# SSCT15V21N1

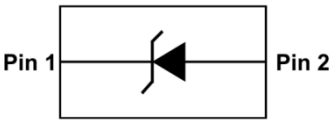
1-Line Bidirectional Micro Packaged TVS Diodes for ESD Protection

## Description

The SSCT15V21N1 is an uni-directional TVS diode, 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 data and power line. The SSCT15V21N1 complies with the IEC 61000-4-2 (ESD) with ±30 kV air and ±30 kV contact discharge. It is assembled into an ultra-small 1.0x0.6x0.5mm lead-free DFN package. The small size and high ESD surge protection make SSCT15V21N1 an ideal choice to protect cell phone, digital cameras, and many other portable applications.

## PIN configuration

**DFN1006-2L (Bottom View)**




**Top view**


**Marking**

## Feature

- 980W peak pulse power ($t_P$ = 8/20μs)
- DFN1006-2L Package
- Working voltage: 15V
- Low clamping voltage
- Low capacitance
- Low leakage current
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Lightning)35A (8/20μs)

## Applications

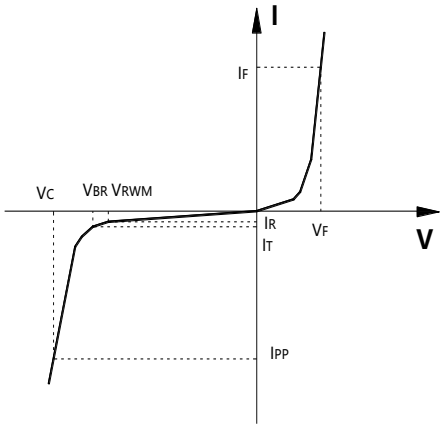
- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Digital Cameras
- Peripherals
- Audio Players

## Mechanical data

- Lead finish:100% matte Sn (Tin)
- RoHS compliant
- Case Material: “Green” Molding Compound
- Qualified max reflow temperature:260℃
- Device meets MSL3 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness: ≤3mil

## 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 |



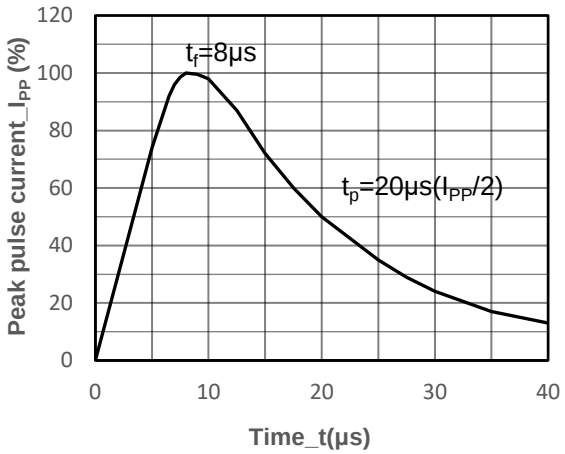

## Absolute maximum rating @$T_A$=25℃

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power（8/20μs） | $P_{PP}$ | 980 | W |
| Peak Pulse Current（8/20μs） | $I_{PP}$ | 35 | A |
| Forward Voltage (IF = 10mA) | VF | 1.2 | V |
| ESD Rating per IEC61000-4-2： Contact<br>Air | $V_{ESD}$ | 30<br>30 | kV |
| Storage Temperature | $T_{STG}$ | -55/+150 | ℃ |
| Operating Temperature | $T_J$ | -55/+125 | ℃ |

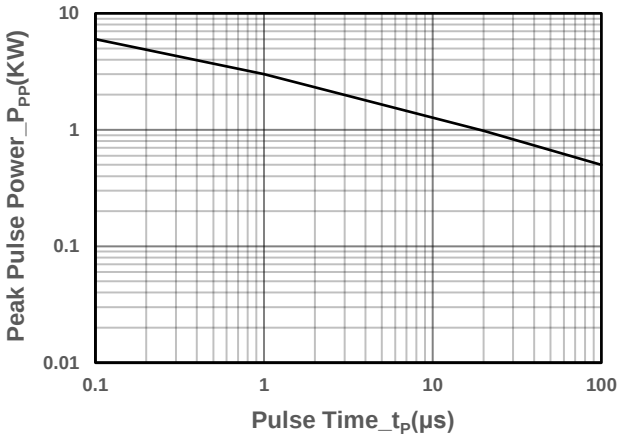
## Electrical Characteristics @$T_A$=25℃

| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Peak Reverse Working Voltage | $V_{RWM}$ | | | | 15 | V |
| Breakdown Voltage | $V_{BR}$ | $I_T$ = 1mA | 16 | | 18 | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$ =15V | | | 0.1 | μA |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 1A, $t_P$ = 8/20μs | | | 20 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 35A, $t_P$ = 8/20μs | | | 28 | V |
| Junction Capacitance | $C_J$ | $V_R$ = 0V, f = 1MHz | | | 100 | pF |

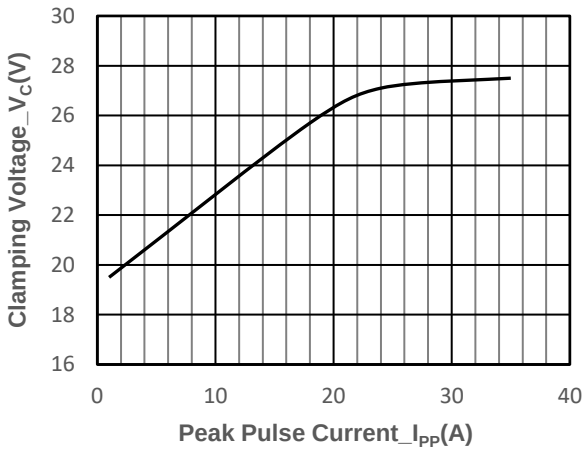
## Typical Performance Characteristics



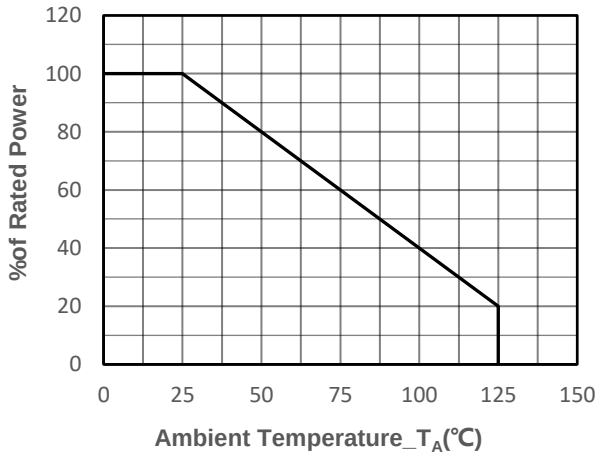

**8/20μs Pulse Waveform**




**Peak Pulse Power vs. Pulse Time**




**Clamping Voltage vs. Peak Pulse Current**




**Power derating vs. Ambient temperature**

## Package Information

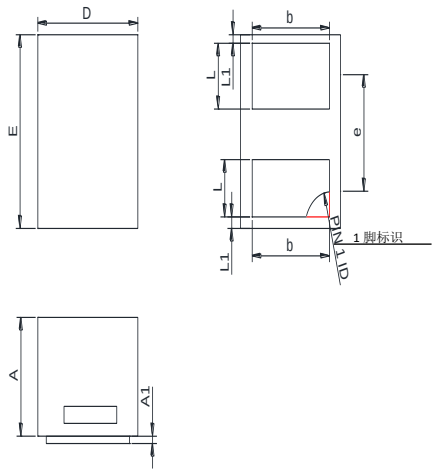
### Ordering Information

| Device | Package | Qty per Reel | Reel Size |
|---|---|---|---|
| SSCT15V21N1 | DFN1006-2L | 10000 | 7 Inch |

### Mechanical Data

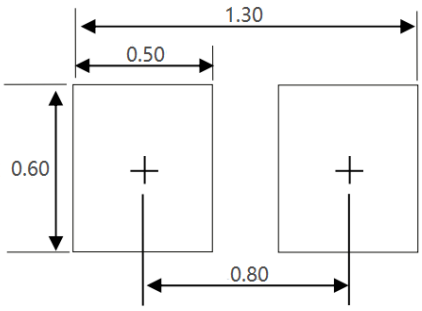
Case: DFN1006-2L

Case Material: Molded Plastic. UL Flammability




| DIM | Millimeters | |
|---|---|---|
| | Min | Max |
| A | 0.45 | 0.55 |
| A1 | 0.00 | 0.05 |
| D | 0.55 | 0.65 |
| E | 0.95 | 1.05 |
| b | 0.45 | 0.60 |
| e | 0.65TYP | |
| L | 0.2 | 0.3 |
| L1 | 0.05REF | |

### Recommended Pad outline




Unit:mm

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