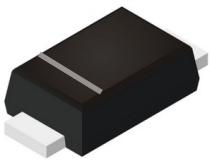
**1-Line, Uni-directional, Transient Voltage Suppressor**

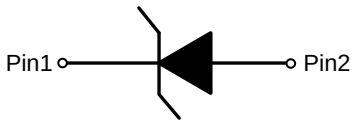


**SOD-123FL**

## Descriptions

The SODA18F501TR is a transient voltage suppressor designed to protect power interfaces. It is suitable to replace multiple discrete components in portable electronics.

The SODA18F501TR is specifically designed to protect power lines. The is available in SOD-123FL package. Standard products are Pb-free and Halogen-free.




**Circuit diagram**

## Features

- Stand-off voltage: 18.0V Max
- Transient protection for each line according to IEC61000-4-2 (ESD): ±30KV Air, ±30KV contact
- IEC61000-4-5 (Surge): 200A (8/20μs)
- Solid-state silicon technology

## Applications

- Power supply protection
- Power management

## Order information

| Model | Marking | Package | shipping |
|---|---|---|---|
| **SODA18F501TR** | **BT** | **SOD-123FL** | **3000/Tape&Reel** |

## Absolute maximum ratings

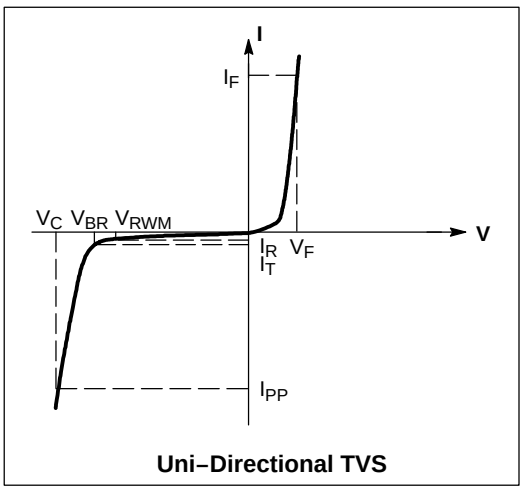
| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Peak pulse power (tp = 8/20μs) Max | $P_{pk}$ | 6600 | W |
| ESD according to IEC61000-4-2 air discharge | $V_{ESD}$ | ±30 | kV |
| ESD according to IEC61000-4-2 contact discharge | | ±30 | |
| Junction temperature | $T_J$ | 125 | °C |
| Operating temperature | $T_{OP}$ | -40~125 | °C |
| Lead temperature | $T_L$ | 260 | °C |
| Storage temperature | $T_{STG}$ | -55~150 | °C |

## Electrical characteristics (TA=25 °C ,unless otherwise noted)

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Reverse stand-off voltage | $V_{RWM}$ pin1~pin2 | | | | 18.0 | V |
| Reverse leakage current | $I_R$ | $V_{RWM}$ =18.0V | | | 1.0 | μA |
| Reveres breakdown voltage | $V_{BR}$ pin1~pin2 | $I_T$=1mA | 19.5 | | | V |
| Clamping voltage | $V_C$ pin1~pin2 | Ipp=1.0A tp=8/20us | | | 21.0 | V |
| | | Ipp=200A tp=8/20us | | 30.0 | 33.0 | V |
| Junction capacitance | $C_J$ | $V_R$ = 0V, f = 1MHz | | 650 | | pF |

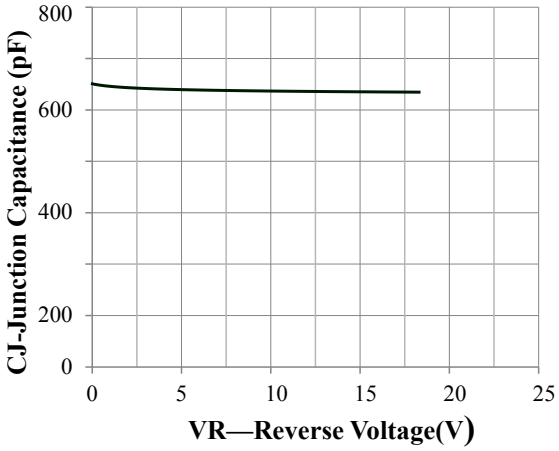
## Electrical performance curve

| 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 @ $I_{PP}$ |
| $I_F$ | Forward Current |
| $V_F$ | Forward Voltage @ $I_F$ |

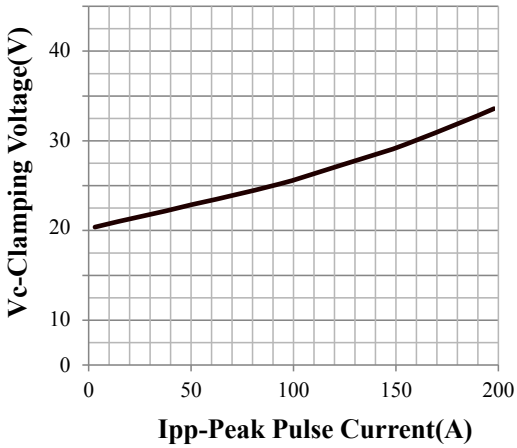



**Uni–Directional TVS**

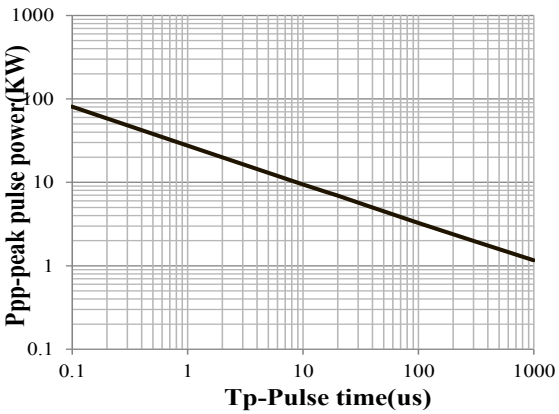
## Typical characteristics ($T_A$=25°C, unless otherwise noted)



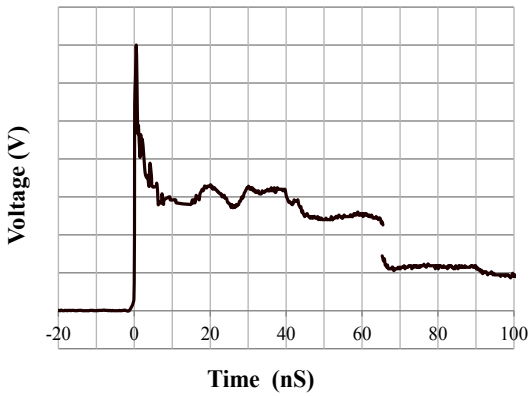

Junction Capacitance vs. Reverse Voltage



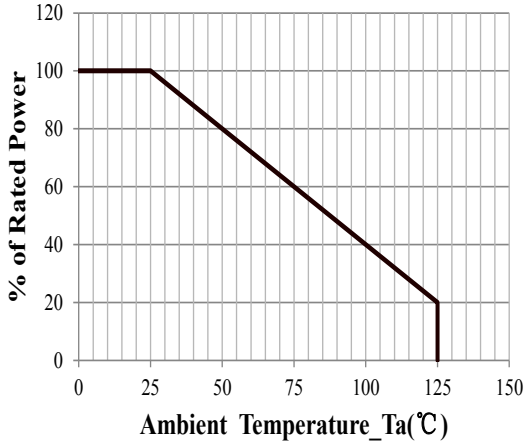

Clamping Voltage vs. Peak Pulse Current



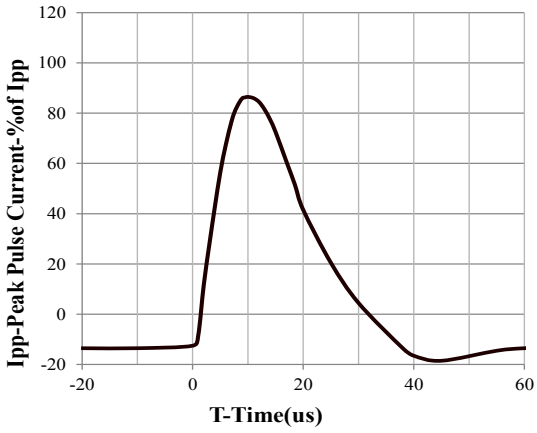

Peak Pulse Power vs. Pulse Time




IEC61000−4−2 Pulse Waveform



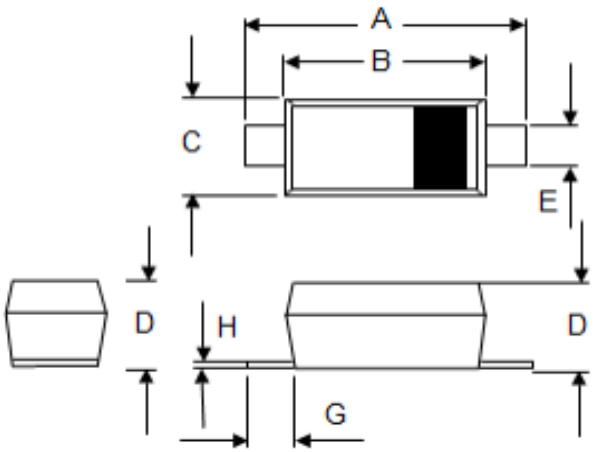

Power Derating Curve




8 X 20us Pulse Waveform

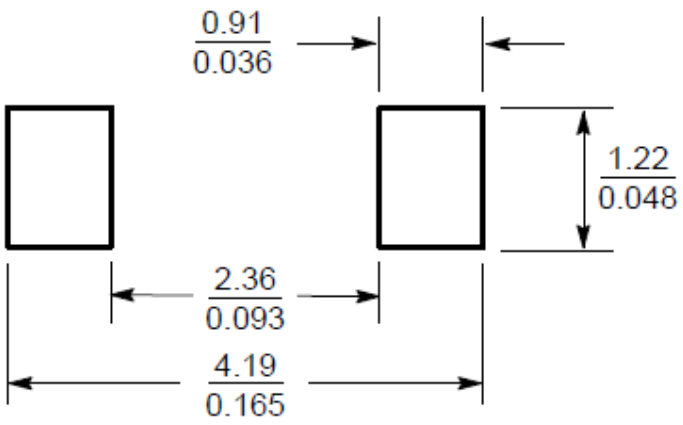
**Package outline dimensions**

SOD-123FL




| SYM | DIMENSIONS | | |
|---|---|---|---|
| | MILLIMETERS | | |
| | MIN | NOM | MAX |
| A | 3.4 | 3.7 | 4.00 |
| B | 2.5 | 2.7 | 2.90 |
| C | 1.4 | 1.7 | 1.95 |
| D | 0.8 | 1.0 | 1.10 |
| E | 0.5 | 0.80 | 1.10 |
| G | 0.25 | — | — |
| H | — | — | 0.20 |

## Suggested Land Pattern




SCALE 10:1 $\left(\frac{mm}{inches}\right)$