



SSCT30V11L2

High Power TVS Diode

● Description

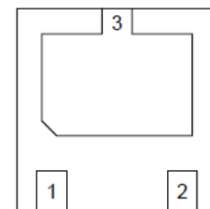
The SSCT30V11L2 is a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines. The SSCT30V11L2 complies with the IEC 610002 (ESD) standard with $\pm 30\text{kV}$ 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

- ✧ 7600W peak pulse power ($T_P = 8/20\mu\text{s}$)
- ✧ DFN2020-3L Package
- ✧ Working voltage: 30V
- ✧ 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) 200A (8/20 μs)

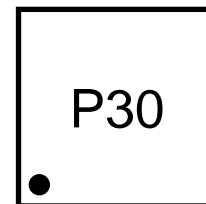
● PIN configuration



Top View



Circuit Diagram



Marking

● Applications

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

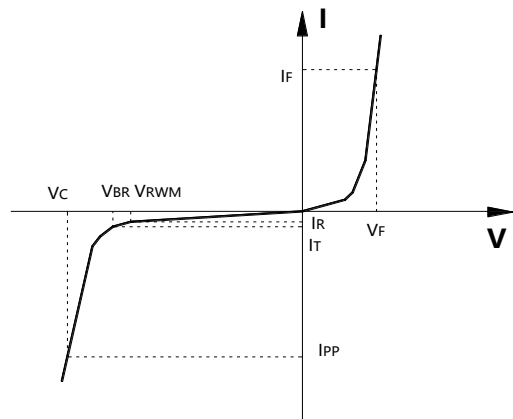
● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 3 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_J | Junction Capacitance |



● Absolute maximum rating @ $T_A=25^\circ\text{C}$

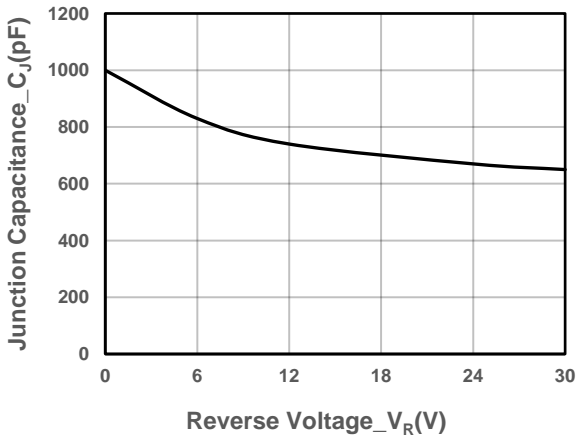
| Parameter | Symbol | Value | Unit |
|--|-----------|----------|------------------|
| Peak Pulse Power (8/20 μs) | P_{PP} | 7600 | W |
| Peak Pulse Current (8/20 μs) | I_{PP} | 200 | A |
| ESD Rating per IEC61000-4-2: | Contact | 30 | kV |
| | Air | 30 | |
| Storage Temperature | T_{STG} | -55/+150 | $^\circ\text{C}$ |
| Operating Temperature | T_J | -55/+125 | $^\circ\text{C}$ |

● Electrical Characteristics @ $T_A=25^\circ\text{C}$

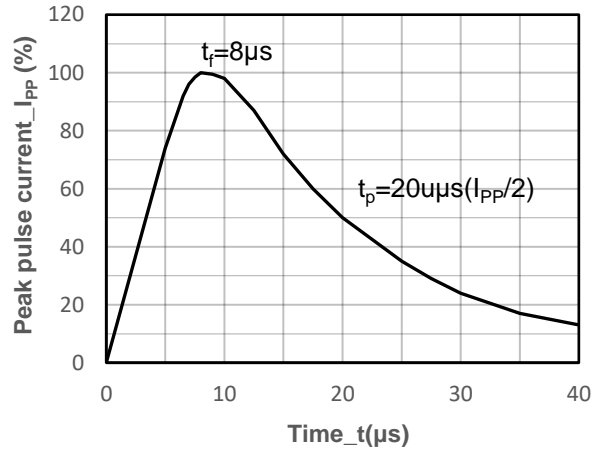
| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|------------------------------|-----------|--|------|------|------|---------------|
| Peak Reverse Working Voltage | V_{RWM} | | | | 30 | V |
| Breakdown Voltage | V_{BR} | $I_T = 1\text{mA}$ | 31.5 | | 35 | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 30\text{V}$ | | | 0.5 | μA |
| Clamping Voltage | V_C | $I_{PP} = 20\text{A}$, $t_P = 8/20\mu\text{s}$ | | | 36 | V |
| Clamping Voltage | V_C | $I_{PP} = 200\text{A}$, $t_P = 8/20\mu\text{s}$ | | | 38 | V |
| Junction Capacitance | C_J | $V_R=0\text{V}$, $f = 1\text{MHz}$ | | | 1100 | pF |



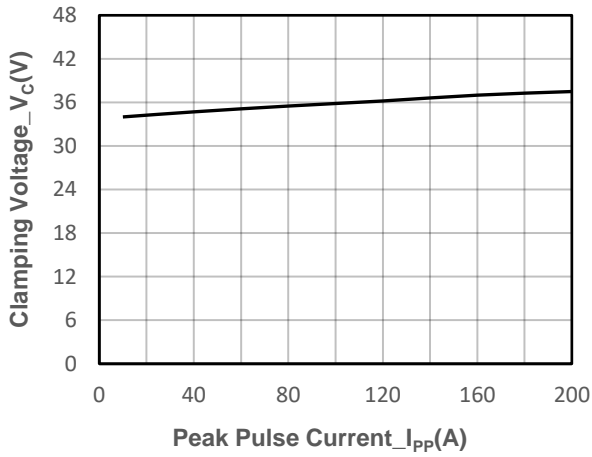
● Typical Performance Characteristics



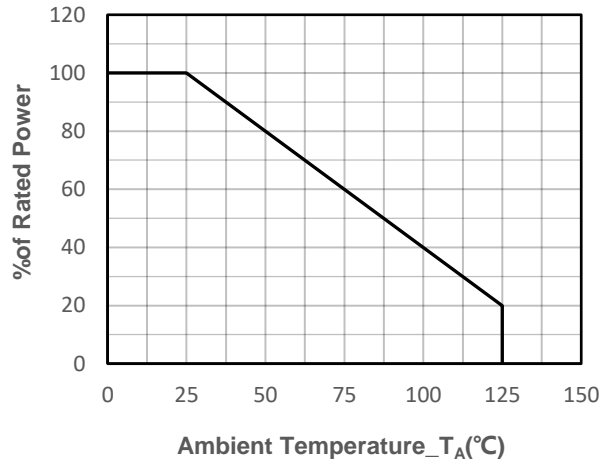
Junction Capacitance vs. Reverse Voltage



8/20 μ s Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



● Package Information

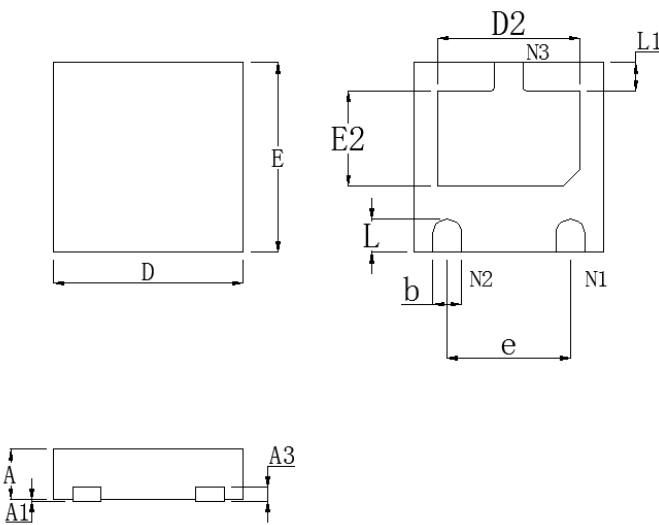
Ordering Information

| Device | Package | Qty per Reel | Reel Size |
|-------------|------------|--------------|-----------|
| SSCT30V11L2 | DFN2020-3L | 3000 | 7 Inch |

Mechanical Data

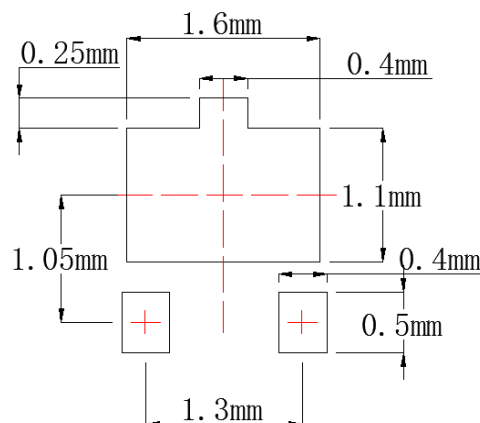
Case: DFN2020-3L

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





DISCLAIMER

AFSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. AFSEMI 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 RANGE) 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.