



## SSCT24V11L3

High Power TVS Diode

### ● Description

The SSCT24V11L3 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 SSCT24V11L3 complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into an ultra-small 1.6x1.0x0.5mm lead-free DFN package.

The small size and high ESD surge protection make SSCT24V11L3 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

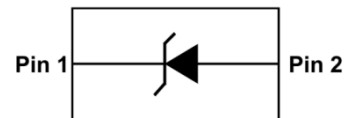
### ● Feature

- ✧ 2800W peak pulse power ( $T_P = 8/20\mu\text{s}$ )
- ✧ DFN1610-2L 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:  $\pm 30\text{kV}$
  - Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Surge) 80A (8/20 $\mu\text{s}$ )

### ● PIN configuration



Top view



Circuit Diagram



Marking

### ● Applications

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

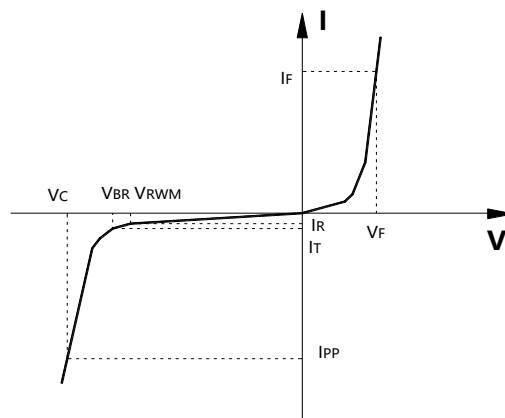
### ● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature:  $260^\circ\text{C}$
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17  $\mu\text{m}$



## ● 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 @ $T_A=25^{\circ}\text{C}$

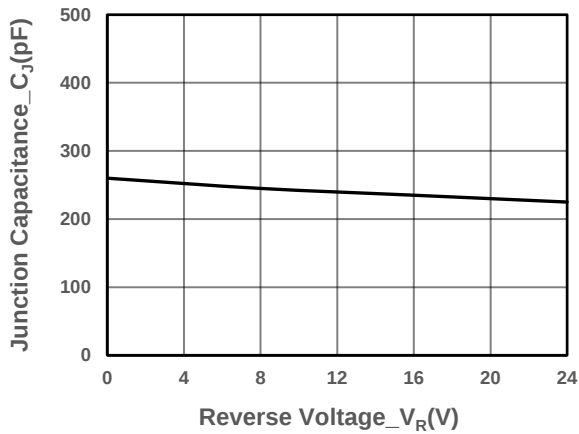
| Parameter                                | Symbol    | Value    | Unit               |
|------------------------------------------|-----------|----------|--------------------|
| Peak Pulse Power (8/20 $\mu\text{s}$ )   | $P_{PP}$  | 2800     | W                  |
| Peak Pulse Current (8/20 $\mu\text{s}$ ) | $I_{PP}$  | 80       | A                  |
| ESD Rating per IEC61000-4-2:             | $V_{ESD}$ | 30       | kV                 |
| Contact                                  |           | 30       |                    |
| Air                                      |           |          |                    |
| Storage Temperature                      | $T_{STG}$ | -55/+150 | $^{\circ}\text{C}$ |
| Operating Temperature                    | $T_J$     | -55/+125 | $^{\circ}\text{C}$ |

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

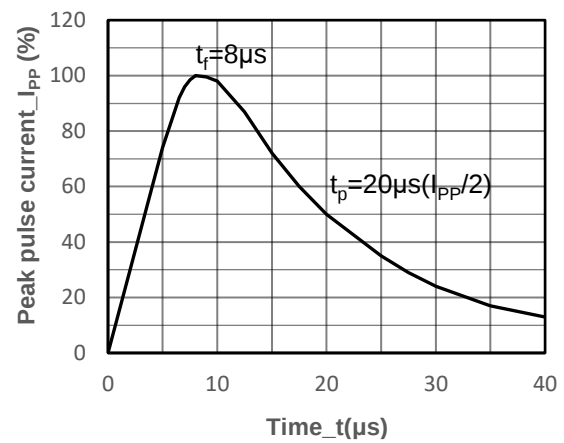
| Parameter                    | Symbol    | Conditions                                      | Min. | Typ. | Max. | Unit          |
|------------------------------|-----------|-------------------------------------------------|------|------|------|---------------|
| Peak Reverse Working Voltage | $V_{RWM}$ |                                                 |      |      | 24   | V             |
| Breakdown Voltage            | $V_{BR}$  | $I_T = 1\text{mA}$                              | 26.5 |      | 32.5 | V             |
| Reverse Leakage Current      | $I_R$     | $V_{RWM} = 24\text{V}$                          |      |      | 0.5  | $\mu\text{A}$ |
| Clamping Voltage             | $V_C$     | $I_{PP} = 1\text{A}$ , $t_P = 8/20\mu\text{s}$  |      | 32   |      | V             |
| Clamping Voltage             | $V_C$     | $I_{PP} = 80\text{A}$ , $t_P = 8/20\mu\text{s}$ |      | 35   |      | V             |
| Junction Capacitance         | $C_J$     | $V_R = 0\text{V}$ , $f = 1\text{MHz}$           |      | 260  |      | pF            |



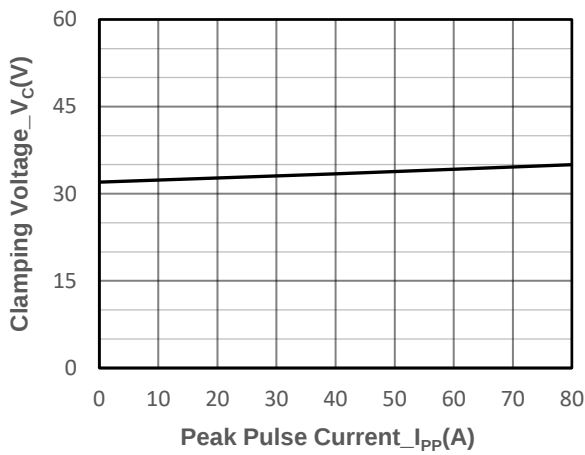
## ● Typical Performance Characteristics



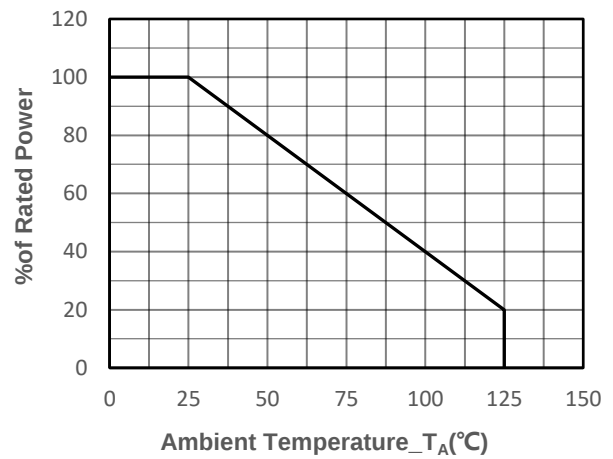
Junction Capacitance vs. Reverse Voltage



8/20 $\mu$ s Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



# SSCT24V11L3

## ● Package Information

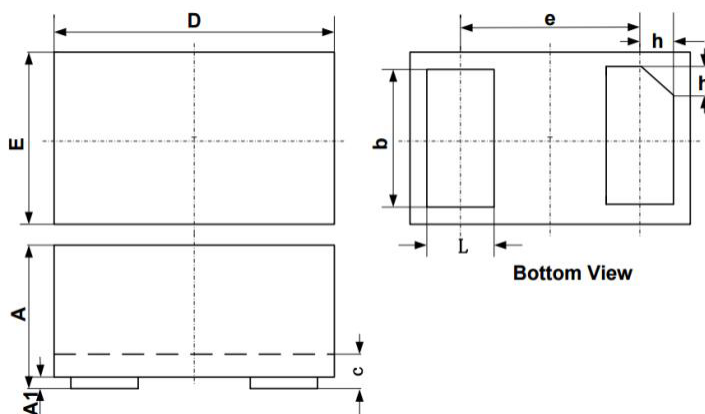
### Ordering Information

| Device      | Package    | Qty per Reel | Reel Size |
|-------------|------------|--------------|-----------|
| SSCT24V11L3 | DFN1610-2L | 3000         | 7 Inch    |

### Mechanical Data

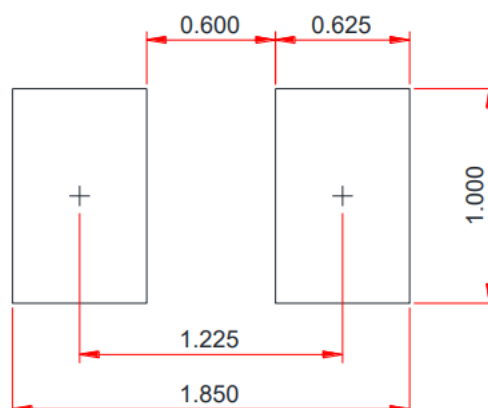
Case: DFN1610-2L

Case Material: Molded Plastic. UL Flammability



| DIM | Millimeters |      |      |
|-----|-------------|------|------|
|     | Min.        | typ. | Max. |
| A   | 0.45        | 0.50 | 0.55 |
| A1  | 0.00        | 0.02 | 0.05 |
| b   | 0.75        | 0.80 | 0.85 |
| c   | 0.10        | 0.15 | 0.20 |
| D   | 1.55        | 1.60 | 1.65 |
| e   | 1.10 BSC    |      |      |
| E   | 0.95        | 1.00 | 1.05 |
| L   | 0.35        | 0.40 | 0.45 |
| h   | 0.15        | 0.20 | 0.25 |

### Recommended Pad outline(Unit:mm)





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