

SSCE5V021D3

Ultra-low Capacitance Unidirectional Micro Packaged TVS Diodes for ESD Protection

● Description

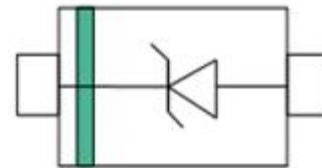
The SSCE5V021D3 is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital 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

- ✧ 50W peak pulse power ($t_P = 8/20\mu s$)
- ✧ SOD-523 Package
- ✧ Working voltage: 5V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 15kV$ (air), $\pm 8kV$ (contact)

● PIN configuration



Topview

● Applications

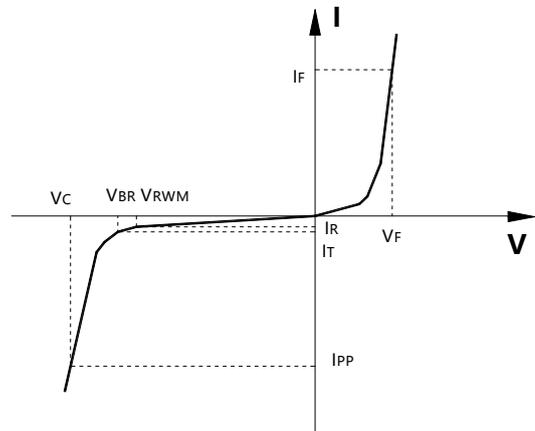
- ✧ USB 1.0/2.0/3.0/3.1, VGA, DVI, SDI
- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Mobile Handsets
- ✧ Notebooks, Desktops, Servers
- ✧ High Speed Line
- ✧ Portable instrumentation

● Mechanical data

- ✧ Lead finish: 100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature: 260°C
- ✧ Device meets MSL 1 requirements
- ✧ Pure tin plating: 7 ~ 17 μm
- ✧ Pin flatness: $\leq 3mil$

● **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



● **Absolute maximum rating @TA=25°C**

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (8/20 μ S)	50	W
T_{STG}	Storage Temperature	-55/+150	°C
T_J	Operating Temperature	-55/+150	°C

● **Electrical Characteristics @TA=25°C**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}			5		V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$		6		V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}, T = 25^\circ\text{C}$		2		μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}, t_P = 8/20\mu\text{s}$		12		V
Junction Capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$		0.5	1	pF

- **Typical Performance Characteristics**

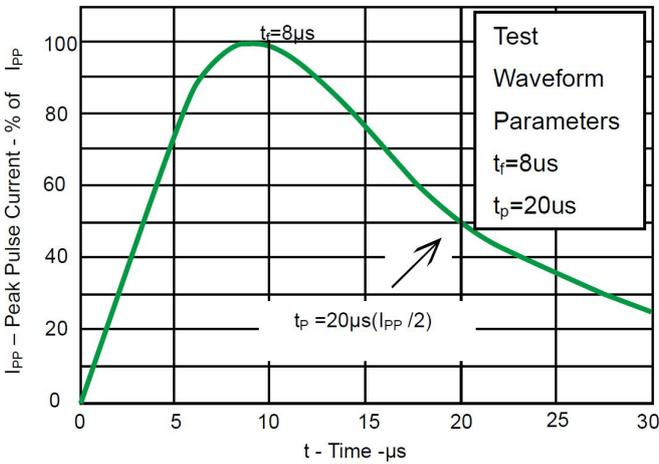


Fig 1. Pulse Waveform

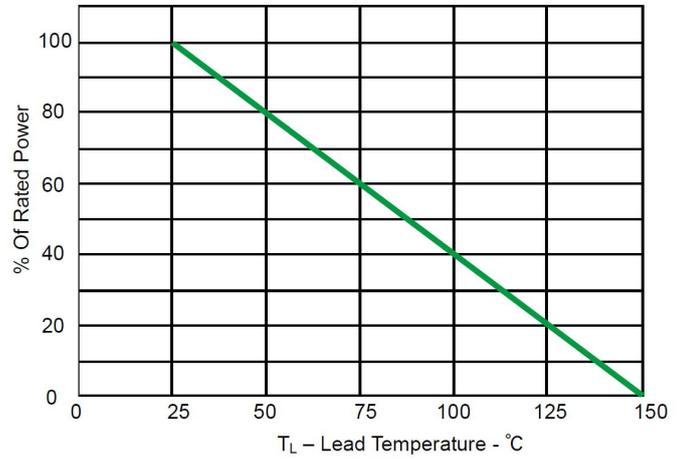
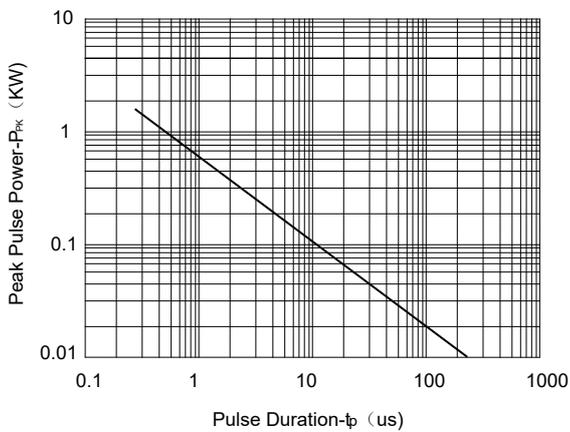


Fig 2. Power Derating Curve



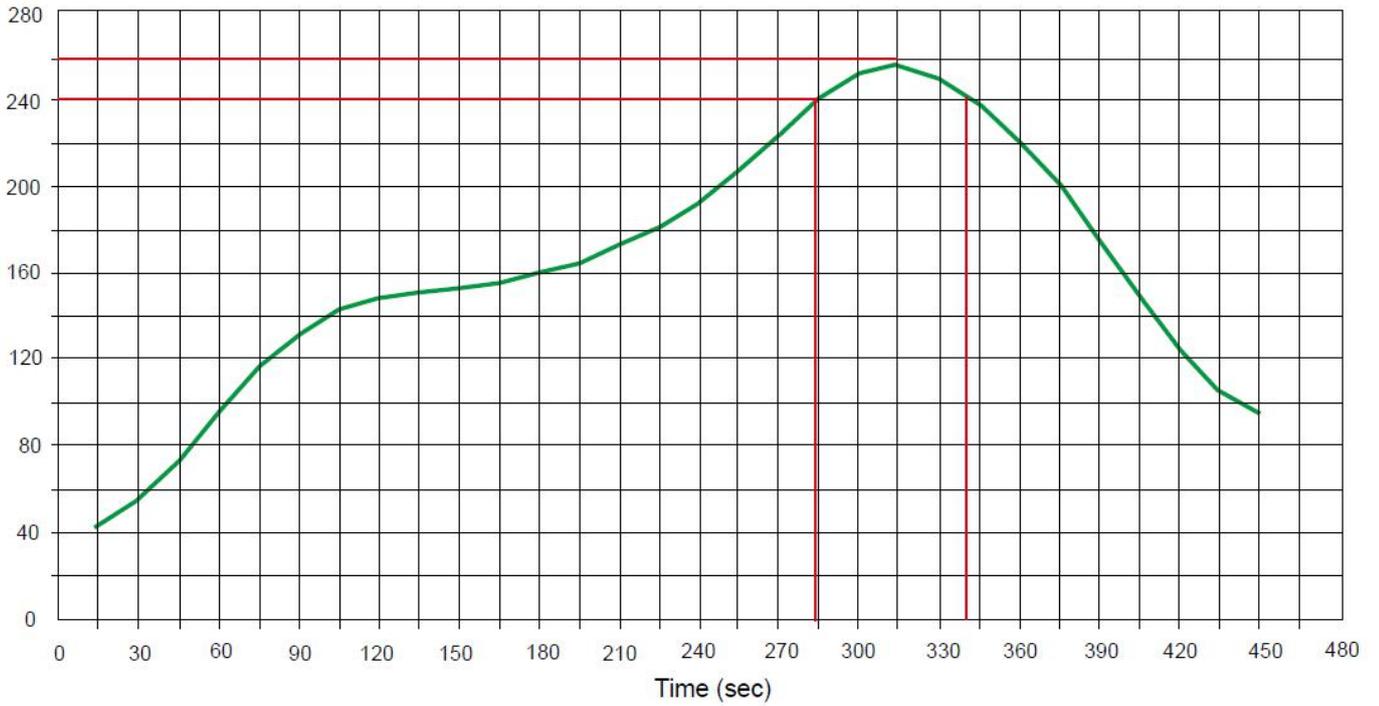
Non-Repetitive Peak Pulse Power vs. Pulse Time



SSCE5V021D3

- Solder Reflow Recommendation**

Peak Temp=257°C, Ramp Rate=0.802deg. °C/sec



● **Package Information**

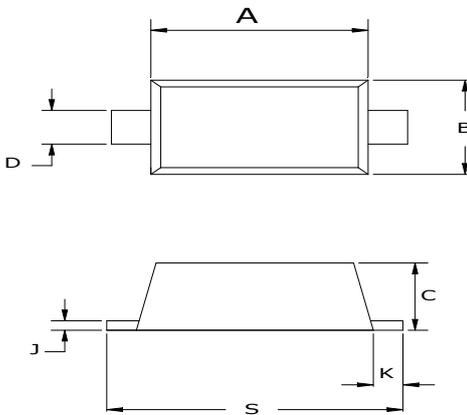
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V021D3	SOD-523	3000	7 Inch

Mechanical Data

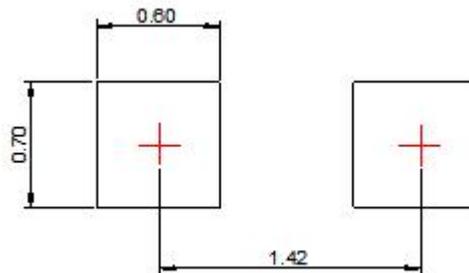
Case: SOD-523

Case Material: Molded Plastic. UL Flammability



DIM	Millimeters	
	Min	Max
A	0.230	0.330
A1	0.000	0.050
A3	0.102REF	
D	0.550	0.650
E	0.250	0.350
b	0.215	0.275
L	0.115	0.175
L1	0.115	0.175
e	0.40BSC	

Recommended Pad outline





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