SSCT18V22D2

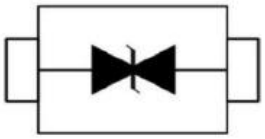
1-line Bi-directional TVS Diode

Description

The SSCT18V22D2 is a bi-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 high-speed data lines.

The SSCT18V22D2 complies with the IEC 61000-4-2 (ESD) standard with ±30kV air and ±30kV contact discharge. It is assembled into a leadfree SOD-323 package. The small size, low capacitance and high ESD surge protection make SSCT18V22D2 an ideal choice to protect cell phone, wireless systems, and communication equipment.

PIN configuration



Top view

Marking(Top View)

Feature

- 350W peak pulse power (t_P = 8/20us)
- SOD-323 Package
- Working voltage: 18V
- Low clamping voltage
- Low capacitance
- Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
  Air discharge: ±30kV
  Contact discharge: ±30kV
  – IEC61000-4-4 (EFT) 9A (8/20ns)

Applications

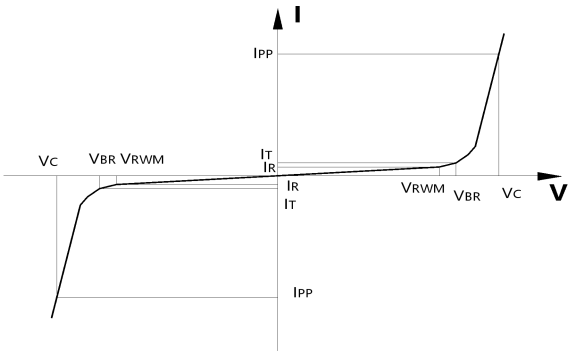
- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports.
- Peripherals

Mechanical data

- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Qualified max reflow temperature:260℃
- Device meets MSL 3 requirements
- Moisture Sensitivity: Level 3 per J-STD-020

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
Cap	Junction Capacitance



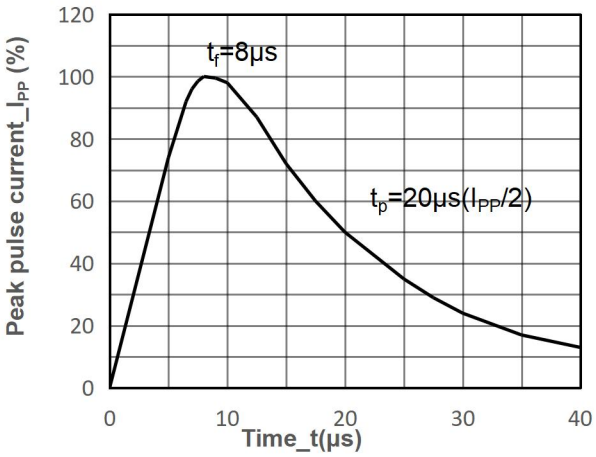
Absolute maximum rating @T_A=25℃

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P_{PP}	350	W
Peak Pulse Current (tp=8/20μs waveform)	I_{PP}	9	A
ESD Rating per IEC61000-4-2： Contact Air	V_{ESD}	30 30	kV
Operating Temperature Range	T_J	-55 ~ 125	℃
Storage Temperature Range	T_{STG}	-55 ~ 150	℃

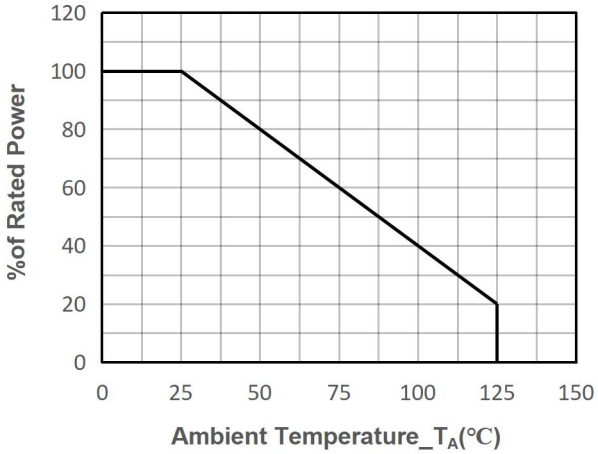
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				18	V
Breakdown Voltage	V_{BR}	IT = 1mA	20			V
Reverse Leakage Current	I_R	V_{RWM} = 18V			1	uA
Clamping Voltage	V_C	I_{PP} = 1A (8 x 20us pulse)			29	V
Clamping Voltage	V_C	I_{PP} = 9A (8 x 20us pulse)			45	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz			57	pF

- **Typical Performance Characteristics**



8/20μs Pulse Waveform



Power derating vs. Ambient temperature

- **Package Information**

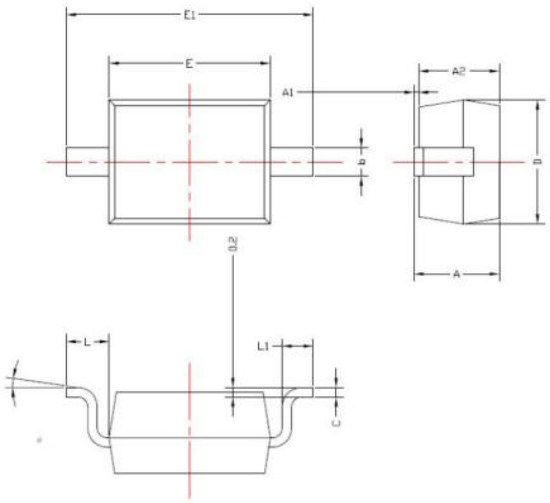
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT18V22D2	SOD-323	3000	7 Inch

Mechanical Data

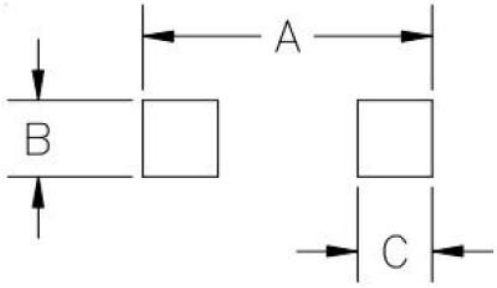
Case: SOD-323

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.75	1.05
A1	0.00	0.10
A2	0.75	0.95
b	0.20	0.40
c	0.08	0.15
D	1.20	1.40
E	1.60	1.80
E1	2.45	2.75
L	0.475REF	
L1	0.20	0.40
θ	0°	8°

Recommended Pad outline(Unit:mm)



Dim	Dimensions	
	Millimeter	Inches
A	3.15	0.120
B	0.80	0.031
C	0.80	0.031

DISCLAIMER

SSCSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. SSCSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICIENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G. OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.

OUR PRODUCT SPECIFICATIONS ARE ONLY VALID IF OBTAINED THROUGH THE COMPANY'S OFFICIAL WEBSITE, CRM SYSTEM, OR OUR SALES PERSONNEL CHANNELS. IF CHANGES OR SPECIAL VERSIONS ARE INVOLVED, THEY MUST BE STAMPED WITH A QUALITY SEAL AND MARKED WITH A SPECIAL VERSION NUMBER TO BE VALID.