## Absolute Maximum Rating

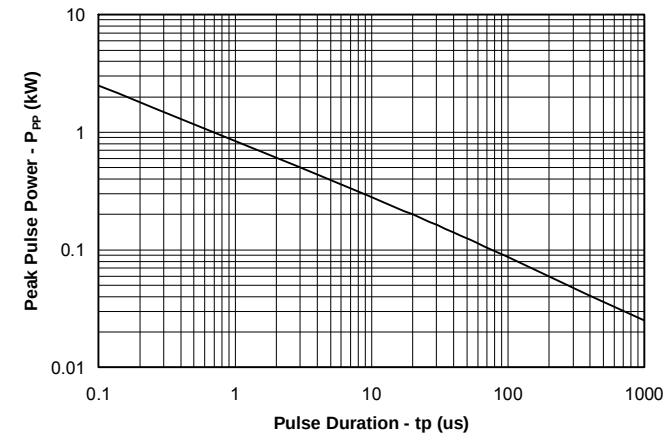
| Rating | Symbol | Value | Units |
|---|---|---|---|
| Peak Pulse Power (tp = 8/20µs) | $P_{pk}$ | 200 | Watts |
| Maximum Peak Pulse Current (tp = 8/20µs) | $I_{pp}$ | 8 | Amps |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{PP}$ | +/- 20<br>+/- 15 | kV |
| Operating Temperature | $T_J$ | -55 to +125 | °C |
| Storage Temperature | $T_{STG}$ | -55 to +150 | °C |

## Electrical Characteristics (T=25°C)

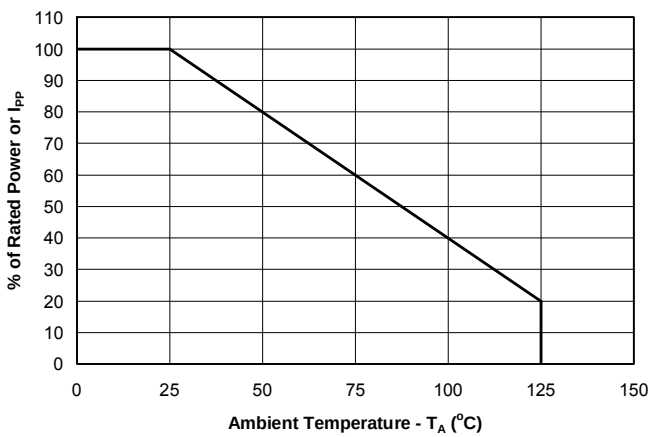
| Parameter | Symbol | Conditions | Minimum | Typical | Maximum | Units |
|---|---|---|---|---|---|---|
| Reverse Stand-Off Voltage | $V_{RWM}$ | | | | 12 | V |
| Reverse Breakdown Voltage | $V_{BR}$ | $I_t$ = 1mA | 13.3 | 15.5 | 17.5 | V |
| Reverse Leakage Current | $I_R$ | $V_{RWM}$ = 12V, T=25°C | | 0.100 | 1 | µA |
| Forward Voltage | $V_F$ | $I_F$ = 10mA | | 0.8 | | V |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 1A, $t_p$ = 8/20µs | | | 19 | V |
| Clamping Voltage | $V_C$ | $I_{PP}$ = 8A, $t_p$ = 8/20µs | | | 25 | V |
| Junction Capacitance | $C_j$ | $V_R$ = 0V, f = 1MHz | | | 60 | pF |

## Typical Characteristics

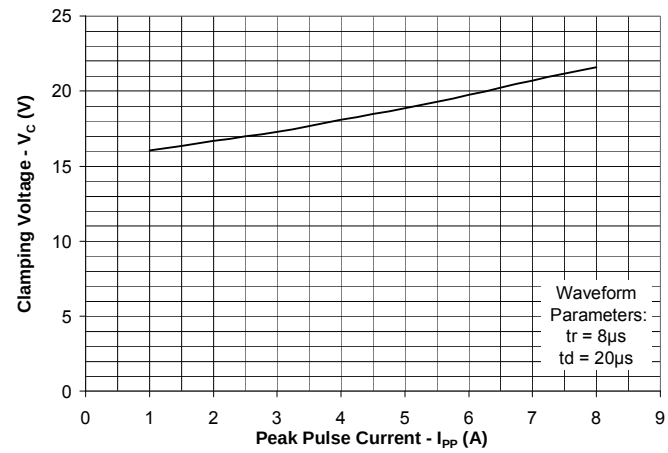
### Non-Repetitive Peak Pulse Power vs. Pulse Time



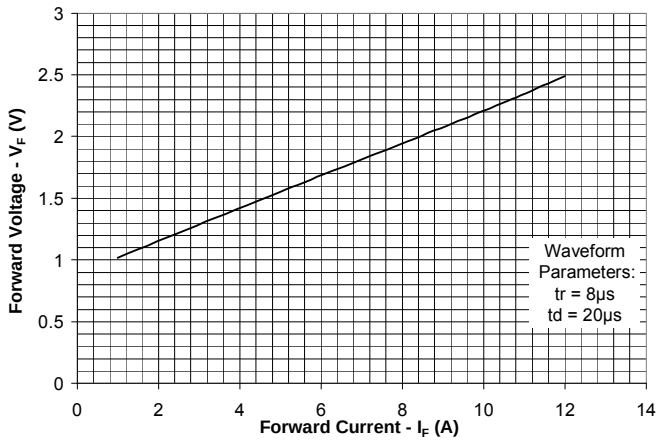

### Power Derating Curve



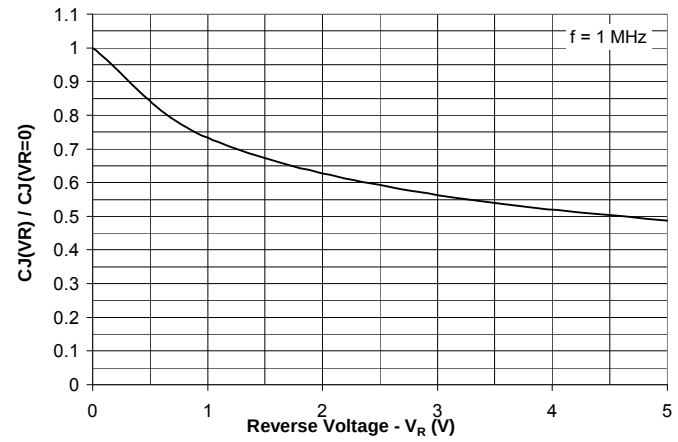

### Clamping Voltage vs. Peak Pulse Current



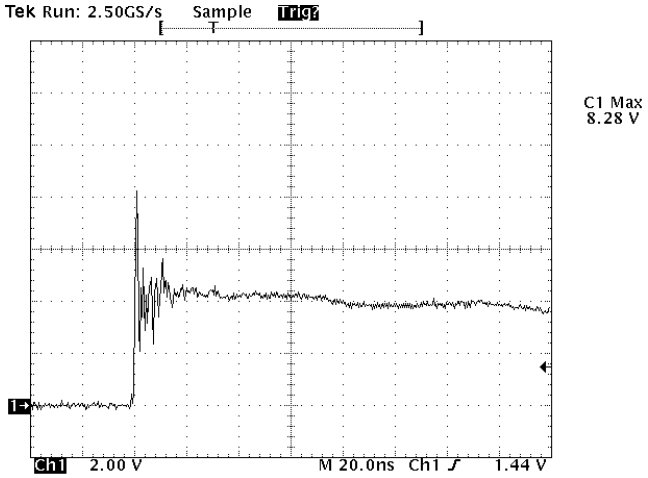

### Forward Voltage vs. Forward Current




### Normalized Junction Capacitance vs. Reverse Voltage




### ESD Clamping (8kV Contact per IEC 61000-4-2)




Note: Data is taken with a 10x attenuator

## Applications Information

### Device Connection Options

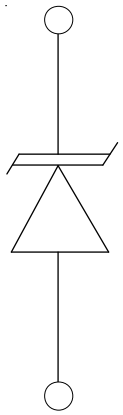
These TVS diodes are designed to protect one data, I/O, or power supply line. The device is unidirectional and may be used on lines where the signal polarity is above ground. The cathode band should be placed towards the line that is to be protected.

### Circuit Board Layout Recommendations for Suppression of ESD.

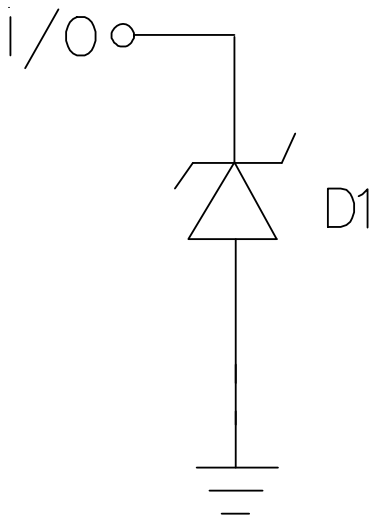
Good circuit board layout is critical for the suppression of ESD induced transients. The following guidelines are recommended:

- Place the TVS near the input terminals or connectors to restrict transient coupling.
- Minimize the path length between the TVS and the protected line.
- Minimize all conductive loops including power and ground loops.
- The ESD transient return path to ground should be kept as short as possible.
- Never run critical signals near board edges.
- Use ground planes whenever possible.

### Circuit Diagram



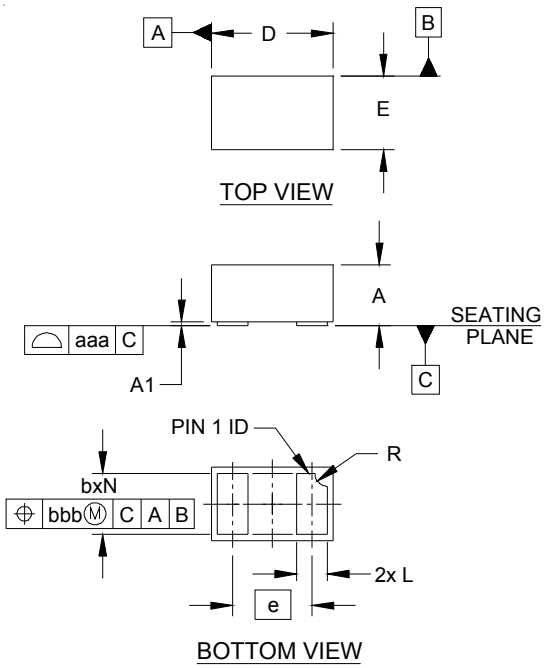
## Applications Information - Spice Model




**uClamp1201P Spice Model**

| uClamp1201P Spice Parameters | | |
|---|---|---|
| **Parameter** | **Unit** | **D1 (TVS)** |
| IS | Amp | 1.48E-14 |
| BV | Volt | 15.33 |
| VJ | Volt | 0.723 |
| RS | Ohm | 0.772 |
| IBV | Amp | 1.0E-3 |
| CJO | Farad | 52E-12 |
| TT | sec | 2.541E-9 |
| M | -- | 0.268 |
| N | -- | 1.1 |
| EG | eV | 1.11 |

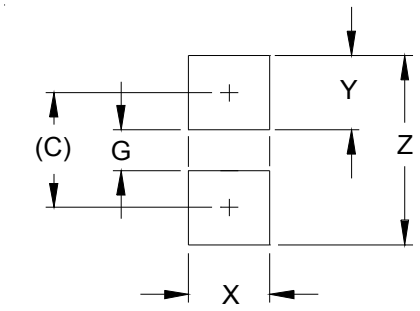
## Outline Drawing - SLP1006P2




| DIMENSIONS | | | | | | |
|---|---|---|---|---|---|---|
| DIM | INCHES | | | MILLIMETERS | | |
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | .016 | .020 | .022 | 0.40 | 0.50 | 0.55 |
| A1 | .000 | .001 | .002 | 0.00 | 0.03 | 0.05 |
| b | .018 | .020 | .022 | 0.45 | 0.50 | 0.55 |
| D | .035 | .039 | .043 | 0.90 | 1.00 | 1.10 |
| E | .020 | .024 | .028 | 0.50 | 0.60 | 0.70 |
| e | .026 BSC | | | 0.65 BSC | | |
| L | .008 | .010 | .012 | 0.20 | 0.25 | 0.30 |
| R | .002 | .004 | .006 | 0.05 | 0.10 | 0.15 |
| N | 2 | | | 2 | | |
| aaa | .003 | | | 0.08 | | |
| bbb | .004 | | | 0.10 | | |

NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).

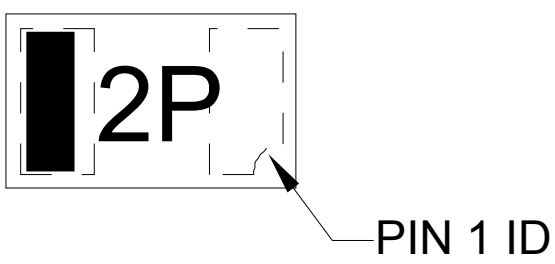
## Land Pattern - SLP1006P2




| DIMENSIONS | | |
|---|---|---|
| DIM | INCHES | MILLIMETERS |
| C | (.033) | (0.85) |
| G | .012 | 0.30 |
| X | .024 | 0.60 |
| Y | .022 | 0.55 |
| Z | .055 | 1.40 |

NOTES:
1. CONTROLLING DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

## Marking Code

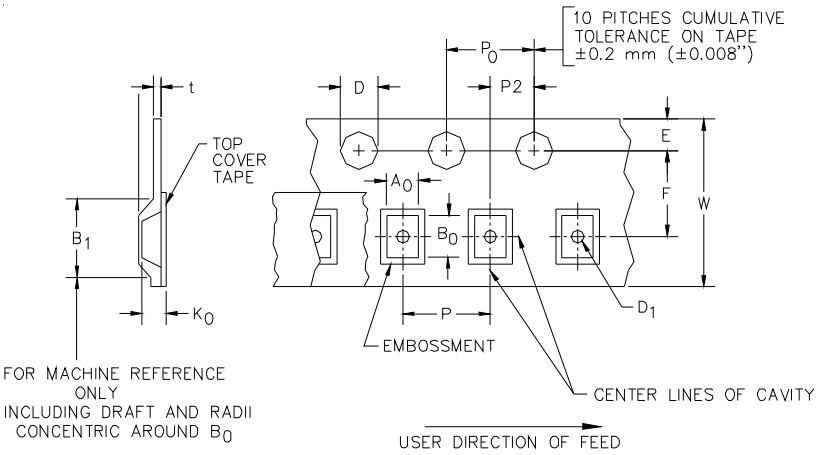


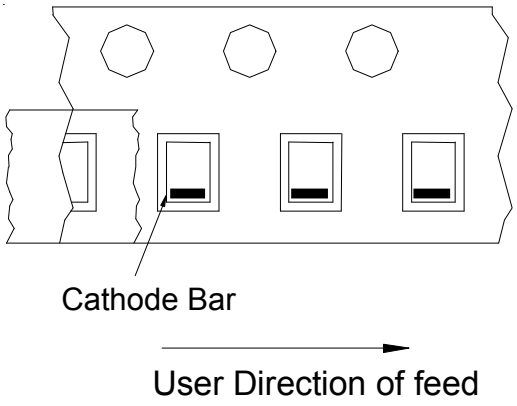

## Ordering Information

| Part Number | Working Voltage | Qty per Reel | Reel Size |
|---|---|---|---|
| uClamp1201P.TCT | 12V | 3,000 | 7 Inch |

Notes:
1) This is a lead-free, RoHS/WEEE compliant product
MicroClamp, uClamp and µClamp are marks of Semtech Corporation

## Tape and Reel Specification




**Device Orientation in Tape**

| A0 | B0 | K0 |
|---|---|---|
| 0.69 +/-0.10 mm | 1.19 +/-0.10 mm | 0.66 +/-0.10 mm |

| Tape Width | B, (Max) | D | D1 | E | F | P | P0 | P2 | T | W |
|---|---|---|---|---|---|---|---|---|---|---|
| 8 mm | 4.2 mm (.165) | 1.5 + 0.1 mm - 0.0 mm (0.59 +.005 - .000) | 0.4 mm ±0.25 (.031) | 1.750±.10 mm (.069±.004) | 3.5±0.05 mm (.138±.002) | 4.0±0.10 mm (.157±.00-4) | 4.0±0.1 mm (.157±.00-4) | 2.0±0.05 mm (.079±.002) | 0.254±0.02 mm (.016) | 8.0 mm + 0.3 mm - 0.1 mm (.312±.012) |

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