



SSCE5V022L1

SSCE5V022L1

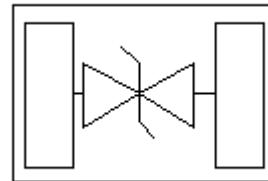
● Description

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

- ◇ 30W 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

● Mechanical data

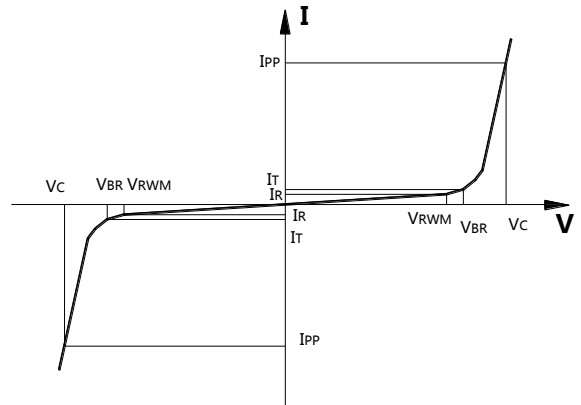
- ◇ Lead finish: 100% matte Sn(Tin)
- ◇ Mounting position: Any
- ◇ Qualified max reflow temperature: 260 °C
- ◇ Device meets MSL 1 requirements
- ◇ Pure tin plating: 7 ~ 17 μm
- ◇ Pin flatness: $\leq 3mil$



SSCE5V022L1

● 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) | 30 | 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 | $V_{RWM} = 5.0\text{V}, T = 25^\circ\text{C}$ | | 0.1 | | μA |
| Clamping Voltage | V_C | $I_{PP} = 2\text{A}, t_P = 8/20\mu\text{s}$ | | 8.7 | 15 | V |
| Junction Capacitance | C_J | $V_R = 0\text{V}, f = 1\text{MHz}$ | | 7.5 | 15 | pF |



SSCE5V022L1

● Typical Performance Characteristics

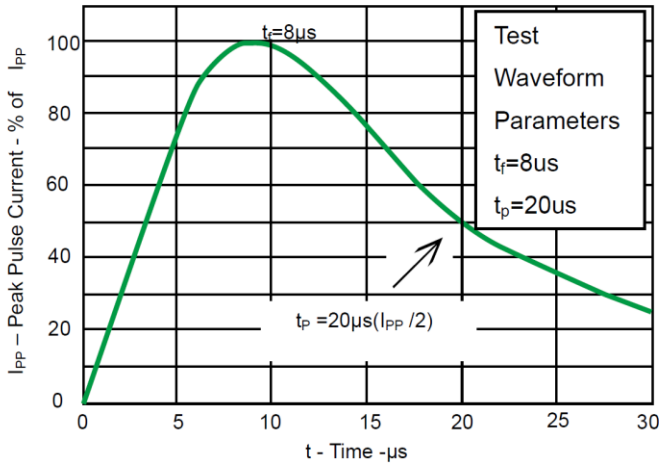


Fig 1. Pulse Waveform

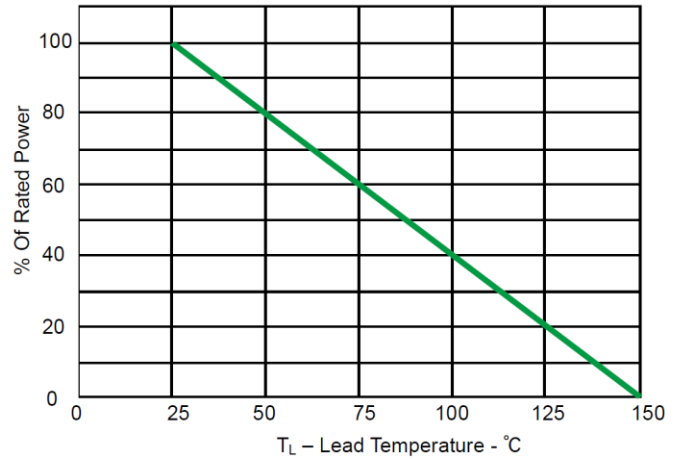
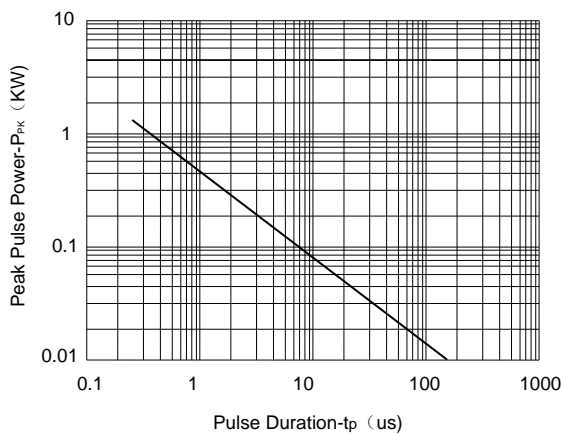


Fig 2. Power Derating Curve



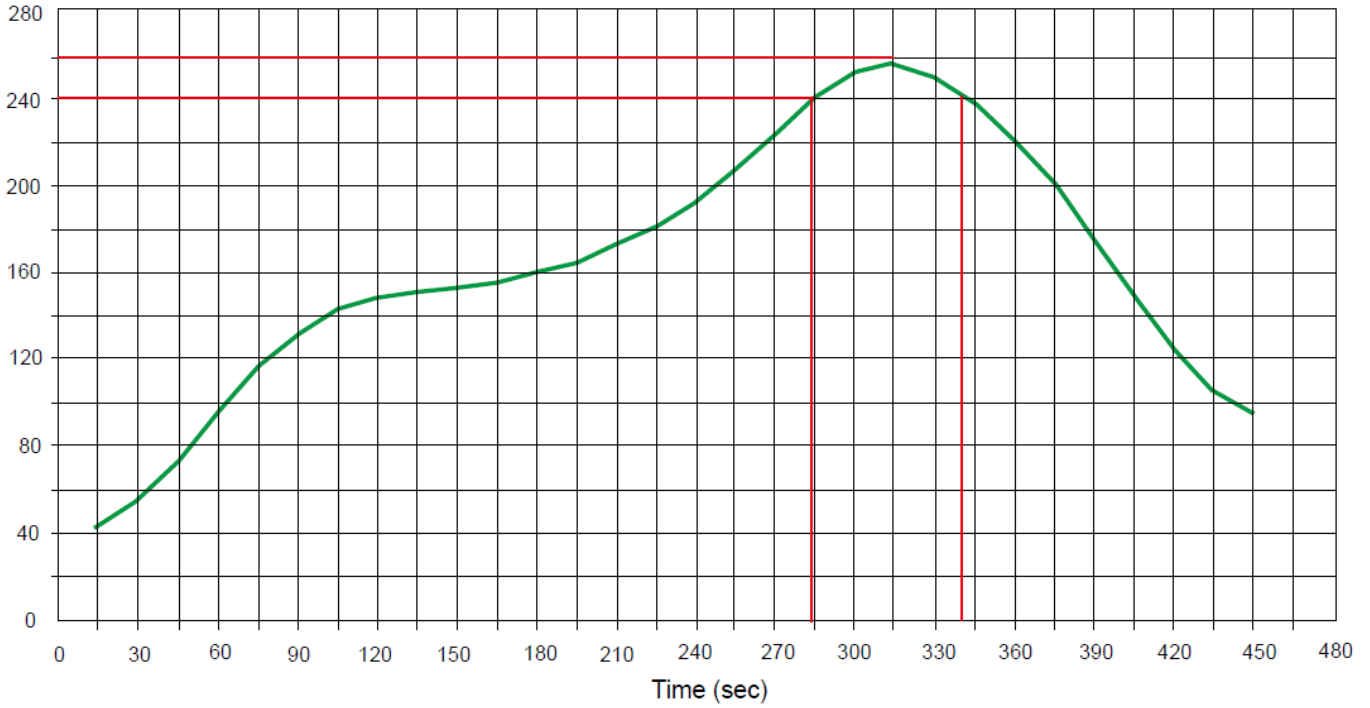
Non-Repetitive Peak Pulse Power vs. Pulse Time



SSCE5V022L1

● Solder Reflow Recommendation

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





SSCE5V022L1

● Package Information

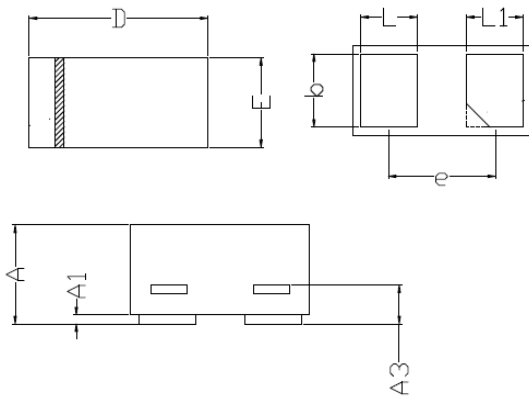
Ordering Information

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

Mechanical Data

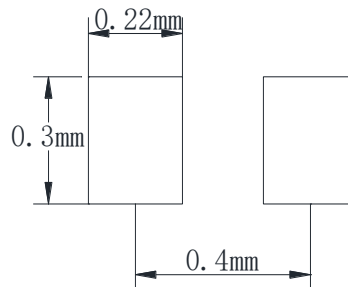
Case: DFN0603-2L

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



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 LICIENCE 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.