

SSCE5V011N7

Ultra Low Capacitance Array for ESD Protection

- **Description**

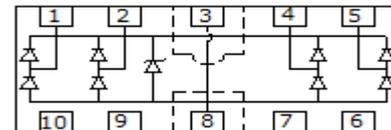
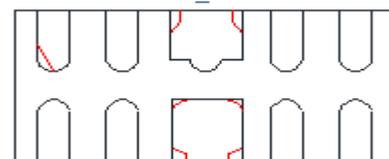
The SSCE5V011N7 provides a typical line to line capacitance of 0.3pF between I/O pins and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for HDMI applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing devices.

It has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events),and EFT (electrical fast transients).

- **Feature**

- ✧ 150W peak pulse power (tP = 8/20μs)
- ✧ DFN2510 Package
- ✧ Working voltage: 5V
- ✧ Low clamping voltage
- ✧ Low capacitance
- ✧ RoHS compliant transient protection for high speed data lines to IEC61000-4-2(ESD)±15kV(air),±8kV(contact)

- **PIN configuration**



Topview

- **Applications**

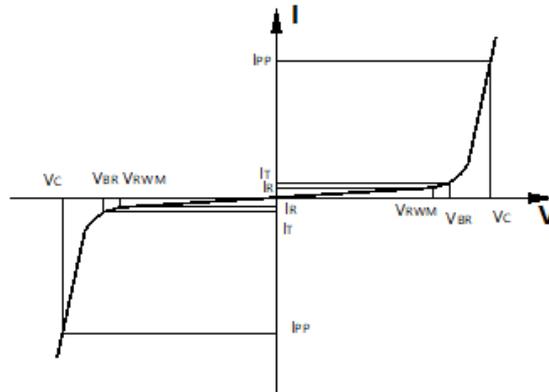
- ✧ DVI & HDMI Port Protection
- ✧ Serial and Parallel Ports
- ✧ Projection TV
- ✧ Notebooks, Desktops, Server
- ✧ USB 1.1/2.0/3.0/3.1/OTG

- **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 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 @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**

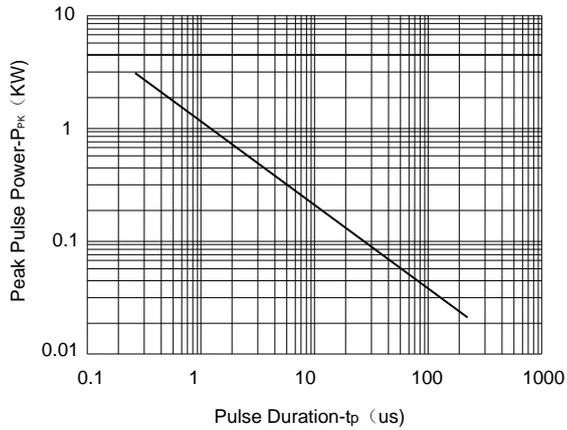
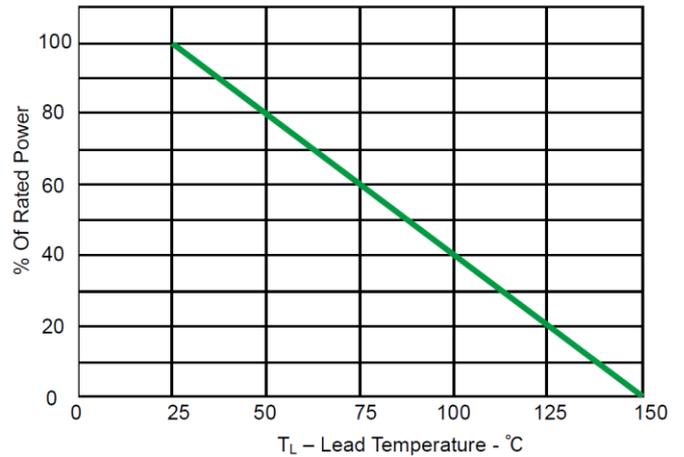
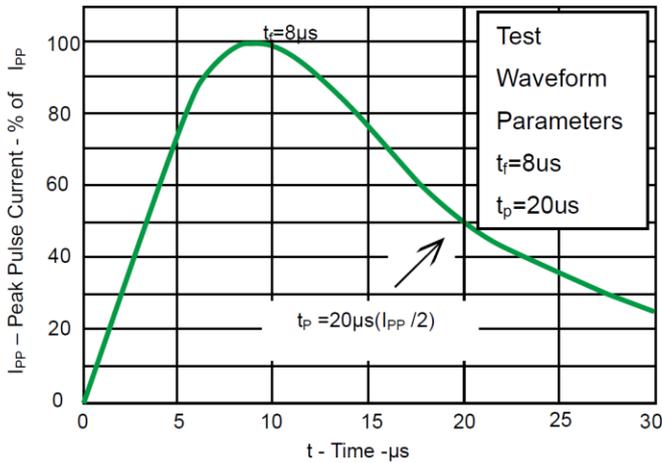
| Parameter | Symbol | Conditions | Min. | Typ. | Max. | Units |
|------------------------------|-----------|---|------|------|------|---------------|
| Peak Reverse Working Voltage | V_{RWM} | Any I/O to Ground | | 5 | | V |
| Breakdown Voltage | V_{BR} | $I_T = 1\text{mA}$ Any I/O to Ground | 6 | | | V |
| Reverse Leakage Current | I_R | $V_{RWM} = 5.0\text{V}$, $T = 25^\circ\text{C}$ | | | 1 | μA |
| Diode Forward Voltage | V_F | $I_F = 15\text{mA}$ | | 0.85 | 1.2 | |
| Clamping Voltage | V_C | $I_{PP} = 1\text{A}$, $t_P = 8/20\mu\text{s}$ | | | 15 | V |
| Clamping Voltage | V_C | $I_{PP} = 3.4\text{A}$, $t_P = 8/20\mu\text{s}$ | | | 15 | V |
| Junction Capacitance | C_J | $V_R = 0\text{V}$, $f = 1\text{MHz}$, between I/O pins | | 0.25 | 0.3 | |
| | | $V_R = 0\text{V}$, $f = 1\text{MHz}$, | | 0.3 | 0.5 | pF |



SSCE5V011N7

| | | | | | | |
|--|--|-----------------------|--|--|--|--|
| | | any I/O pin to Ground | | | | |
|--|--|-----------------------|--|--|--|--|

● Typical Performance Characteristics



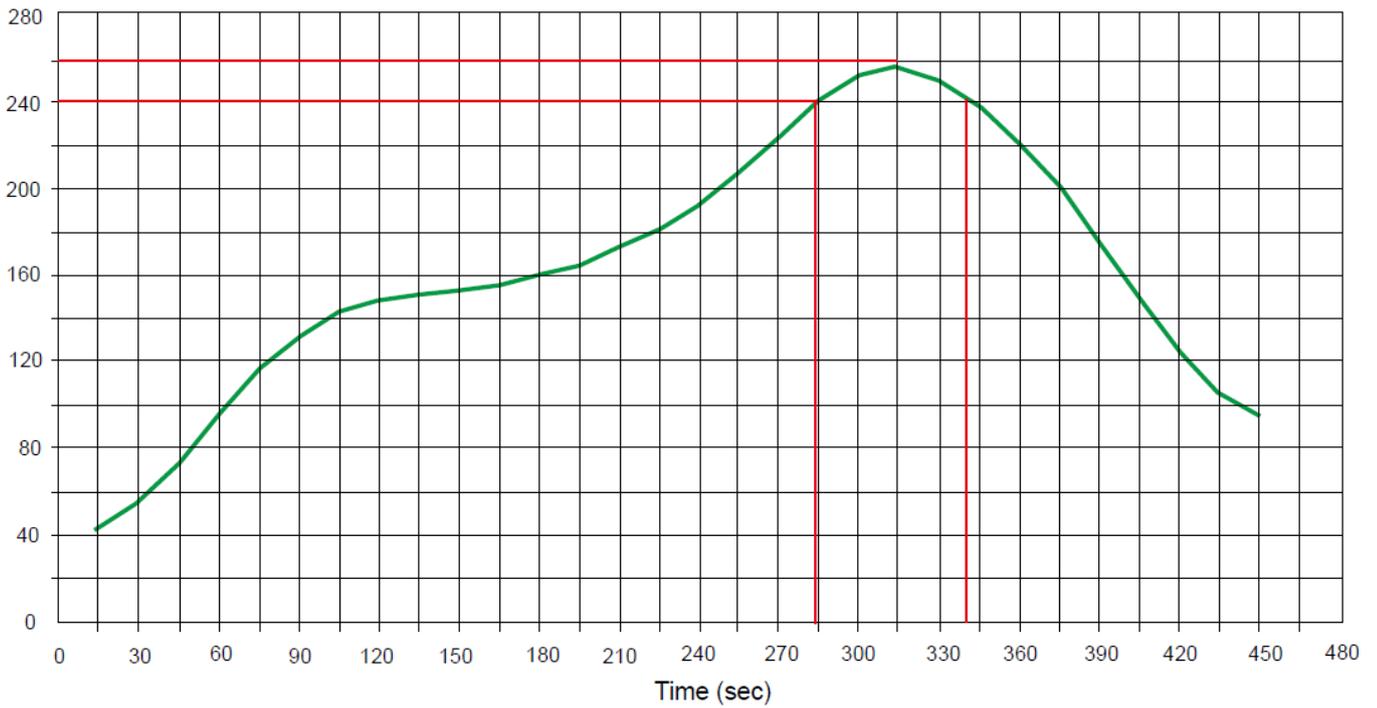
Non-Repetitive Peak Pulse Power vs. Pulse Time



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- Solder Reflow Recommendation**

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



● **Package Information**

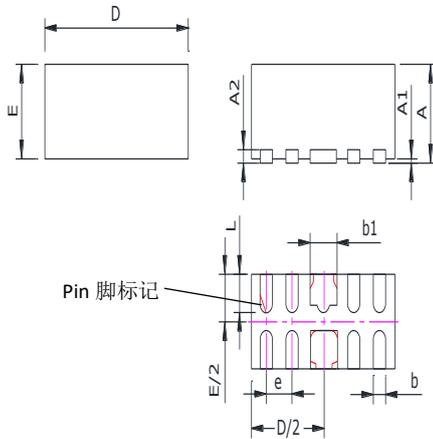
Ordering Information

| Device | Package | Qty per Reel | Reel Size |
|-------------|---------|--------------|-----------|
| SSCE5V011N7 | DFN2510 | 3000 | 7 Inch |

Mechanical Data

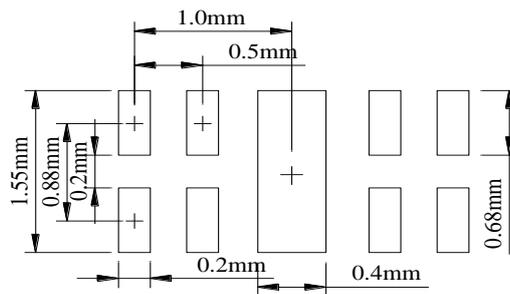
Case:DFN2510

Case Material: Molded Plastic. UL Flammability



| DIM | Millimeters | |
|-----|-------------|-------|
| | Min | Max |
| A | 0.45 | 0.65 |
| A1 | 0.05REF | |
| A2 | 0.15REF | |
| b | 0.15 | 0.25 |
| b1 | 0.30 | 0.50 |
| D | 2.424 | 2.576 |
| E | 0.924 | 1.076 |
| e | 0.50REF | |
| L | 0.30 | 0.45 |

Recommended Pad outline





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