

SSCE5V022L1

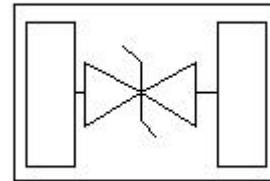
- **Description**

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**

- ✧ 40W 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) $\pm 15kV$ (air), $\pm 8kV$ (contact)

- **PIN configuration**



Topview

- **Applications**

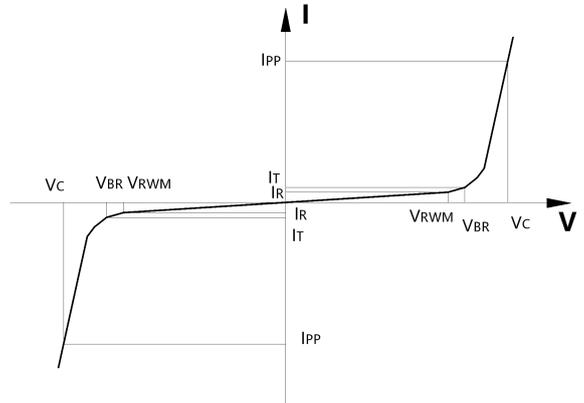
- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Servers
- ✧ High Speed Line : USB 1.0/2.0/3.0/3.1, VGA, DVI, SDI
- ✧ Portable instrumentation

- **Machanical 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)	40	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		12	V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}, T = 25^\circ\text{C}$		0.001	0.1	μA
Clamping Voltage	V_C	$I_{PP} = 2\text{A}, t_P = 8/20\mu\text{s}$		8.7	15	V
Clamping Voltage	V_C	$I_{PP} = 4\text{A}, t_P = 8/20\mu\text{s}$		11.2	17.5	V
Junction Capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$		7.5	10.2	pF

- **Typical Performance Characteristics**

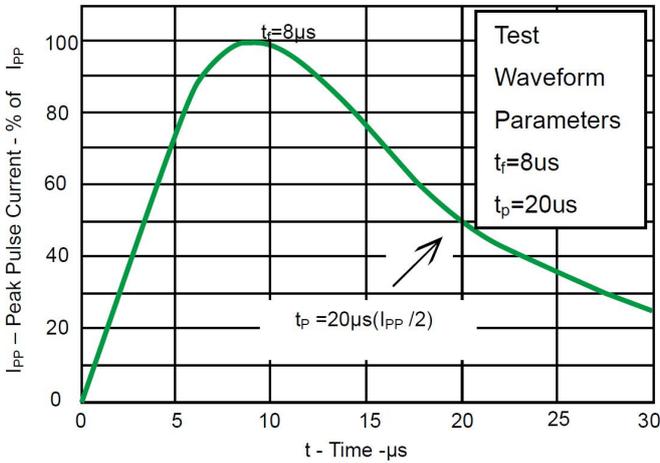


Fig 1. Pulse Waveform

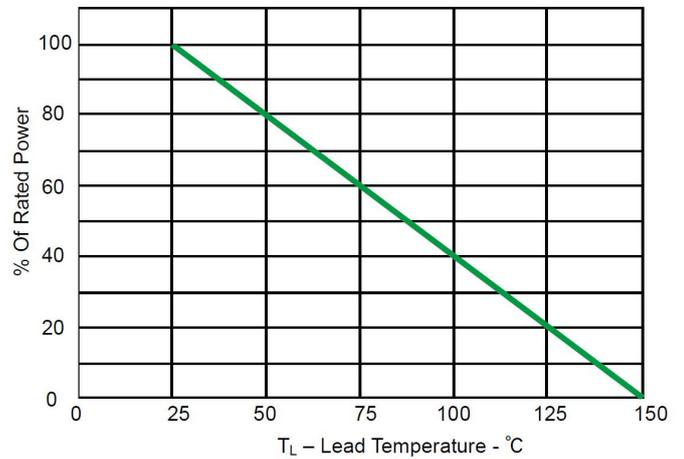
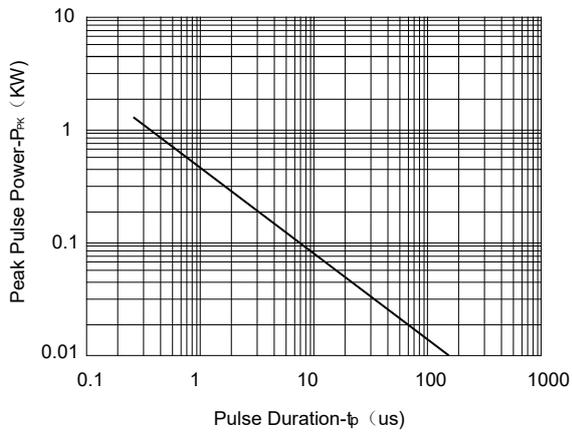


Fig 2. Power Derating Curve



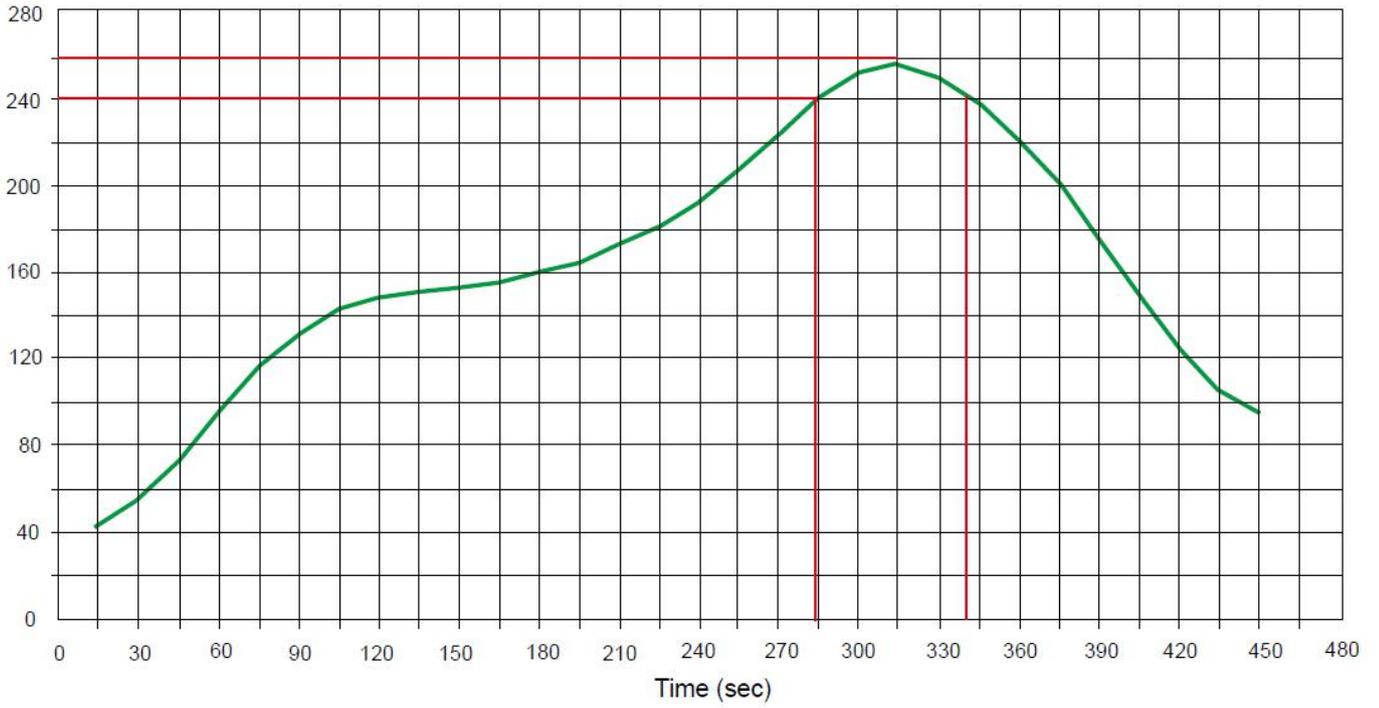
Non-Repetitive Peak Pulse Power vs. Pulse Time



SSCE5V022L1

- Solder Reflow Recommendation

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



- **Package Information**

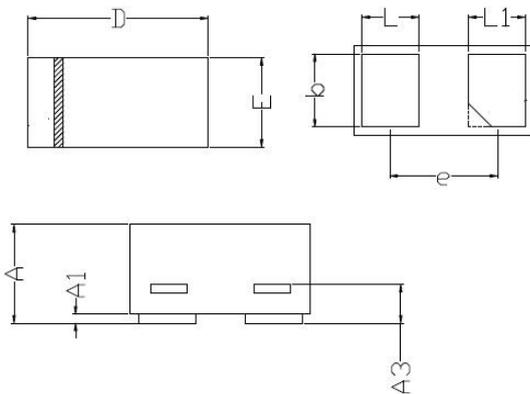
Ordering Information

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

Mechanical Data

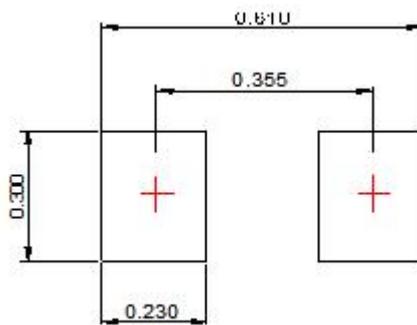
Case: DFN0603-2L

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	0.115	0.175
L1	0.115	0.175
e	0.40BSC	

Recommended Pad outline





SSCE5V022L1

DISCLAIMER

AFSEMI RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. AFSEMI DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENCE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

THE GRAPHS PROVIDED IN THIS DOCUMENT ARE STATISTICAL SUMMARIES BASED ON A LIMITED NUMBER OF SAMPLES AND ARE PROVIDED FOR INFORMATIONAL PURPOSE ONLY. THE PERFORMANCE CHARACTERISTICS LISTED IN THEM ARE NOT TESTED OR GUARANTEED. IN SOME GRAPHS, THE DATA PRESENTED MAY BE OUTSIDE THE SPECIFIED OPERATING RANGE (E.G., OUTSIDE SPECIFIED POWER SUPPLY RANGE) AND THEREFORE OUTSIDE THE WARRANTED RANGE.