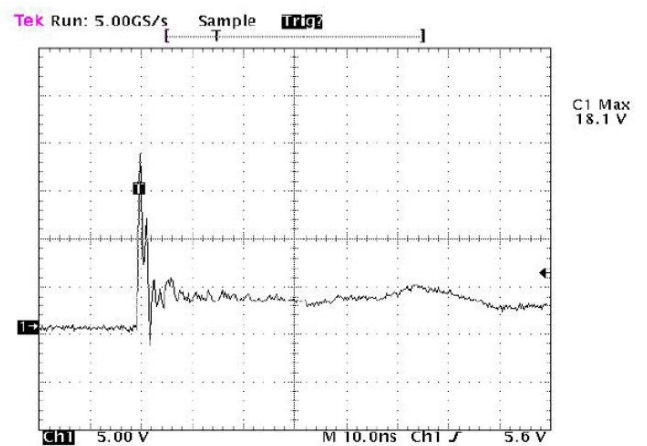
**Clamping Voltage vs. Peak Pulse Current**



**Power derating vs. Ambient temperature**



**8/20us Pulse Waveform**



**Note: Data is taken with a 10x attenuator  
ESD Clamping Voltage  
8KV Contact per IEC61000-4-2**



- **Package Information**

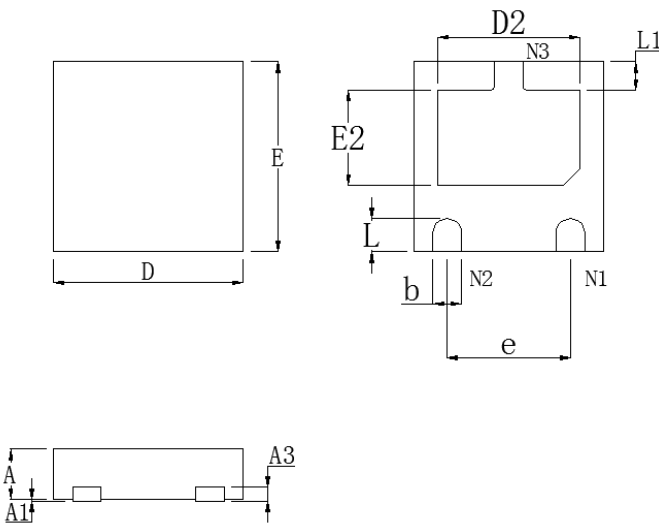
## Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT20V21L2	DFN2020-3L	3000	7 Inch

## Mechanical Data

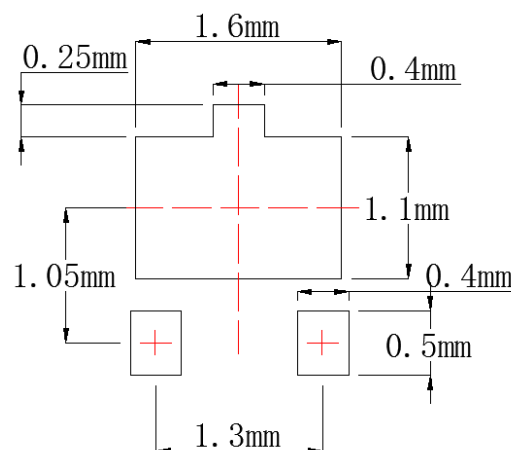
Case: DFN2020-3L

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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