



SSCT3V331D1

200W TVS Diode for ESD Protection

● Description

Transient voltage suppression diodes, also known as TVS diodes, are protective electronic parts that protect electrical equipment from voltage spikes introduced by wires.

TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.

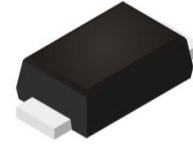
● Feature

- ✧ Glass passivated or planar junction
- ✧ Excellent clamping capability
- ✧ Repetition rate (duty cycle): 0.01%
- ✧ Low profile package and low inductance
- ✧ 200W Peak Pulse power capability at 10×1000μs waveform
- ✧ Fast response time: typically less than 1.0ps from 0V to VBR min
- ✧ High temperature soldering: 260°C/10s at terminals
- ✧ For surface mounted applications in order to optimize board space
- ✧ AEC-Q101 Qualified

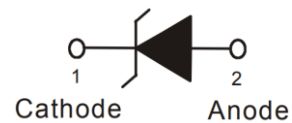
● Applications

- ✧ I/O Interface
- ✧ AC/DC Power supply
- ✧ Low frequency signal transmission line (RS232, RS485, etc.)
- ✧ Automotive Electronics
- ✧ computer system
- ✧ domestic appliance
- ✧ video input

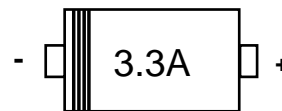
● PIN configuration



SMF/SOD-123FL



Circuit diagram



Marking(Top View)

● Mechanical data

- ✧ Package: SMF/SOD-123FL
- ✧ Case Material: Molded Plastic. UL Flammability
- ✧ Classification Rating 94V-0
- ✧ RoHS compliant
- ✧ Terminal: Solder plated, solderable per MIL-STD-750, Method 2026
- ✧ Polarity: Color band denotes cathode except bi-directional models
- ✧ Weight: 0.017g(approximate)



● Absolute maximum rating @T_A=25°C

| Parameter | Symbol | Value | Units |
|---|--------------------|----------|-------|
| Peak Pulse Power (10/1000μs) | P _{PP} | 200 | W |
| Storage Temperature | T _{STG} | -55/+150 | °C |
| Operating Temperature | T _J | -55/+150 | °C |
| Steady state power dissipation at T _L =75°C | P _{M(AV)} | 2.8 | W |
| Maximum Instantaneous Forward Voltage at 30A for Unidirectional | V _F | 5.0 | V |

● Electrical Characteristics @T_A=25°C

| Part Number | Marking Code | V _{RWM} | V _{BR} @ I _T (V) | | I _T | I _R @ V _{RWM} | V _C (Max) | I _{PP} (Max) ^① |
|-------------|--------------|------------------|--------------------------------------|-----|----------------|-----------------------------------|----------------------|------------------------------------|
| | | (V) | Min | Max | (mA) | (uA) | (V) | (A) |
| SSCT3V331D1 | 3.3A | 3.3 | 4 | 6.5 | 1 | 100 | 9.2 | 23 |

Notes:

① Surge waveform: 10/1000μs

V_{RWM} : Stand-off Voltage -- Maximum voltage that can be applied

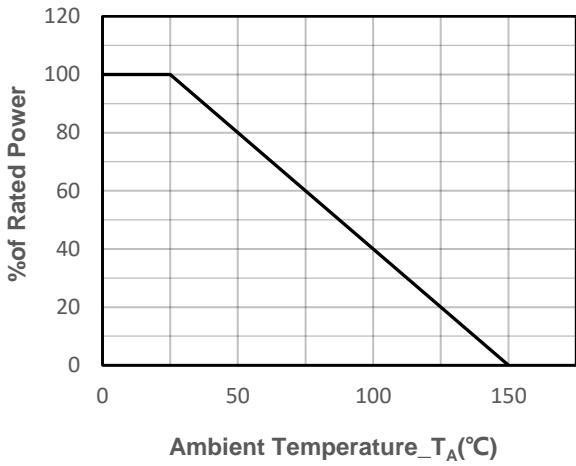
V_{BR}: Breakdown Voltage

V_C: Clamping Voltage -- Peak voltage measured across the suppressor at a specified I_{pp}

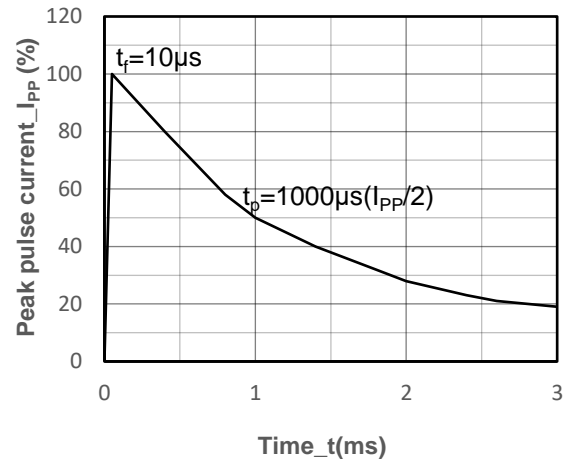
I_R: Reverse Leakage Current



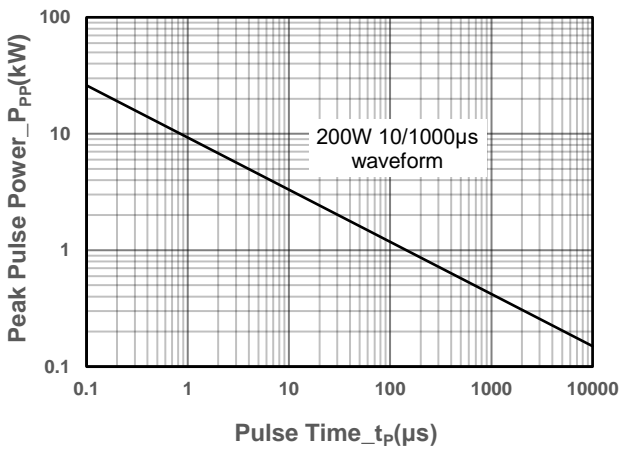
● **Typical Performance Characteristics** ($T_A=25^\circ\text{C}$, unless otherwise noted)



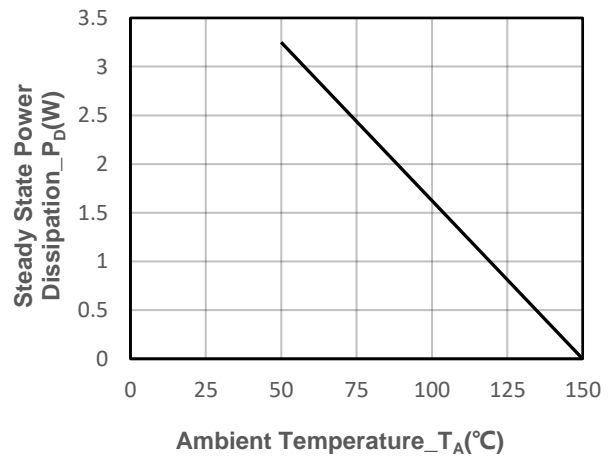
Power derating vs. Ambient temperature



10/1000µs Pulse Waveform



Peak Pulse Power vs. Pulse Time



Power dissipation vs. Ambient temperature



● Package Information

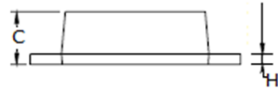
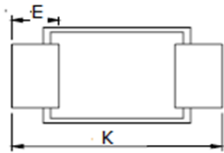
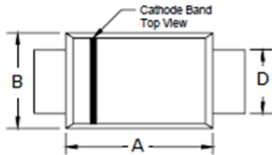
Ordering Information

| Device | Package | Qty per Reel | Reel Size |
|-------------|---------------|--------------|-----------|
| SSCT3V331D1 | SMF/SOD-123FL | 3000 | 7 Inch |

Mechanical Data

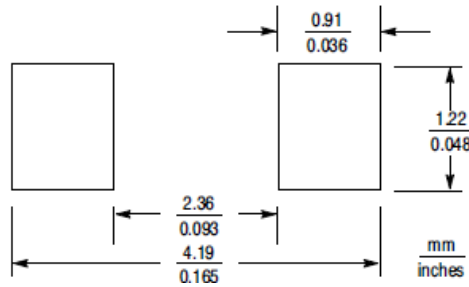
Case: SMF/SOD-123FL

Case Material: Molded Plastic. UL Flammability



| Dim | Millimeters | |
|-----|-------------|------|
| | Min | Max |
| A | 2.5 | 3.0 |
| B | 1.5 | 1.9 |
| C | 0.9 | 1.1 |
| D | 0.70 | 1.1 |
| E | 0.45 | 0.95 |
| H | 0.05 | 0.26 |
| K | 3.40 | 4.0 |

Recommended Pad outline





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