

## PROTECTION PRODUCTS

### Absolute Maximum Rating

| Rating                                                         | Symbol    | Value       | Units |
|----------------------------------------------------------------|-----------|-------------|-------|
| Peak Pulse Power ( $t_p = 8/20\mu s$ )                         | $P_{pk}$  | 2500        | Watts |
| Peak Pulse Current ( $t_p = 2/10\mu s$ )                       | $I_{pp}$  | 120         | A     |
| Peak Pulse Current ( $t_p = 8/20\mu s$ )                       | $I_{pp}$  | 95          | A     |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | 30<br>30    | kV    |
| Operating Temperature                                          | $T_J$     | -55 to +125 | °C    |
| Storage Temperature                                            | $T_{STG}$ | -55 to +150 | °C    |

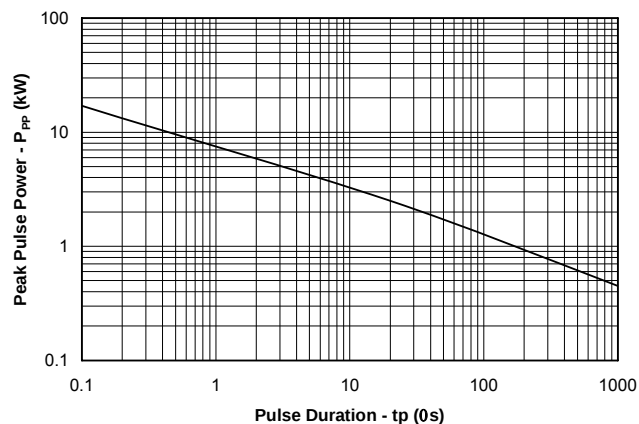
### Electrical Characteristics (T=25°C)

| TClamp0602N               |           |                                                    |         |         |         |         |
|---------------------------|-----------|----------------------------------------------------|---------|---------|---------|---------|
| Parameter                 | Symbol    | Conditions                                         | Minimum | Typical | Maximum | Units   |
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                                    |         |         | 6       | V       |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_t = 1mA$                                        | 6.8     |         |         | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 6V, T=25^\circ C$                       |         |         | 5       | $\mu A$ |
| Clamping Voltage          | $V_C$     | $I_{pp} = 100A, t_p = 2/10\mu s$<br>Line-to-Ground |         |         | 25      | V       |
| Clamping Voltage          | $V_C$     | $I_{pp} = 100A, t_p = 2/10\mu s$<br>Line-to-Line   |         |         | 29      | V       |
| Junction Capacitance      | $C_J$     | Line-to-Gnd<br>$V_R = 0V, f = 1MHz$                |         |         | 25      | pF      |
|                           |           | Line-to-Line<br>$V_R = 0V, f = 1MHz$               |         |         | 12      | pF      |

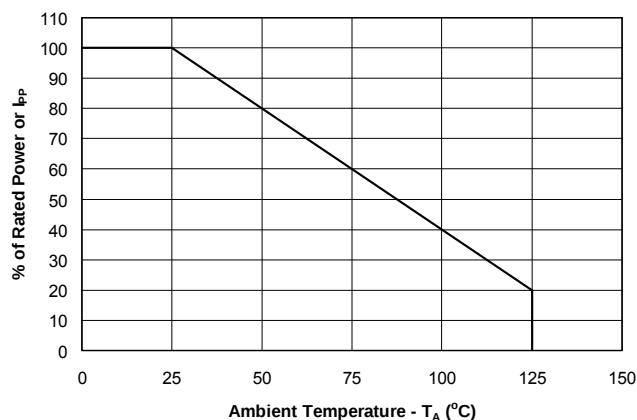
## PROTECTION PRODUCTS

### Typical Characteristics

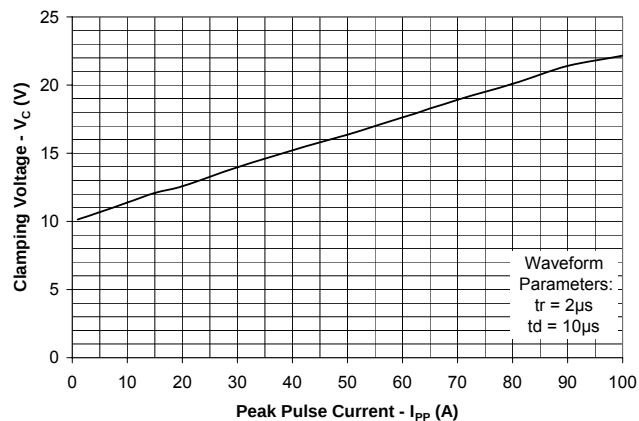
#### Non-Repetitive Peak Pulse Power vs. Pulse Time



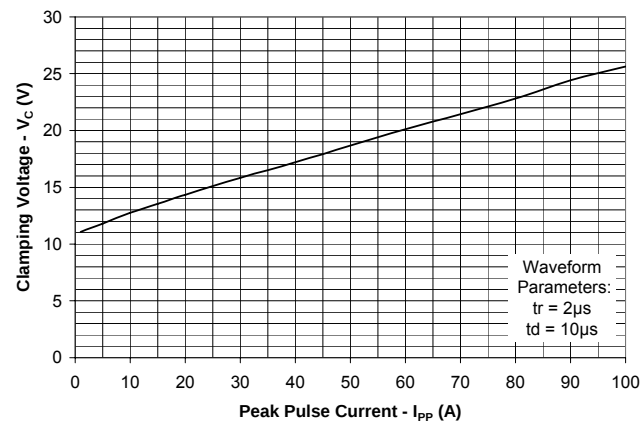
#### Power Derating Curve



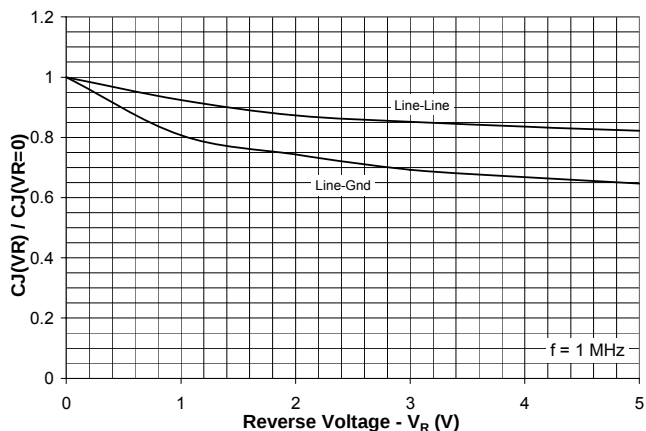
#### Clamping Voltage vs. Peak Pulse Current Line-to-Ground



#### Clamping Voltage vs. Peak Pulse Current Line-to-Line



#### Normalized Junction Capacitance vs. Reverse Voltage



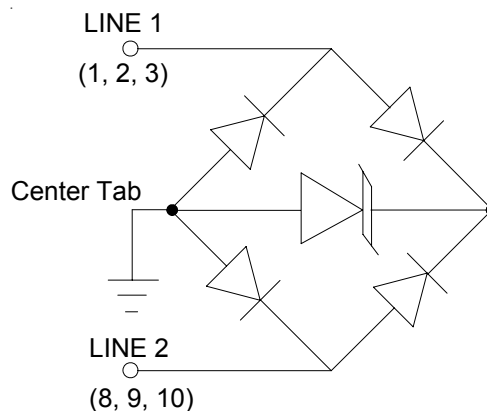
## PROTECTION PRODUCTS

### Applications Information

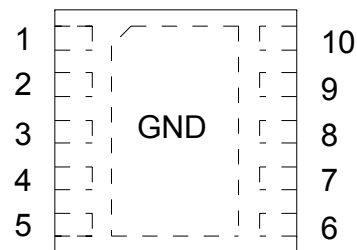
#### Device Connection Options for Protection of Two High-Speed Data Lines

These devices are designed to protect two high-speed data lines (one differential pair) from transient over-voltages which result from lightning and ESD. They can be configured to protect in differential (Line-to-Line) and common (Line-to-Ground) mode. Data line inputs/outputs are connected at pins 1, 2 and 3, and 8, 9 and 10 as shown. For proper operation, pins 1 - 3 must be connected together and pins 8 - 10 must be connected together. Pins 4, 5, 6, and 7 left unconnected. For differential operation, the center tab is also left not connected. For common mode operation, the center tab is connected to ground. The ground connection should be made directly to a ground plane on the board for best results. The use of multiple vias is recommended for reduced ground loop inductance.

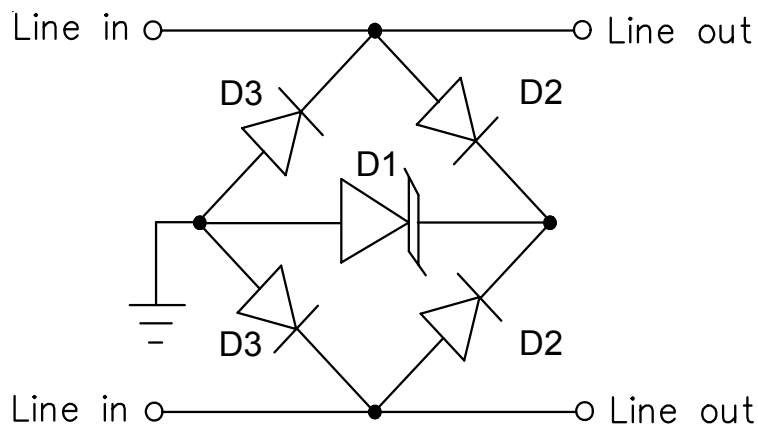
#### Circuit Diagram



#### Pin Configuration (Top Side View)

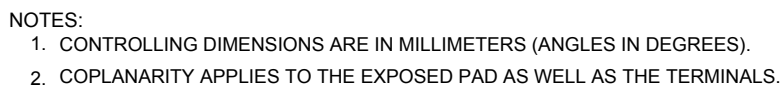


| Pin        | Identification |
|------------|----------------|
| 1, 2, 3    | Line 1 in/out  |
| 8, 9, 10   | Line 2 in/out  |
| 4, 5, 6, 7 | No Connect     |
| Center Tab | Ground         |

**PROTECTION PRODUCTS**
**Applications Information - Spice Model**

**TClamp0602N Spice Model**

| <b>TClamp0602N Spice Parameters</b> |             |                 |                  |                  |
|-------------------------------------|-------------|-----------------|------------------|------------------|
| <b>Parameter</b>                    | <b>Unit</b> | <b>D1 (TVS)</b> | <b>D2 (LCRD)</b> | <b>D3 (LCRD)</b> |
| IS                                  | Amp         | 1.4E-11         | 1.001E-20        | 1.001E-20        |
| BV                                  | Volt        | 8.3             | 150              | 150              |
| VJ                                  | Volt        | 0.56            | 0.59             | 0.59             |
| RS                                  | Ohm         | 0.029           | 0.075            | 0.064            |
| IBV                                 | Amp         | 1E-3            | 1E-3             | 1E-3             |
| CJO                                 | Farad       | 300e-12         | 11.0E-12         | 11.0E-12         |
| TT                                  | sec         | 2.541E-9        | 2.541E-9         | 2.541E-9         |
| M                                   | --          | 0.256           | 0.01             | 0.01             |
| N                                   | --          | 1.1             | 1.1              | 1.1              |
| EG                                  | eV          | 1.11            | 1.11             | 1.11             |

# Outline Drawing - SLP2626P10

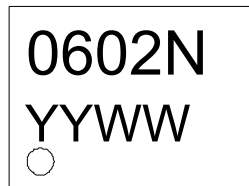


NOTES:

1. THIS LAND PATTERN IS FOR REFERENCE PURPOSES ONLY. CONSULT YOUR MANUFACTURING GROUP TO ENSURE YOUR COMPANY'S MANUFACTURING GUIDELINES ARE MET.

## PROTECTION PRODUCTS

### Marking



YY = year  
WW = Week

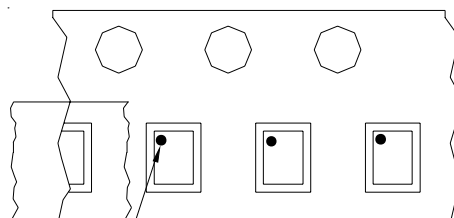
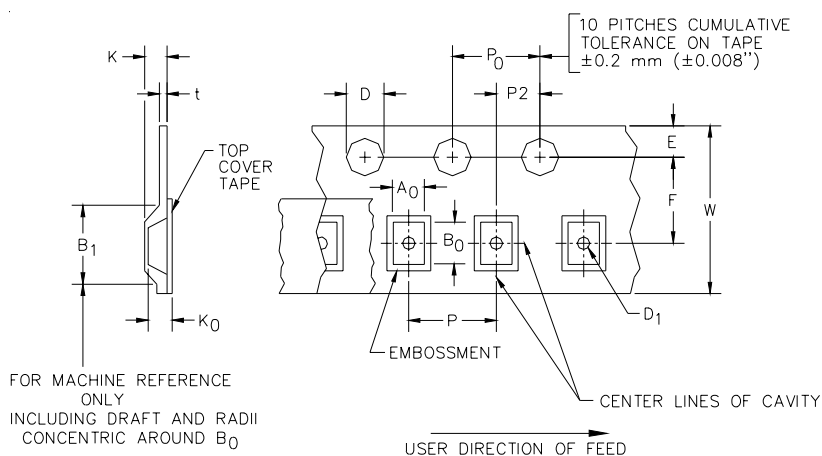
### Ordering Information

| Part Number     | Qty per Reel | Reel Size |
|-----------------|--------------|-----------|
| TClamp0602N.TCT | 3,000        | 7 Inch    |

Note: Lead finish is lead-free NiPdAu

TransClamp and TClamp are marks of Semtech Corporation

### Tape and Reel Specification



Pin 1 Location

User Direction of feed

### Device Orientation in Tape

| A0              | B0              | K0              |
|-----------------|-----------------|-----------------|
| 2.77 +/-0.05 mm | 2.77 +/-0.05 mm | 0.80 +/-0.05 mm |

| Tape Width | B, (Max)      | D                     | D1           | E            | F           | K (MAX) | P          | P0         | P2          | T(MAX) | W                        |
|------------|---------------|-----------------------|--------------|--------------|-------------|---------|------------|------------|-------------|--------|--------------------------|
| 8 mm       | 4.2 mm (.165) | 1.5 + 0.1 mm - 0.0 mm | 1.0 mm ±0.05 | 1.750±.10 mm | 3.5±0.05 mm | 2.4 mm  | 4.0±0.1 mm | 4.0±0.1 mm | 2.0±0.05 mm | 0.4 mm | 8.0 mm + 0.3 mm - 0.1 mm |

### Contact Information

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