



SSCT24V21D3

1-line Uni-directional Micro Packaged TVS Diodes for ESD Protection

● Description

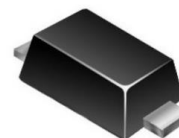
The SSCT24V21D3 is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium.

It has been specifically designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by ESD (electrostatic discharge), and EFT (electrical fast transients).

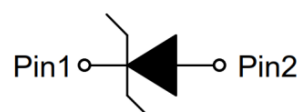
● Feature

- ✧ 1500W peak pulse power ($t_P = 8/20\mu s$)
- ✧ SOD-523 Package
- ✧ Working voltage: 24V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ Low leakage current
- ✧ Response Time is $<1\text{ ns}$
- ✧ RoHS compliant
- ✧ Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
 - Air discharge: $\pm 30\text{ kV}$
 - Contact discharge: $\pm 30\text{ kV}$
 - IEC 61000-4-5 (Surge) 4A(8/20 μs)

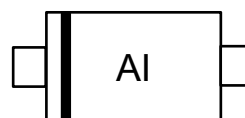
● PIN configuration



SOD-523



Circuit Diagram



Marking (Top View)

● Applications

- ✧ USB 2.0 Power & Data Line Protection
- ✧ DVI & HDMI Port Protection
- ✧ Serial ATA Port Protection
- ✧ Mobile Handsets
- ✧ Digital Cameras and camcorders
- ✧ PDA & MP3 Players
- ✧ Digital TV and Set-top Boxes

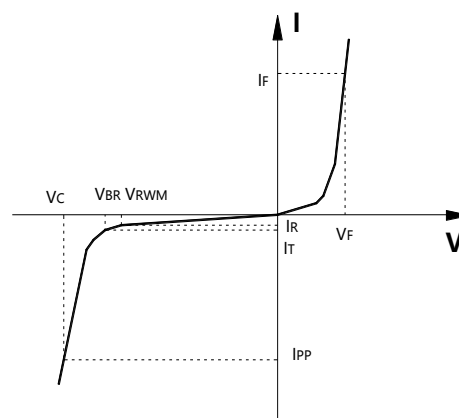
● Mechanical data

- ✧ Lead finish: 100% matte Sn (Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: $7 \sim 17\text{ }\mu\text{m}$
- ✧ Pin flatness: $\leq 3\text{ mil}$



● 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 @ $T_A=25^{\circ}\text{C}$

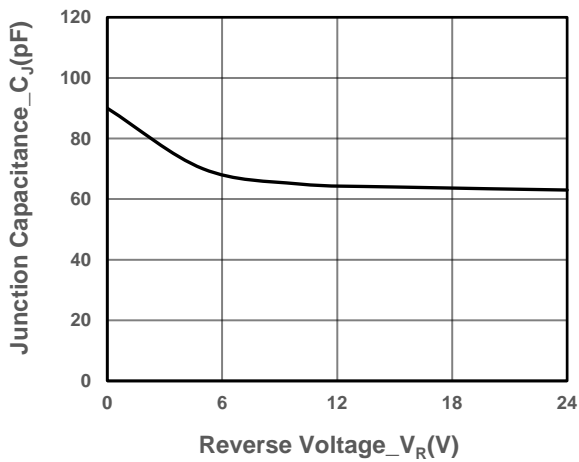
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PP}	1500	W
Peak Pulse Current (8/20 μs)	I_{PP}	30	A
ESD Rating per IEC61000-4-2:			
Contact	V_{ESD}	30	KV
Air		30	
Storage Temperature	T_{STG}	-55/+150	$^{\circ}\text{C}$
Operating Temperature	T_J	-55/+125	$^{\circ}\text{C}$

● Electrical Characteristics @ $T_A=25^{\circ}\text{C}$

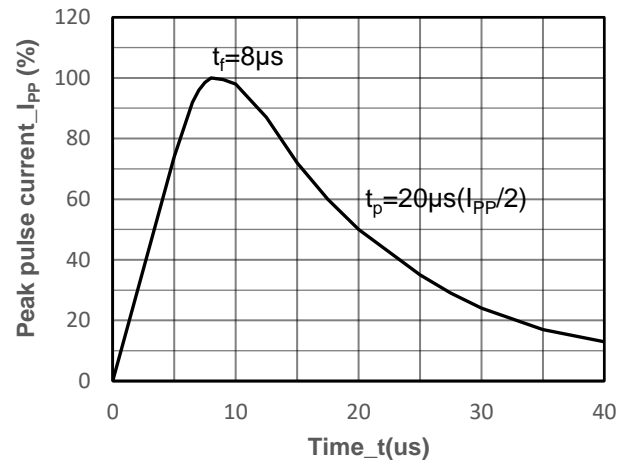
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Reverse Working Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	26		30	V
Reverse Leakage Current	I_R	$V_{RWM} = 24\text{V}$			0.2	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$, $t_P = 8/20\mu\text{s}$		26		V
Clamping Voltage	V_C	$I_{PP} = 30\text{A}$, $t_P = 8/20\mu\text{s}$			50	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$			100	pF



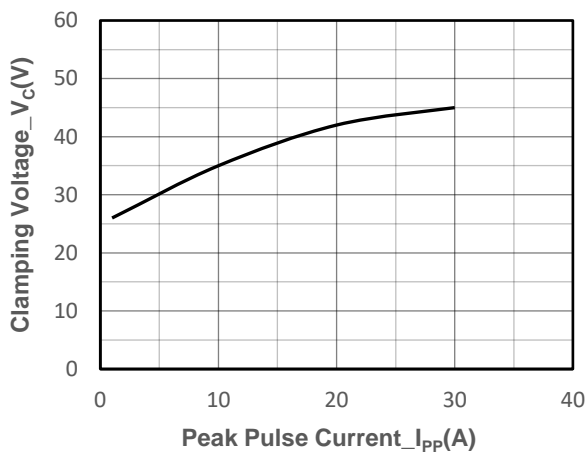
● Typical Performance Characteristics



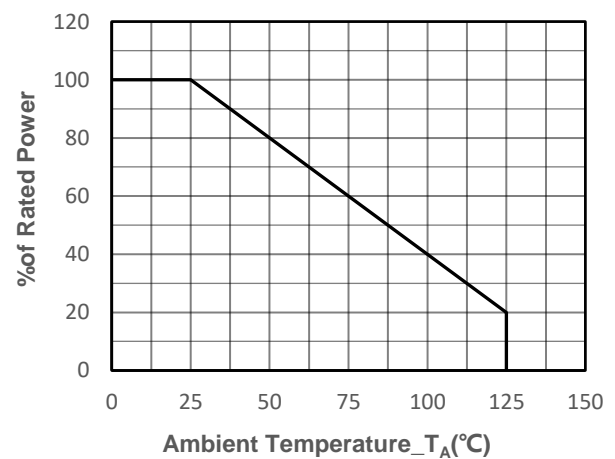
Junction Capacitance vs. Reverse Voltage



8/20 μs Pulse Waveform



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



● Package Information

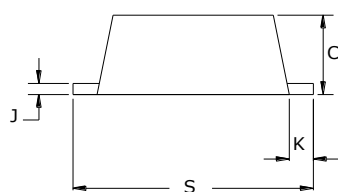
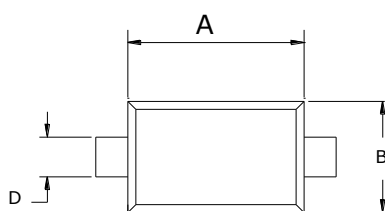
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCT24V21D3	SOD-523	3000	7 Inch

Mechanical Data

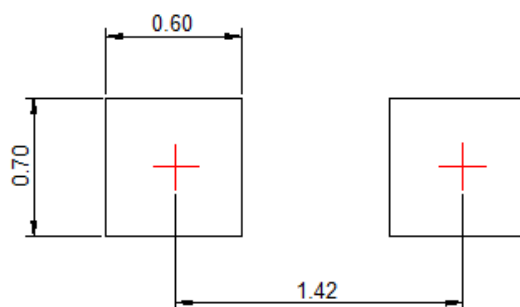
Case: SOD-523

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	1.10	1.30
B	0.75	0.85
C	0.51	0.70
D	0.25	0.35
J	0.08	0.15
K	0.15	0.25
S	1.50	1.70

Recommended Pad outline





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