

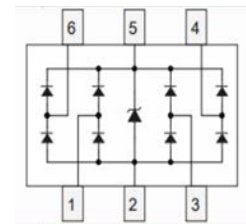


### Discription

The NUP4202W1T2G is a 5-channel ultra low capacitance rail clamp ESD protection diodes array. Each channel consists of a pair of ESD diodes that steer positive or negative ESD current to either the positive or negative rail. A zener diode is integrated in to the array between the positive and negative supply rails. In the typical applications, the negative rail pin (assigned as GND) is connected with system ground. The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.



SOT-363



Circuit Diagram

### Features

- ★ 5 channels of ESD protection
- ★ Provides ESD protection to IEC61000-4-2 level 4
  - >15kV air discharge
  - >8kV contact discharge
- ★ Low clamping voltage
- ★ Low operating voltage
- ★ Improved zener structure
- ★ Optimized package for easy high speed data lines PCB layout
- ★ RoHS compliant

### Ordering information

| Product ID   | Pack    | Qty(PCS) |
|--------------|---------|----------|
| NUP4202W1T2G | SOT-363 | 3000     |

### Absolute Ratings(Tamb = 25°C)

| Characteristics                | Symbol            | Ratings    | Unit |
|--------------------------------|-------------------|------------|------|
| Peak Pulse Power(8/20μs)       | P <sub>PP</sub>   | 70         | W    |
| Peak Pulse Current(8/20μs)     | I <sub>PP</sub>   | 4          | A    |
| ESD per IEC 61000-4-2(Air)     | V <sub>ESD1</sub> | ±20kV      | kV   |
| ESD per IEC 61000-4-2(Contact) | V <sub>ESD2</sub> | ±20kV      | kV   |
| Operating Temperature Range    | T <sub>opr</sub>  | -55 ~ +125 | °C   |
| Storage Temperature Range      | T <sub>stg</sub>  | -55 ~ +150 | °C   |



**Electrical Characteristics** ( $T_{amb}=25^{\circ}C$ )

| Symbol    | Parameter                 | Test Condition                  | Min | Typ  | Max  | Units   |
|-----------|---------------------------|---------------------------------|-----|------|------|---------|
| $V_{RWM}$ | Reverse Working Voltage   |                                 |     |      | 5.0  | V       |
| $V_{BR}$  | Reverse Breakdown Voltage | $I_T = 1mA$                     | 6.0 |      |      | V       |
| $I_R$     | Reverse Leakage Current   | $V_{RWM} = 5.0V$                |     |      | 3    | $\mu A$ |
| $V_C$     | Clamping Voltage          | $I_{RWM} = 4A, t_p = 8/20\mu s$ |     |      | 18   | V       |
| $C_J$     | Junction Capacitance      | $V_R = 0V, f = 1MHz$            |     | 0.25 | 0.40 | pF      |

**Typical Characteristics**

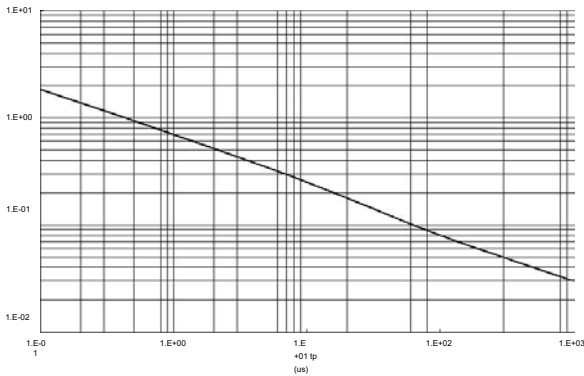


Figure 1. Peak Pulse Power Derating

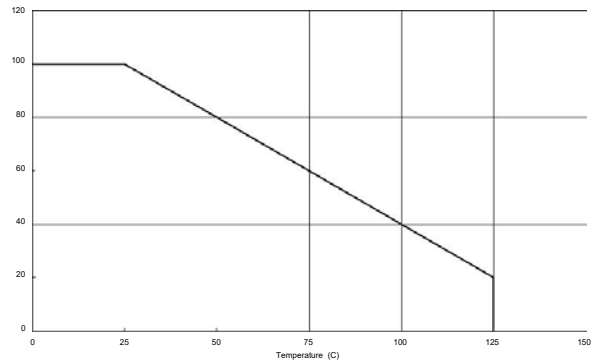


Figure 2. Peak Pulse Power Derating vs Temperature

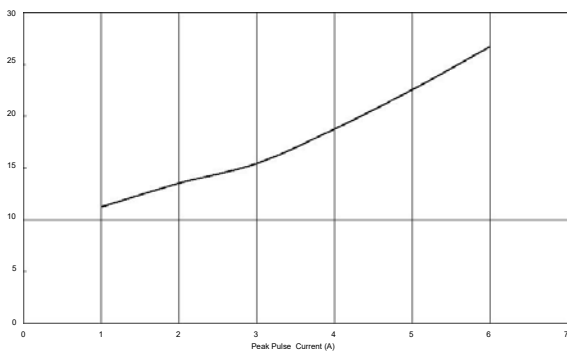


Figure 3. Peak Pulse Current vs Clamping Voltage

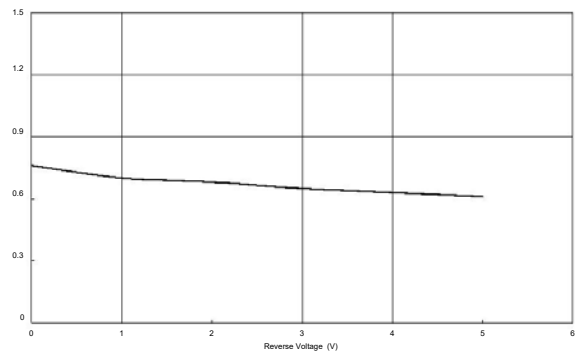
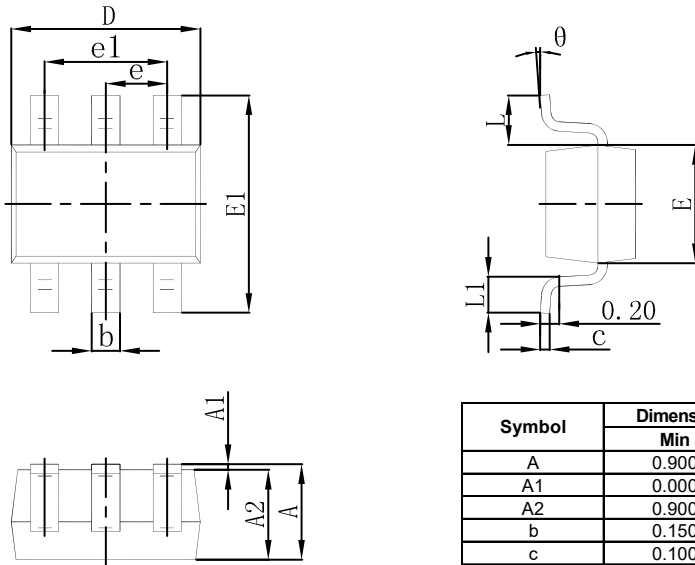


Figure 4. Reverse Voltage vs Capacitance

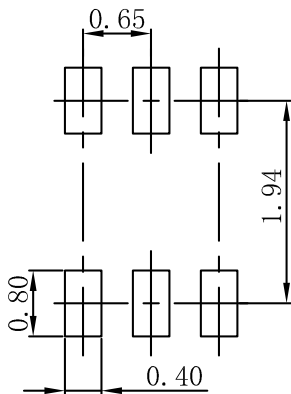


### SOT-363 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.900                     | 1.100 | 0.035                | 0.043 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.000 | 0.035                | 0.039 |
| b      | 0.150                     | 0.350 | 0.006                | 0.014 |
| c      | 0.100                     | 0.150 | 0.004                | 0.006 |
| D      | 2.000                     | 2.200 | 0.079                | 0.087 |
| E      | 1.150                     | 1.350 | 0.045                | 0.053 |
| E1     | 2.150                     | 2.400 | 0.085                | 0.094 |
| e      | 0.650 TYP                 |       | 0.026 TYP            |       |
| e1     | 1.200                     | 1.400 | 0.047                | 0.055 |
| L      | 0.525 REF                 |       | 0.021 REF            |       |
| L1     | 0.260                     | 0.460 | 0.010                | 0.018 |
| theta  | 0°                        | 8°    | 0°                   | 8°    |

### SOT-363 Suggested Pad Layout



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.



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