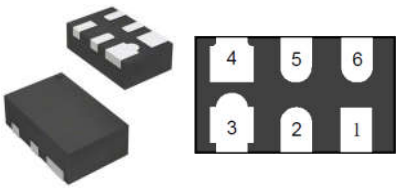
# RCLAMP0522P

**Uni-directional TVS Diode**

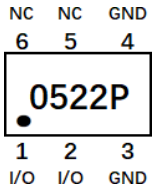
## Features

* Ultra low leakage: nA level
* Ultra low capacitance
* RoHS Compliant
* REACH & SVHC Compliant
* Halogen Compliant
* DFN1610-6L Package

## Package and Marking Diagram

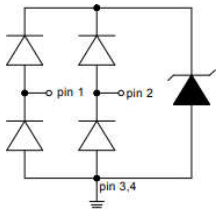



DFN1610-6L




Top view

## Circuit Diagram

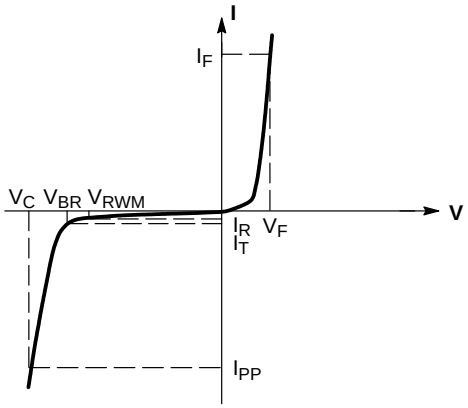



## Ordering Information

| Part Number | Packaging | Reel Size |
|---|---|---|
| RCLAMP0522P | 3000/Tape & Reel | 7 inch |

## Portion Electronics 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 @$I_{PP}$ |



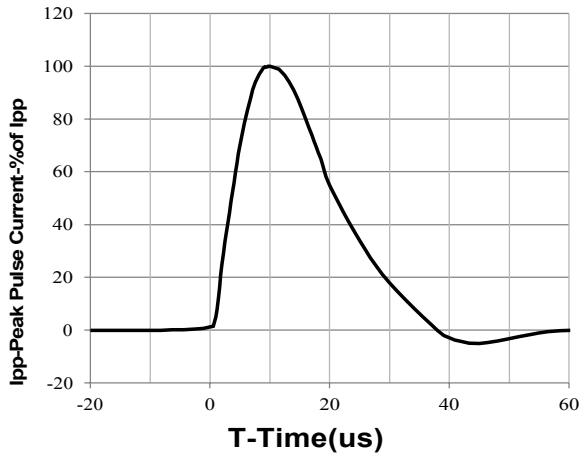

## Absolute Maximum Ratings ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Peak Pulse Power (8/20μs pulse) | $P_{pk}$ | 60 | W |
| Peak Pulse Current (8/20μs pulse) | $I_{PP}$ | 4 | A |
| ESD per IEC 61000−4−2 (Air)<br>ESD per IEC 61000−4−2 (Contact) | $V_{ESD}$ | ±20<br>±15 | kV |
| Operating Temperature Range | $T_J$ | −40 to +125 | °C |
| Storage Temperature Range | $T_{stg}$ | −55 to +150 | °C |

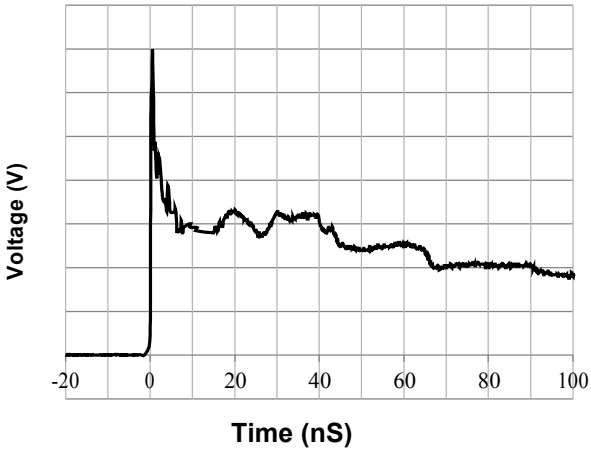
## Electrical Characteristics ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse Working Voltage | $V_{RWM}$ | | | | 5 | V |
| Breakdown Voltage | $V_{BR}$ | $I_T$ = 1mA，I/O-GND | 6 | 7.1 | 9 | V |
| Breakdown Voltage | $V_{BR}$ | $I_T$ = 1mA，I/O-I/O | 6.5 | 8 | 9.5 | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$ = 5V | | | 100 | nA |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 1A (8/20μs pulse)，I/O-GND | | 8 | 10 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 4A (8/20μs pulse)，I/O-GND | | 10 | 15 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 1A (8/20μs pulse)，I/O-I/O | | 9.3 | 11 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 4A (8/20μs pulse)，I/O-I/O | | 16 | 20 | V |
| Junction Capacitance | $C_J$ | $V_R$ = 0V, f = 1MHz，I/O-GND | | 0.6 | 0.9 | pF |
| Junction Capacitance | $C_J$ | $V_R$ = 0V, f = 1MHz，I/O-I/O | | 0.3 | 0.5 | pF |

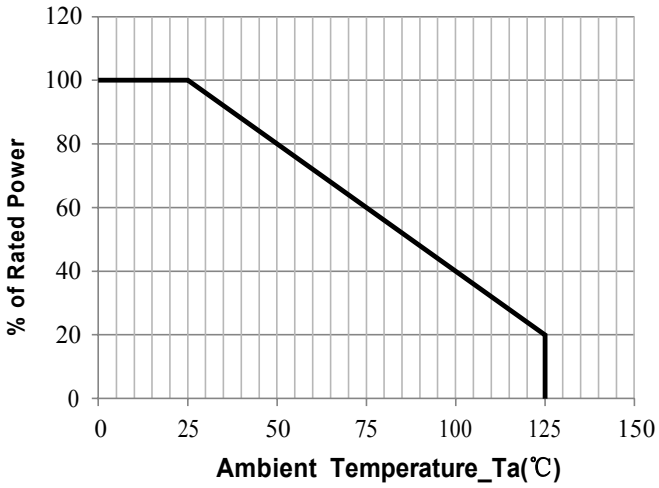
## Typical Performance Characteristics ($T_A$=25°C unless otherwise Specified)




8 / 20us Pulse Waveform

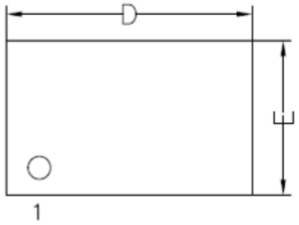



IEC61000−4−2 Pulse Waveform

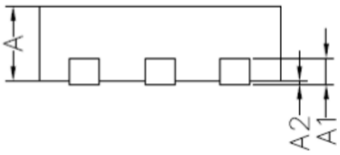



Power Derating Curve

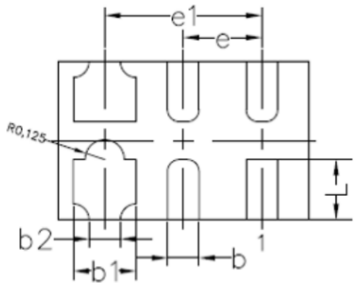
## DFN1610-6L Package Outline Drawing




TOP VIEW



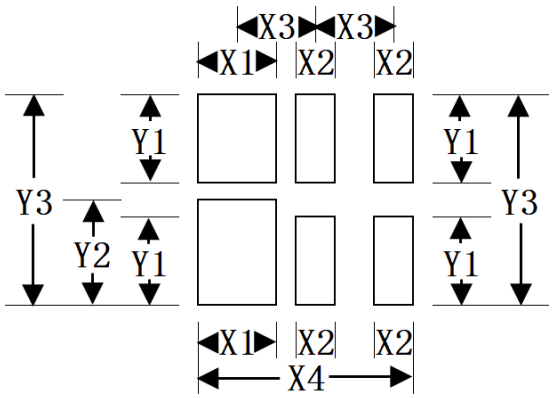

SIDE VIEW




BOTTOM VIEW

| SYM | DIMENSIONS | | | | | |
|---|---|---|---|---|---|---|
| | MILLIMETERS | | | INCHES | | |
| | Min | Typ | Max | Min | Typ | Max |
| D | 1.55 | 1.60 | 1.65 | 0.0610 | 0.0630 | 0.0650 |
| E | 0.95 | 1.00 | 1.05 | 0.0374 | 0.0394 | 0.0413 |
| b1 | 0.35 | 0.40 | 0.45 | 0.0138 | 0.0158 | 0.0177 |
| b2 | 0.20 REF | | | 0.0079 REF | | |
| b | 0.15 | 0.20 | 0.25 | 0.0059 | 0.0079 | 0.0098 |
| L | 0.33 | 0.38 | 0.43 | 0.0130 | 0.0150 | 0.0169 |
| e | 0.50 BSC | | | 0.0197 BSC | | |
| e1 | 1.00 BSC | | | 0.0394 BSC | | |
| A | 0.50 | 0.55 | 0.60 | 0.0197 | 0.0217 | 0.0236 |
| A1 | 0.152 REF | | | 0.0060 REF | | |
| A2 | - - | - - | 0.05 | - - | - - | 0.0020 |

## Suggested Land Pattern




| SYM | DIMENSIONS | |
|---|---|---|
| | MILLIMETERS | INCHES |
| X1 | 0.45 | 0.018 |
| X2 | 0.25 | 0.010 |
| X3 | 0.50 | 0.020 |
| X4 | 1.35 | 0.053 |
| Y1 | 0.50 | 0.020 |
| Y2 | 0.60 | 0.024 |
| Y3 | 1.20 | 0.047 |

Note:

The land pattern is for reference purposes only.