SSCT12V11L2

1-Line High Power TVS Diode

Description

The SSCT12V11L2 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 ±30kV air and ±30kV contact discharge. It is assembled into a 3pin DFN2020-3 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.

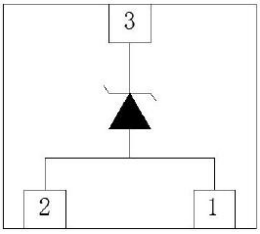
Feature

- 6600W peak pulse power (TP = 8/20μs)
- DFN2020-3Package
- Working voltage: 12V
- Low clamping voltage
- Low capacitance
- RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD)±30kV(air),±30kV(contact)

Applications

- DVI & HDMI Port Protection
- Serial and Parallel Ports
- Projection TV
- Notebooks, Desktops, Server
- USB 1.1/2.0/3.0/4.0/OTG

PIN configuration



Top view

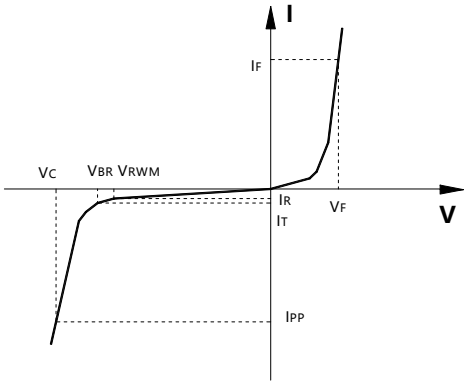
Marking

Mechanical data

- 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



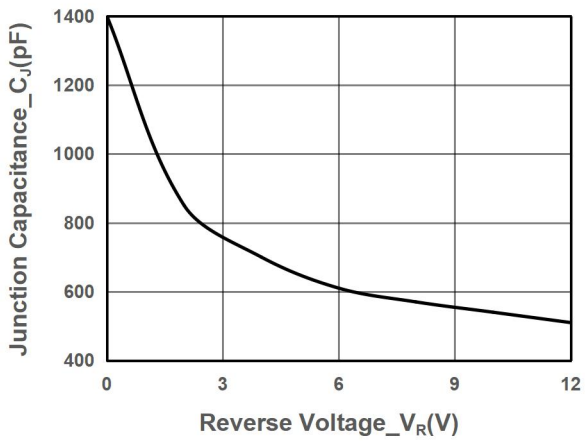
Absolute maximum rating @TA=25℃

Parameter		Symbol	Value	Units
Peak Pulse Power（8/20μs）		P_{PP}	6600	W
Peak Pulse Current（8/20μs）		I_{PP}	220	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	℃

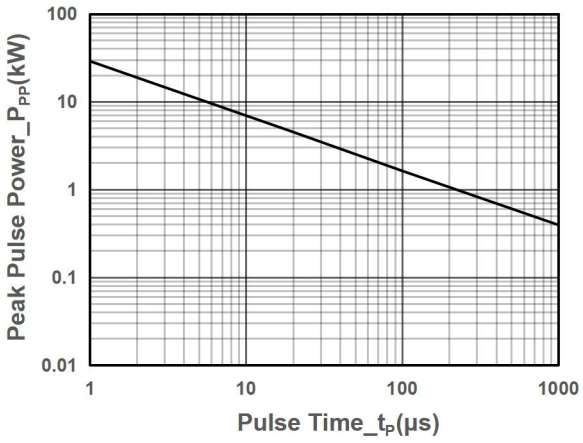
Electrical Characteristics @TA=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}	Any I/O to Ground			12	V
Breakdown Voltage	V_{BR}	I_T = 1mA	13.2	14	15	V
Reverse Leakage Current	I_R	V_{RWM} = 12V,T=25℃			1	μA
Clamping Voltage	V_C	I_{PP} = 50A, t_P = 8/20μs		17		V
Clamping Voltage	V_C	I_{PP} = 220A, t_P = 8/20μs		25	30	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		1400		pF

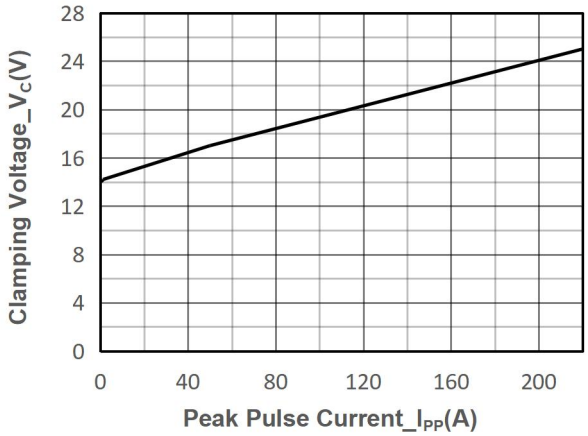
Typical Performance Characteristics



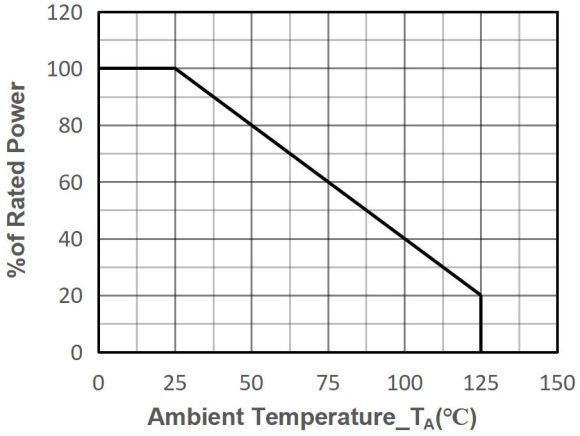
Junction Capacitance vs.Reverse Voltage



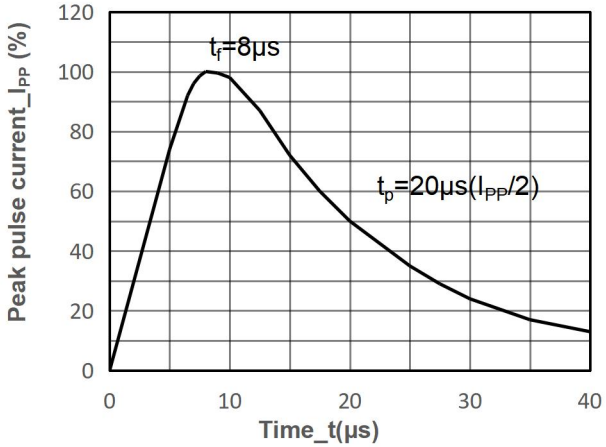
Peak Pulse Power vs. Pulse Time



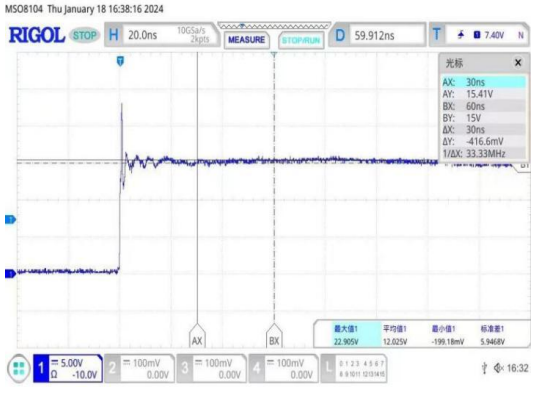
Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



8/20μs Pulse Waveform



Note: Data is taken with a 10x attenuator ESD Clamping Voltage 8kV contact per IEC61000-4-2

Package Information

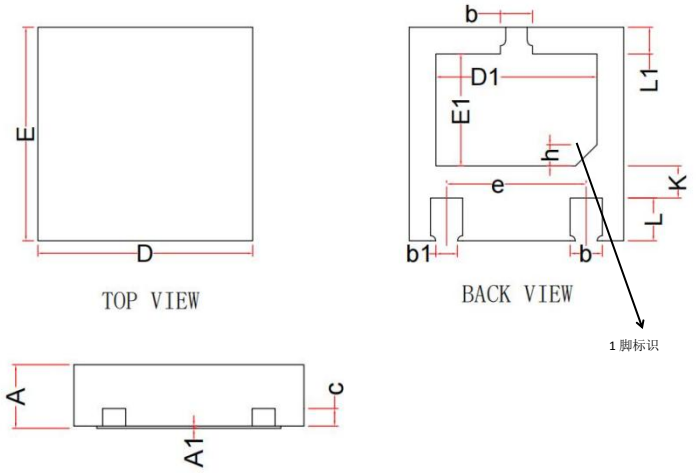
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT12V11L2	DFN2020-3L	3000	7 Inch

Mechanical Data

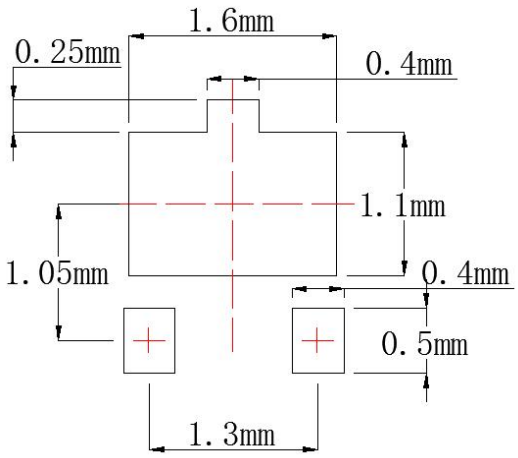
Case: DFN2020-3

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters		
	Min	Nom	Max
A	0.40	0.55	0.60
A1	0.00	0.02	0.05
b	0.25	0.30	0.35
b1		0.20 Ref	
c		0.20 Ref	
D	1.90	2.00	2.10
D1	1.35	1.50	1.60
e		1.30 BSC	
E	1.90	2.00	2.10
E1	0.95	1.05	1.15
L	0.30	0.40	0.45
L1	0.20	0.25	0.35
h		0.20 Ref	
K	0.20	0.30	0.40

Recommended Pad outline



DISCLAIMER

SSCSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. SSCSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICIENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G, OUTSIDE SPECIFIED POWER SUPPLY RANG) AND THEREFORE OUTSIDE THE WARRANTED RANGE.

OUR PRODUCT SPECIFICATIONS ARE ONLY VALID IF OBTAINED THROUGH THE COMPANY'S OFFICIAL WEBSITE, CRM SYSTEM, OR OUR SALES PERSONNEL CHANNELS. IF CHANGES OR SPECIAL VERSIONS ARE INVOLVED, THEY MUST BE STAMPED WITH A QUALITY SEAL AND MARKED WITH A SPECIAL VERSION NUMBER TO BE VALID.