SSCT7V031D2

1-line Uni-directional Micro Packaged TVS Diode

Description

The SSCT7V031D2 is an uni-directional high power 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. It complies with the IEC 61000-4-2 (ESD) with ±30kV air and ±30kV contact discharge. It is assembled into an ultra-small lead-free SOD-323 package.

The small size and high ESD surge protection make SSCT7V031D2 an ideal choice to protect cell phone, digital cameras, audio players and many other portable applications.

Feature

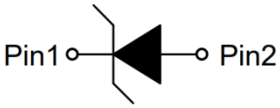
- 1900W peak pulse power (t_P = 8/20μs)
- SOD-323 Package
- Working voltage: 7V
- Low clamping voltage
- Low capacitance
- Low leakage current
- Response Time is<1 ns
- RoHS compliant
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±30kV
    Contact discharge: ±30kV
  - IEC61000-4-5 (Surge) 100A (8/20μs)

Mechanical data

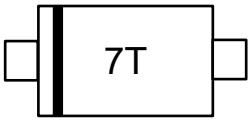
- Lead finish:100% matte Sn (Tin)
- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 3 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness: ≤3mil

PIN configuration

SOD-323



Circuit Diagram



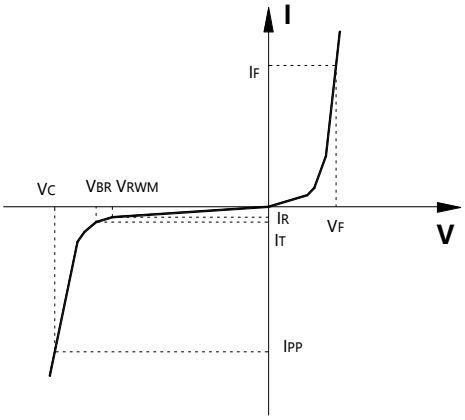
Marking (Top View)

Applications

- Power Line
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV
- Cellular handsets and accessories
- Portable instrumentation
- Peripherals

- **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



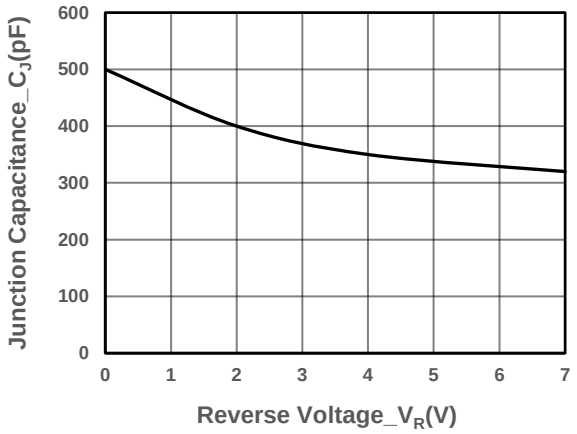
- **Absolute maximum rating (T_A=25℃ unless otherwise noted)**

Parameter	Symbol	Value	Unit
Peak Pulse Power（8/20us）	P_{PP}	1900	W
Peak Pulse Current（8/20us）	I_{PP}	100	A
ESD Rating per IEC61000-4-2： Contact Air	V_{ESD}	30 30	kV
Storage Temperature	T_{STG}	-55/+150	℃
Operating Temperature	T_J	-55/+125	℃

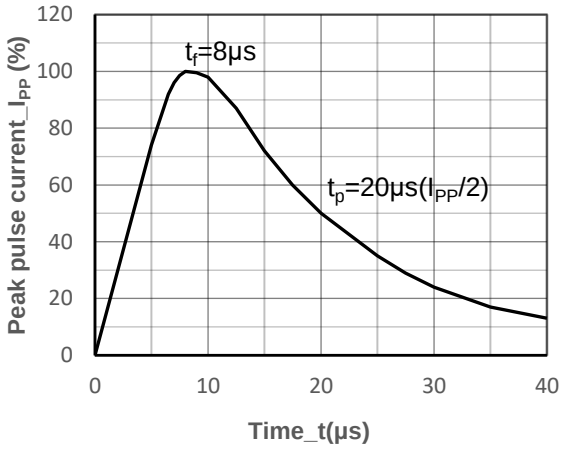
- **Electrical Characteristics (T_A=25℃ unless otherwise noted)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				7	V
Breakdown Voltage	V_{BR}	I_T = 1mA	8		10	V
Reverse Leakage Current	I_R	V_{RWM} = 7V			0.1	μA
Clamping Voltage	V_C	I_{PP} = 20A, t_P = 8/20μs		11		V
Clamping Voltage	V_C	I_{PP} = 100A, t_P = 8/20μs		17.5	19	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		500		pF

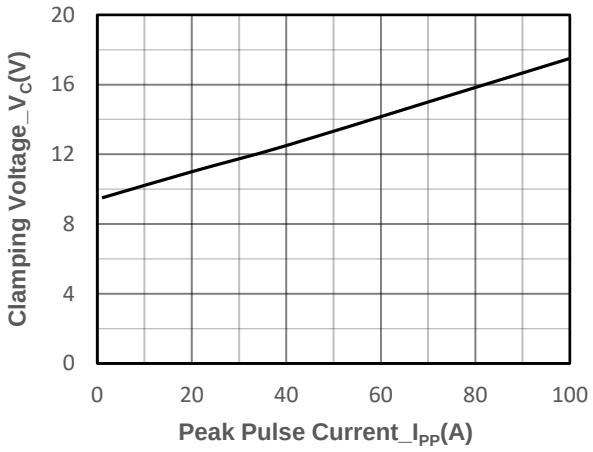
- **Typical Performance Characteristics (T_A=25℃ unless otherwise noted)**



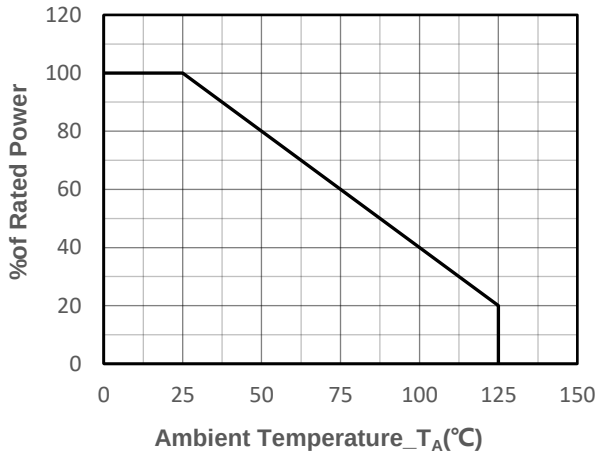
Junction Capacitance vs. Reverse Voltage



8/20μs Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature

Package Information

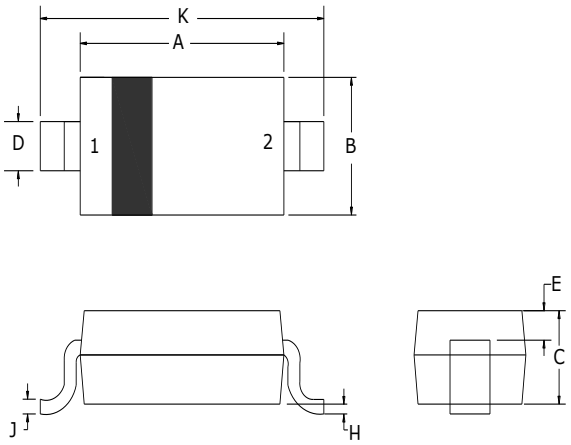
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT7V031D2	SOD-323	3000	7 Inch

Mechanical Data

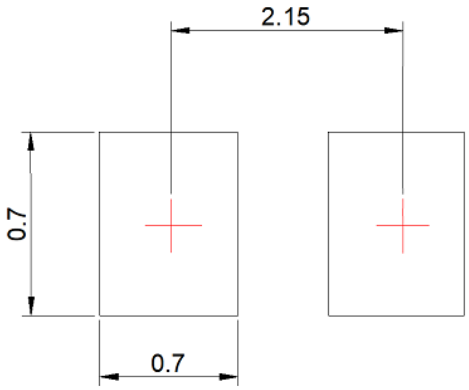
Case: SOD-323

Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	Min	Max
A	1.60	1.80
B	1.2	1.40
C	0.80	0.90
D	0.25	0.35
E	0.15REF	
H	0	0.10
J	0.08	0.15
K	2.50	2.70

Recommended Pad outline (Unit: mm)



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