



SSCE5V022L1

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1-Line Bidirectional TVS Diode

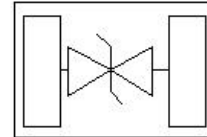
● Description

The SSCE5V022L1 is designed with SSC process TVS technology 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.

● Feature

- ◇ 80W peak pulse power ($t_P = 8/20\mu s$)
- ◇ DFN0603-2L Package
- ◇ Working voltage: 5V
- ◇ Low clamping voltage
- ◇ Low capacitance
- ◇ RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD) $\pm 30kV$ (air), $\pm 25kV$ (contact)

● PIN configuration



Top view



Marking

● Applications

- ◇ DVI & HDMI Port Protection
- ◇ Serial and Parallel Ports
- ◇ Projection TV
- ◇ Notebooks, Desktops, Servers
- ◇ High Speed Line : USB
1.0/2.0/3.0/3.1,VGA,DVI,SDI
- ◇ Portable instrumentation

● Mechanical data

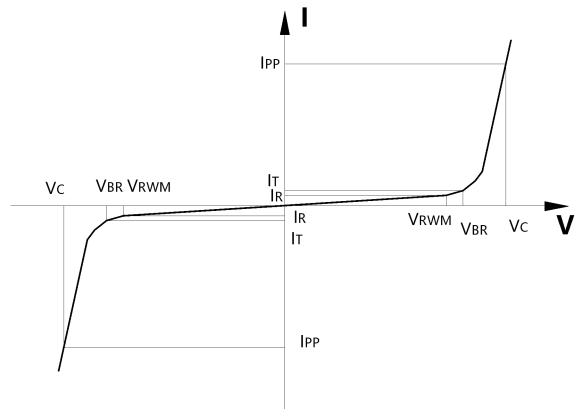
- ◇ Lead finish:100% matte Sn(Tin)
- ◇ Mounting position: Any
- ◇ Qualified max reflow temperature:260°C
- ◇ Device meets MSL 1 requirements
- ◇ Pure tin plating: 7 ~ 17 μm
- ◇ Pin flatness: $\leq 3mil$



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● 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 (8/20μS)	80	W
I_{PP}	Peak Pulse Current (8/20μS)	8	A
V_{ESD}	ESD Rating per IEC61000-4-2:		
	Contact	25	KV
	Air	30	
T_{STG}	Storage Temperature	-55/+150	°C
T_J	Operating Temperature	-55/+150	°C

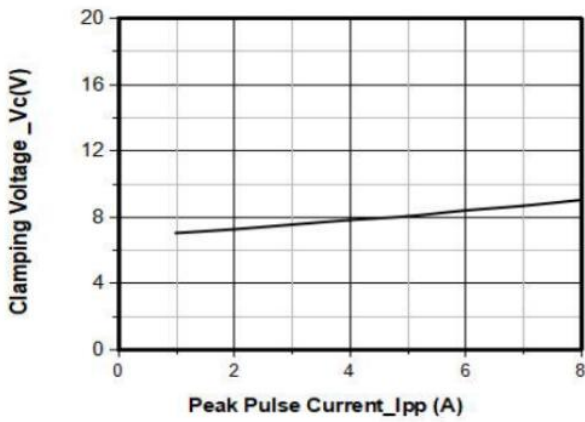
● Electrical Characteristics @TA=25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	$I_T = 1mA$	6			V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0V$			0.1	μA
Clamping Voltage	V_C	$I_{PP} = 1A, t_P = 8/20\mu s$			8	V
Clamping Voltage	V_C	$I_{PP} = 8A, t_P = 8/20\mu s$			10	V
Junction Capacitance	C_J	$V_R = 0V, f = 1MHz$		14	20	pF

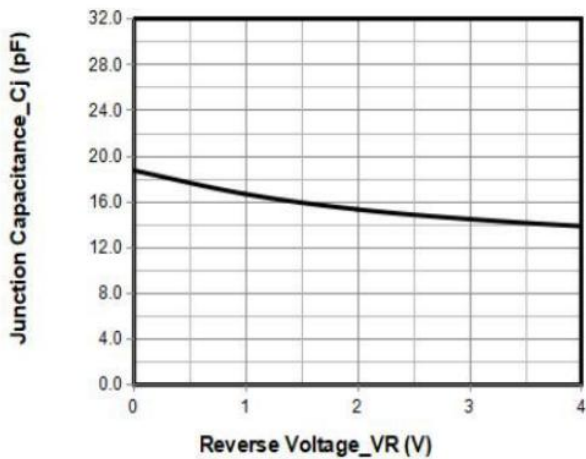


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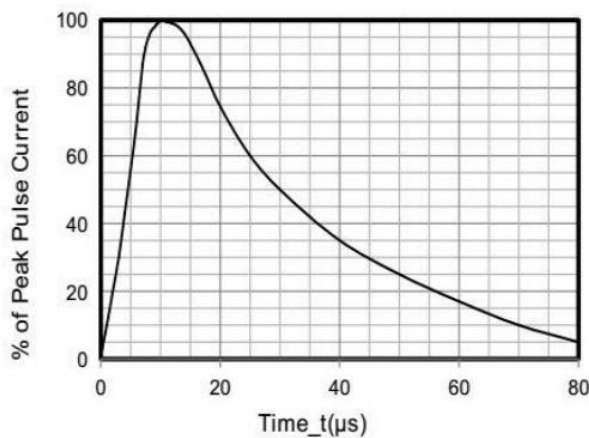
● Typical Performance Characteristics



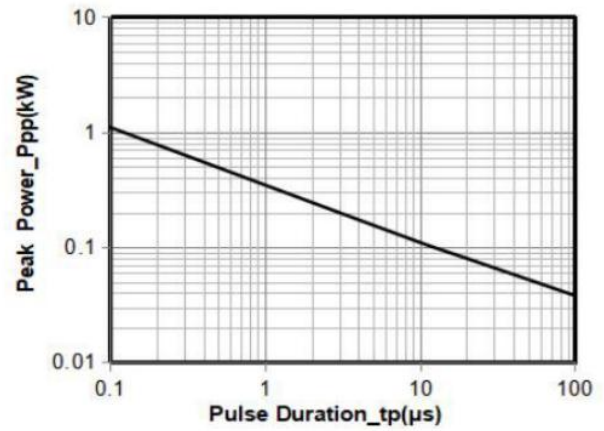
Junction Capacitance vs. Reverse Voltage



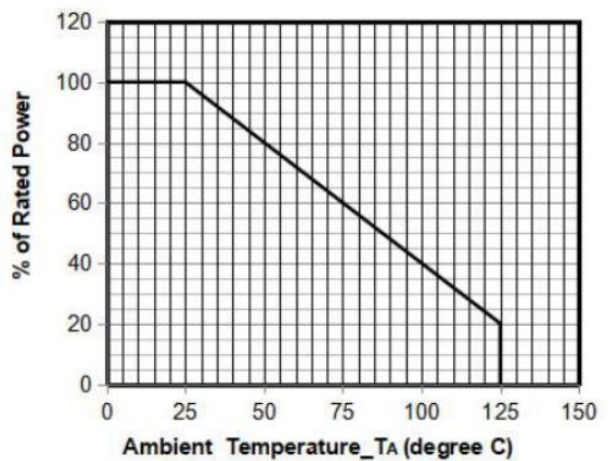
Clamping Voltage vs. Peak Pulse Current



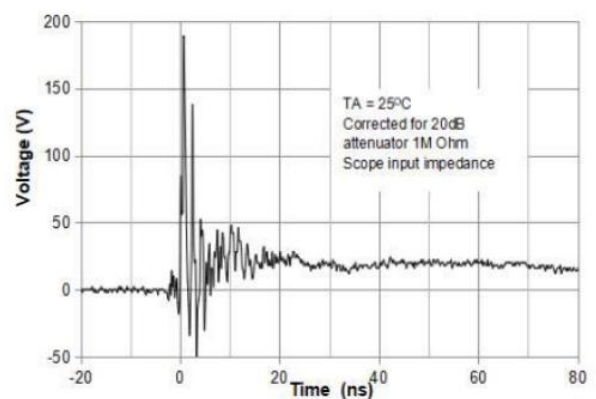
8 X 20 μ s Pulse Waveform



Peak Pulse Power vs. Pulse Time



Power Derating Curve



ESD Clamping Voltage

8 kV Contact per IEC61000-4-2



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- **Package Information**

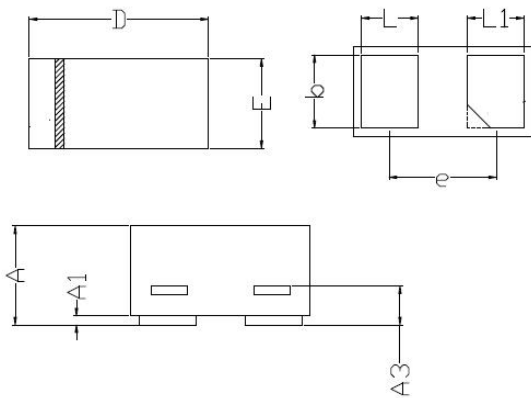
Ordering Information

Device	Package	Marking	Qty per Reel	Reel Size
SSCE5V022L1	DFN0603-2L	G	15,000pcs	7 Inch

Mechanical Data

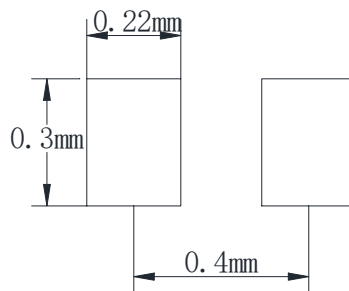
Case: DFN0603-2L

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	0.12	0.23
L1	0.12	0.23
e	0.40BSC	

Recommended Pad outline





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- **History Version**

V2.0	Product datasheet	2020-07-21
V2.1	Update Electrical Characteristics Update Typical Performance Characteristics Add marking Icon	2022-04-07

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