



SSCT24V22D2

SSCT24V22D2 Series

24V Ultra Low Capacitance bi-directional TVS Diode

Description

The SSCT24V22D2 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 SSCT24V22D2 complies with the IEC 61000-4-2 (ESD) standard with $\pm 30\text{kV}$ air and $\pm 30\text{kV}$ contact discharge. It is assembled into a leadfree SOD-323 package. The small size, low capacitance and high ESD surge protection make SSCT24V22D2 an ideal choice to protect cell phone, wireless systems, and communication equipment.

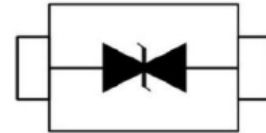
Feature

- ✧ 350W peak pulse power ($t_P = 8/20\mu\text{s}$)
- ✧ SOD-323 Package
- ✧ Working voltage: 24V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
 - IEC61000-4-4 (EFT) 40A (5/50ns)

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	Junction Capacitance

PIN configuration



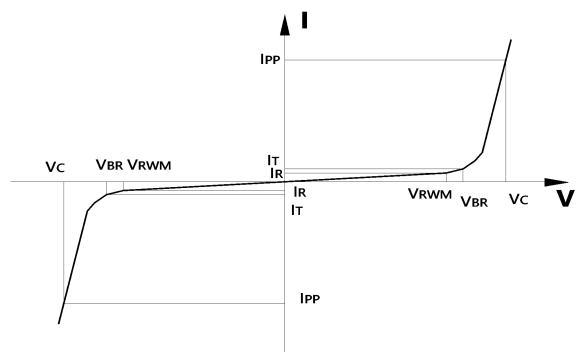
Top view

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°C
- ✧ Device meets MSL 1 requirements
- ✧ Moisture Sensitivity: Level 3 per J-STD-020





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- Absolute maximum rating @TA=25°C

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Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P _{PPP}	350	W
Peak Pulse Current (tp=8/20μs waveform)	I _{PP}	7	A
ESD Rating per IEC61000-4-2:	Contact	30	KV
	Air	30	
Operating Temperature Range	T _J	-55 ~ 125	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C

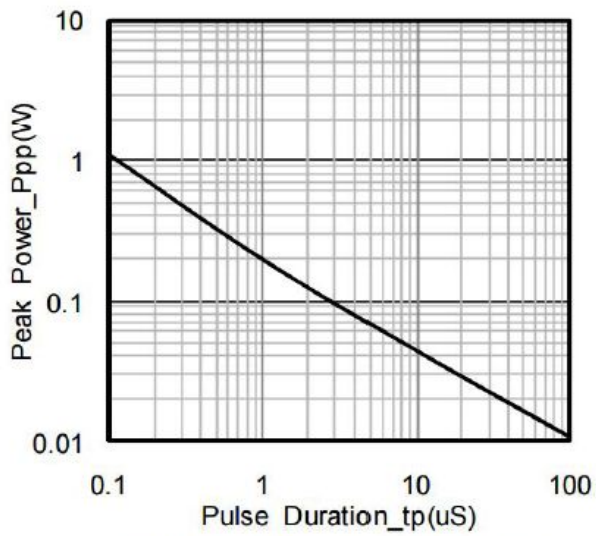
- Electrical Characteristics @TA=25°C

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Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V _{RWM}			24	V	
Breakdown Voltage	V _{BR}	26.7			V	IT = 1mA
Reverse Leakage Current	I _R			1	uA	V _{RWM} = 24V
Clamping Voltage	I _{PP}		43		V	I _{PP} = 1A (8 x 20uS pulse)
Clamping Voltage	I _{PP}			52	V	I _{PP} = 7A (8 x 20uS pulse)
Junction Capacitance	C _J		57		pF	VR = 0V, f = 1MHz

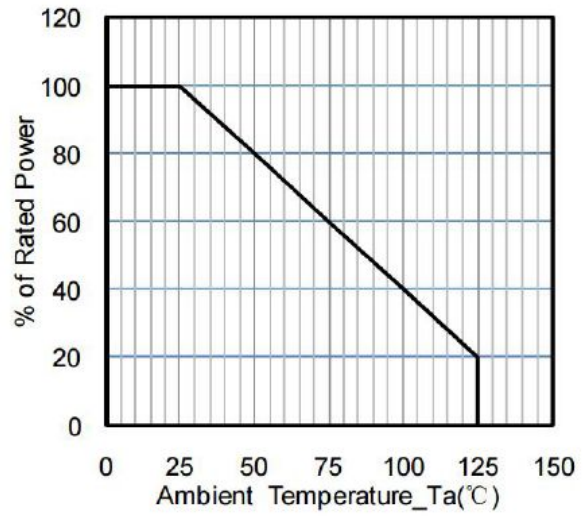


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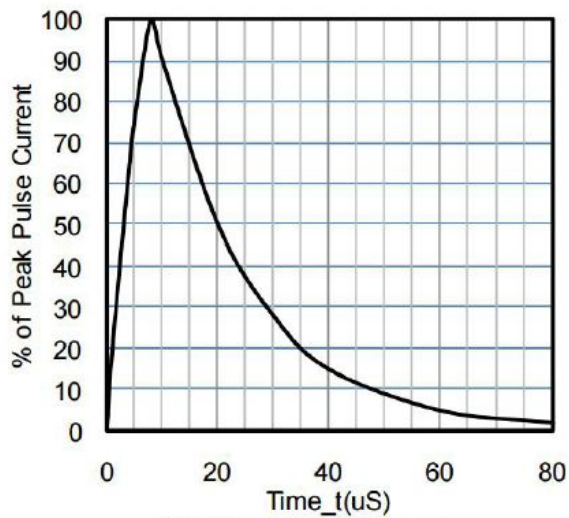
- Typical Performance Characteristics



Peak Pulse Power vs. Pulse Time



Power Derating Curve

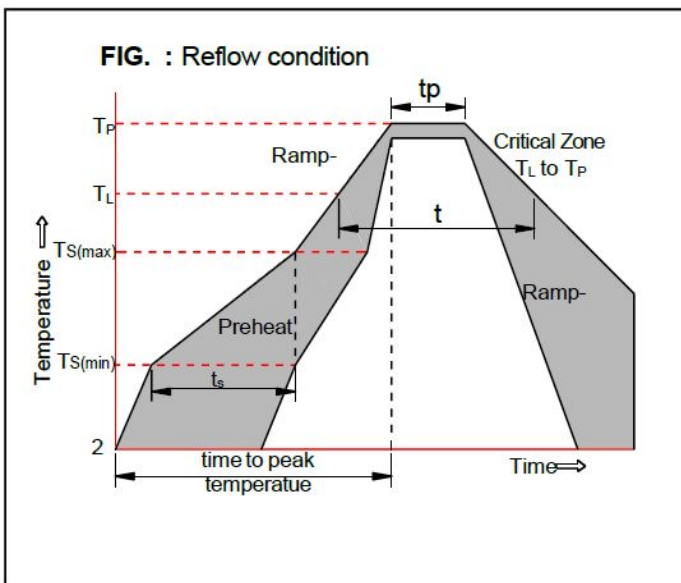


8 X 20uS Pulse Waveform



- Soldering Parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min (Ts(min))	+150°C
	-Temperature Max(Ts(max))	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (TL) to peak)		3°C/sec. Max
Ts(max) to TL - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(TL)(Liquid us)	+217°C
	-Temperature(tL)	60-150 secs.
Peak Temp (Tp)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (tp)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (TP)		8 min. Max
Do not exceed		+260°C





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- **Package Information**

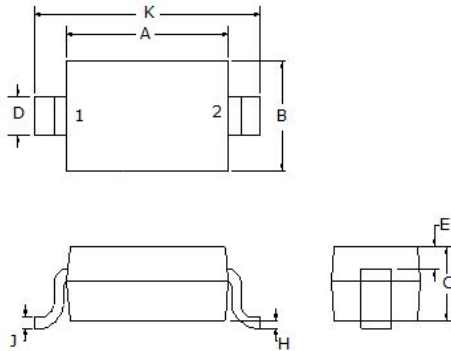
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT24V22D2	SOD-323	3000	7 Inch

Mechanical Data

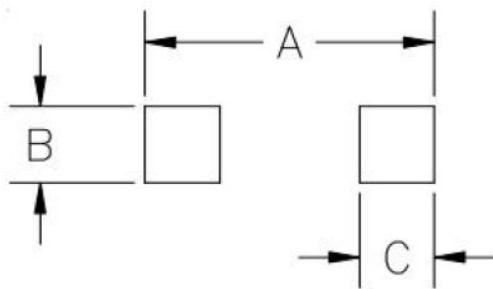
Case: SOD-323

Case Material: Molded Plastic. UL Flammability



Dim	Dimensions			
	Millimeters		Inches	
	Min	Max	Min	Max
A	1.50	1.80	0.060	0.071
B	1.2	1.40	0.045	0.054
C	-	1.10	-	0.043
D	0.30	0.40	0.012	0.016
H	-	0.10	-	0.004
J	0.10	0.25	0.004	0.010
K	2.30	2.70	0.090	0.107

Recommended Pad outline



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



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