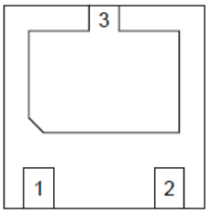
SSCT24V21L2

High Power TVS Diode

Description

The SSCT24V21L2 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 SSCT24V21L2 complies with the IEC 610002 (ESD) standard with ±30kV air and ±30kV 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.

PIN configuration



DFN2020-3L

Circuit Diagram

Applications

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

Marking (Top View)

Features

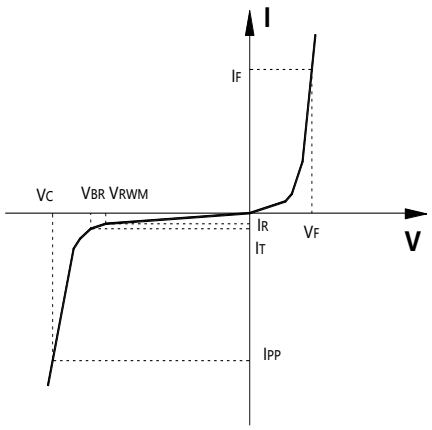
- ✧ 6500W peak pulse power (T_P = 8/20μs)
- ✧ DFN2020-3L Package
- ✧ Working voltage: 24V
- ✧ Low clamping voltage
- ✧ Low leakage current
- ✧ RoHS compliant
- ✧ Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±30kV
    - Contact discharge: ±30kV
  - – IEC61000-4-5 (Surge) 140A (8/20μs)

Mechanical Characteristics

- ✧ 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

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



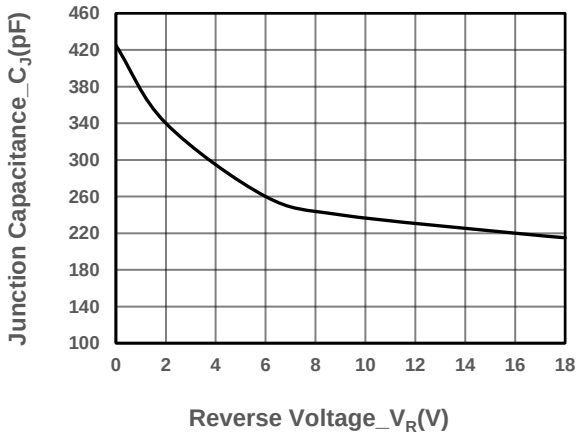
Absolute maximum rating @T_A=25℃

Parameter		Symbol	Value	Units
Peak Pulse Power（8/20μs）		P_{PP}	6500	W
Peak Pulse Current（8/20μs）		I_{PP}	140	A
ESD Rating per IEC61000-4-2：	Contact Air	V_{ESD}	30 30	kV
Storage Temperature		T_{STG}	-55/+150	℃
Operating Temperature		T_J	-55/+125	℃

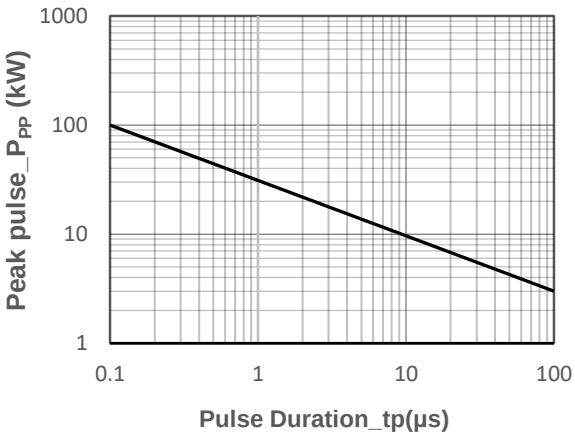
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}	Any I/O to Ground		24		V
Breakdown Voltage	V_{BR}	I_T = 1mA Any I/O to Ground	25			V
Reverse Leakage Current	I_R	V_{RWM} = 24V			1	μA
Clamping Voltage	V_C	I_{PP} = 50A, t_P = 8/20μs			34	V
Clamping Voltage	V_C	I_{PP} = 140A, t_P = 8/20μs			50	V
Junction Capacitance	C_J	VR = 0V, f = 1MHz, any I/O pin to Ground		740		pF

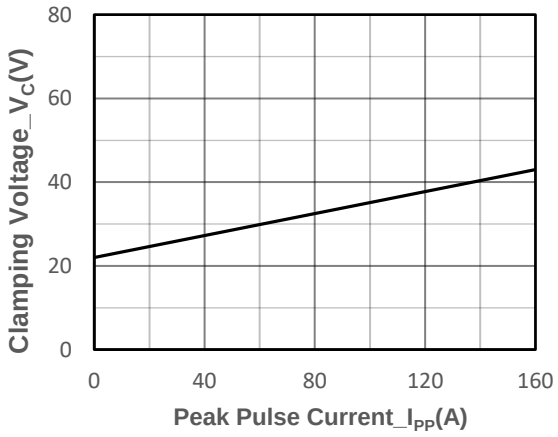
- **Typical Performance Characteristics(T_A=25℃ unless otherwise Specified)**



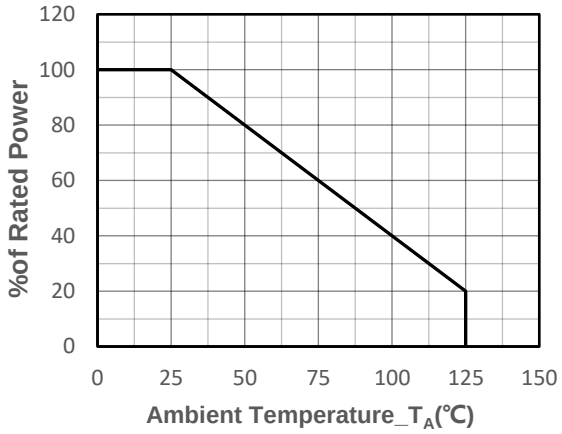
Junction Capacitance vs. Reverse Voltage



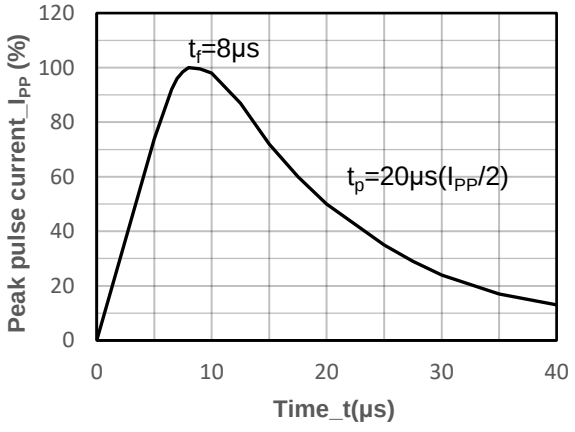
Peak Pulse Power vs. Pulse Time



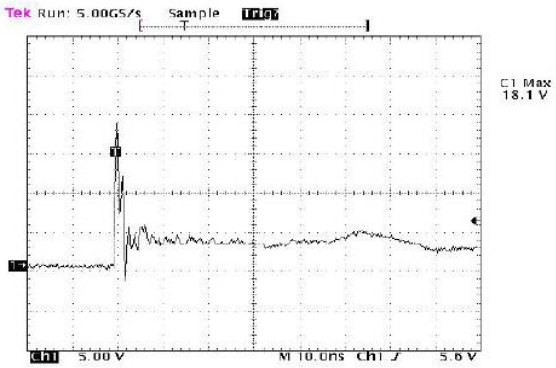
Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



8 x 20μs Pule Waveform



Note: Data is taken with a 10x attenuator

ESD Clamping Voltage

8 kV Contact per IEC61000-4-2

Package Information

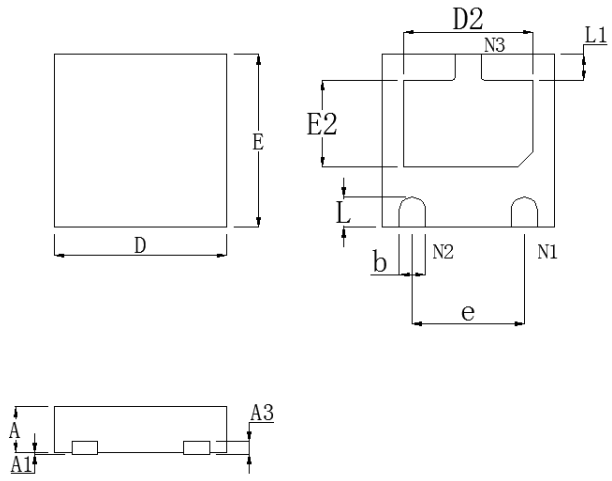
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT24V21L2	DFN2020-3L	3000	7 Inch

Mechanical Data

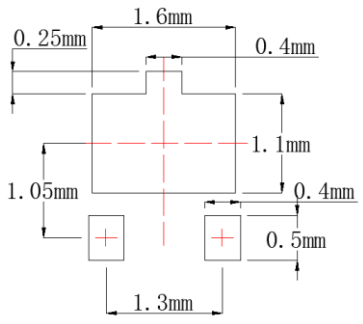
Case: DFN2020-3L

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters		
	Min	Nom	Max
A	0.55	0.60	0.65
A1	0.00	0.02	0.05
A3		0.10REF	
D	1.90		2.10
E	1.90		2.10
b	0.25		0.35
e	1.20		1.40
L	0.35		0.45
L1	0.20		0.30
D2	1.40		1.60
E2	0.95		1.15

Recommended Pad outline (Unit: mm)



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