SSCE5V082L1

Ultra-low Capacitance Bi-directional Micro Packaged TVS Diodes for ESD Protection

Description

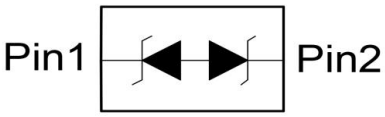
The SSCE5V082L1 is designed with SSC Punch-Through process TVS technology to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium. Also because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed, USB 3.0 super speed, VGA, DVI, HDMI, SDI and other high speed line applications.

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

- 40W peak pulse power (t_P = 8/20μs)
- DFN0603-2L Package
- Working voltage: 5V
- Low clamping voltage
- Low capacitance
- RoHS compliant
- Complies with following standards:
  -IEC61000-4-2(ESD) ±20kV (contact), ±25kV(air)
  -IEC61000-4-5 (Lightning) 8A (8/20μs)

PIN configuration



DFN0603-2L

Marking

Applications

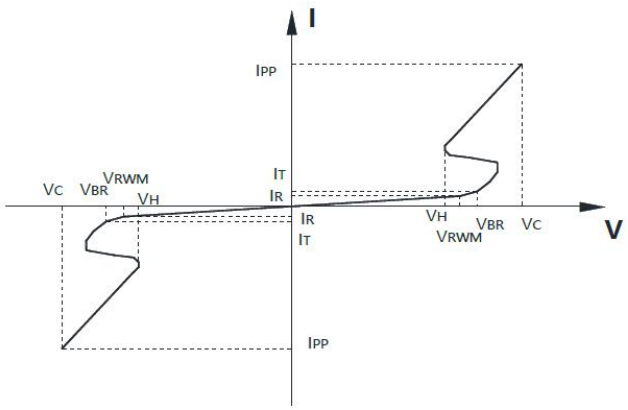
- High Speed Line: USB1.0/2.0/3.0/3.1, VGA, DVI, SDI
- HDMI1.3/1.4/2.0
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Cellular handsets and accessories
- Portable instrumentation
- Peripherals

Mechanical data

- Lead finish:100% matte Sn (Tin)
- Mounting position: Any
- Qualified max reflow temperature:260℃
- Device meets MSL 3 requirements
- Pure tin plating: 7 ~ 17 um
- Pin flatness: ≤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



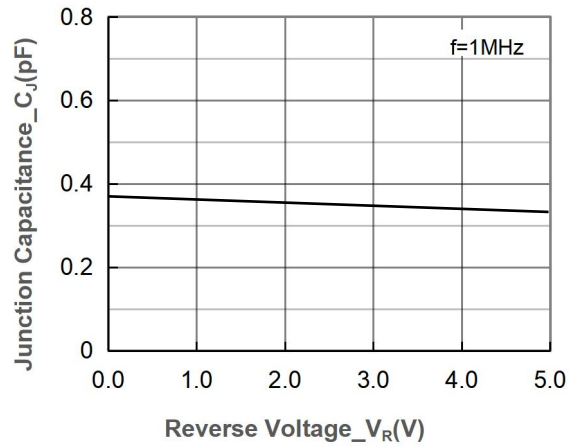
Absolute maximum rating @T_A=25℃

Parameter		Symbol	Value	Units
Peak Pulse Power（8/20μs）		P_{PP}	40	W
Peak Pulse Current（8/20μs）		I_{PP}	8	A
ESD Rating per IEC61000-4-2：	Contact Air	V_{ESD}	20 25	kV
Storage Temperature		T_{STG}	-55/+150	℃
Operating Temperature		T_J	-55/+150	℃
Lead Solder Temperature − Maximum (10 Second Duration)		TL	260	℃

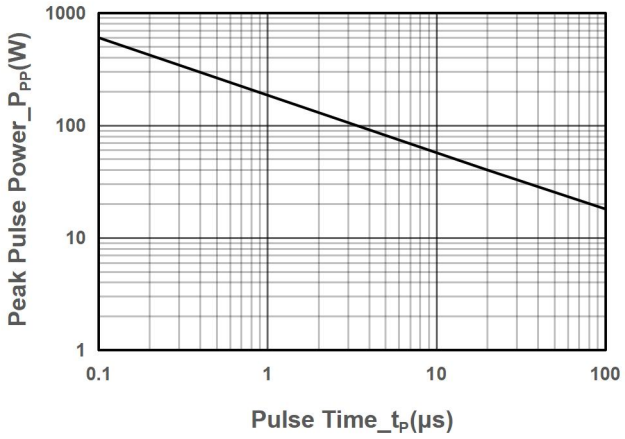
Electrical Characteristics @T_A=25℃

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	V_{RWM}				5	V
Breakdown Voltage	V_{BR}	I_T = 1mA	6	8		V
Reverse Leakage Current	I_R	V_{RWM} = 5V			0.1	μA
Clamping Voltage	V_C	I_{PP} = 8A, t_P = 8/20μs		5	8	V
Junction Capacitance	C_J	V_R = 0V, f = 1MHz		0.35	0.5	pF

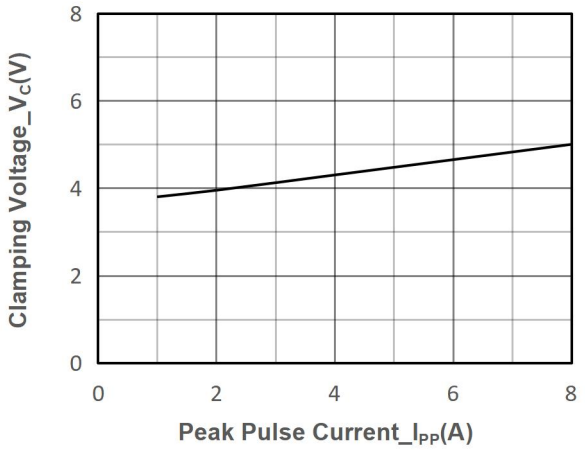
● Typical Performance Characteristics



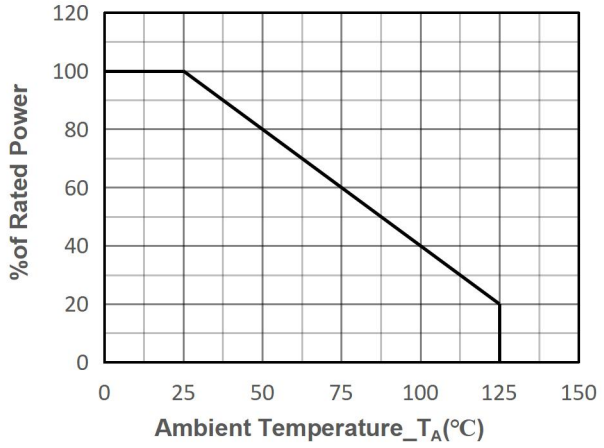
Junction Capacitance vs. Reverse Voltage



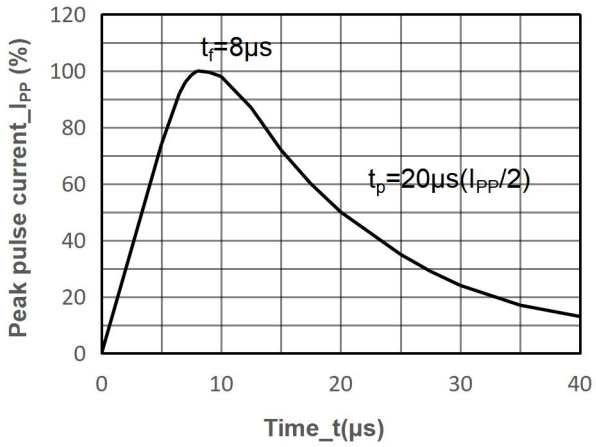
Peak Pulse Power vs. Pulse Time



Clamping Voltage vs. Peak Pulse Current



Power derating vs. Ambient temperature



8/20μs Pulse Waveform

● Package Information

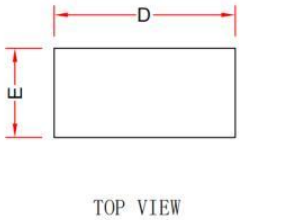
Ordering Information

Device	Package	Qty per Reel	Reel Size
SSCE5V082L1	DFN0603-2L	15000	7 Inch

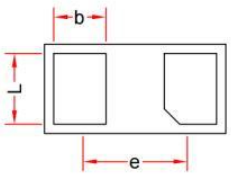
Mechanical Data

Case: DFN0603-2L

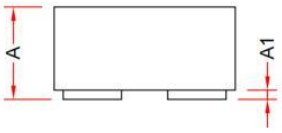
Case Material: Molded Plastic. UL Flammability



TOP VIEW



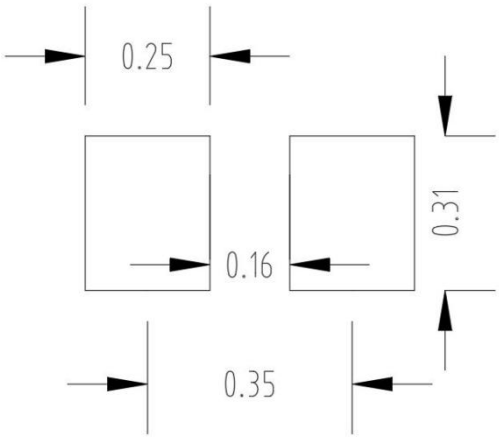
BOTTOM VIEW



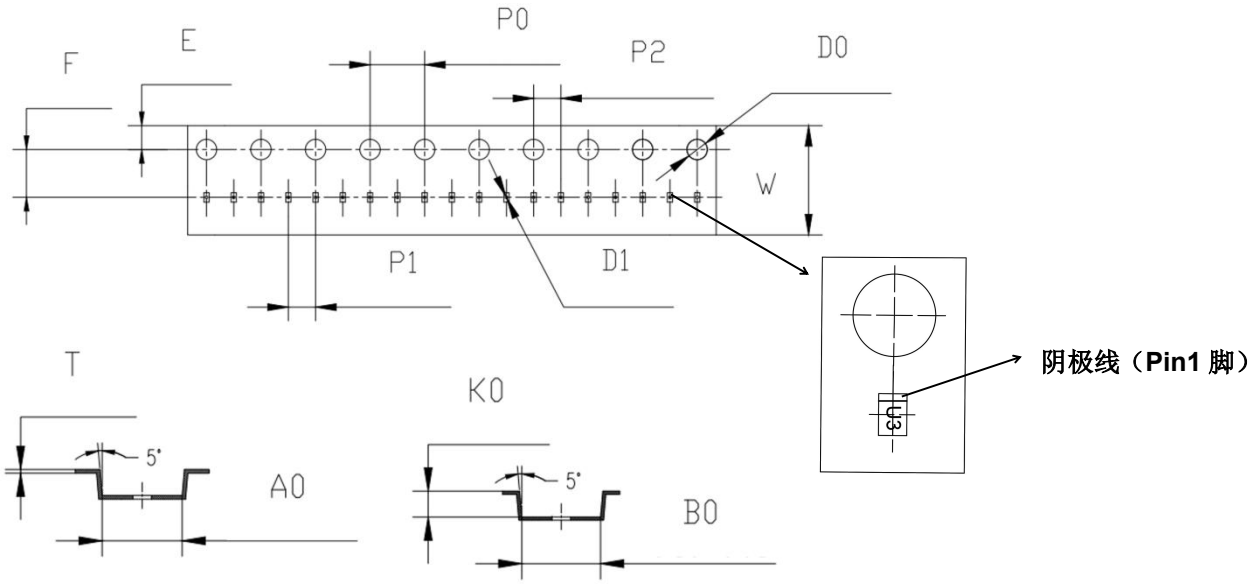
TOP VIEW

DIM	Millimeters		
	Min	Nom	Max
A	0.230	0.30	0.35
A1	0.00	0.03	0.05
b	0.115	0.19	0.25
D	0.55	0.6	0.67
E	0.25	0.30	0.37
L	0.18	0.23	0.30
e	0.35Ref		

Recommended Pad outline (Unit: mm)

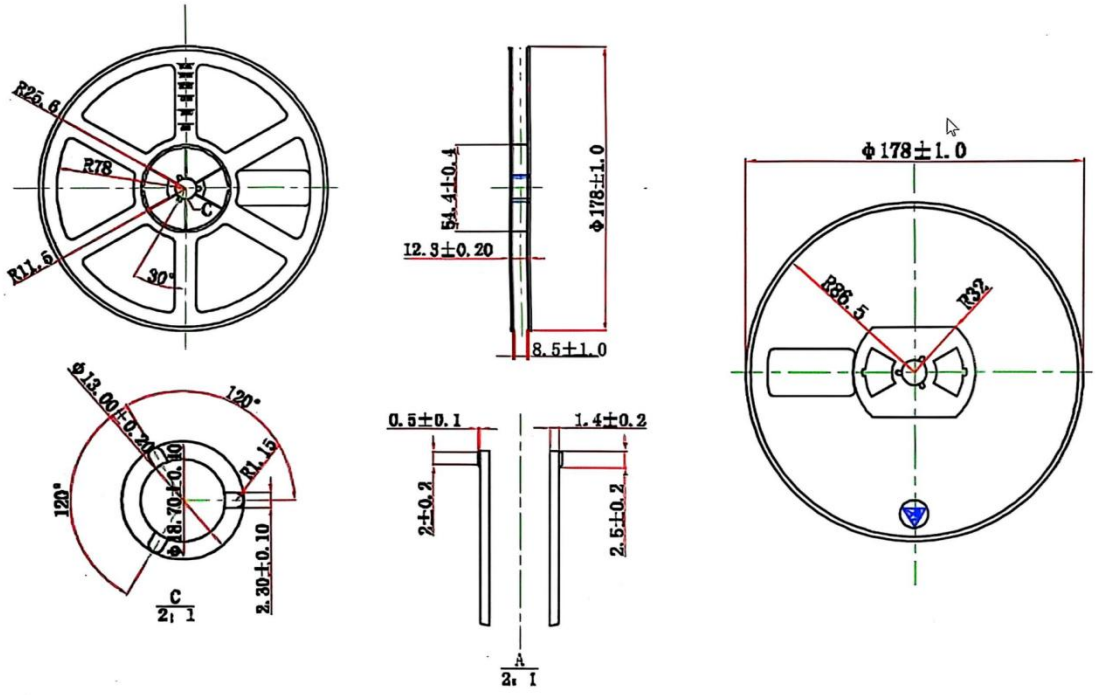


- **Type and Reel Information-DFN0603-2L**



(Unit: mm)

A0	B0	D0	D1	E	F	K0	P0
0.38±0.05	0.69±0.05	Φ1.55±0.05	Φ0.20±0.05	1.75±0.10	3.50±0.05	0.35±0.05	4.00±0.10
P1	P2	T	W				
2.00±0.10	2.00±0.05	0.18±0.05	8.00±0.10				



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