

# 300 Watt Transient Voltage Suppressor

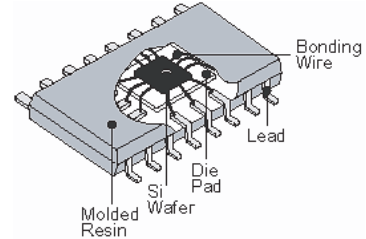
**COMCHIP**  
SMD DIODE SPECIALIST



## CT Series -G (RoHS Device)

### Features

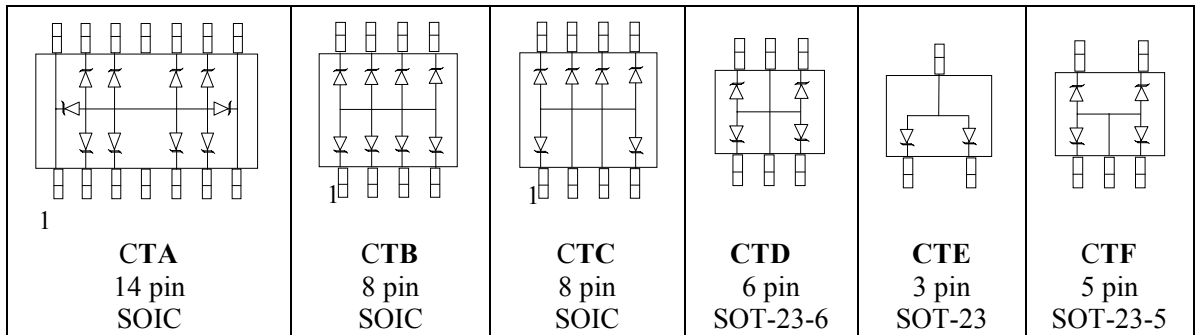
- (16kV) IEC 61000-4-2 rating
- 8/20 us transient rated
- Six working voltages (3.3, 5, 12, 15, 24, 36)



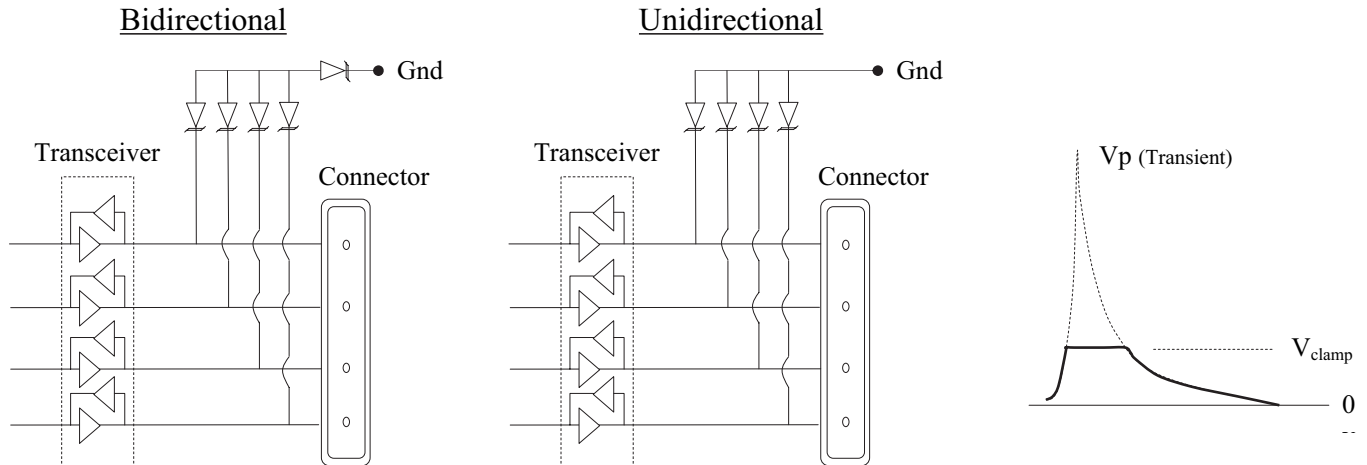
### Applications

- Transient / ESD Suppression
- LAN/WAN
- Peripherals
- Set-Top Boxes

### Circuit Schematic



### Application Schematic



# 300 Watt Transient Voltage Suppressor

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## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

**Specifications:** (  $T_a = 25^{\circ}\text{C}$  )

| Rating                     | Symbol   | Value         | Units              |
|----------------------------|----------|---------------|--------------------|
| Peak Pulse Power (8/20 us) | $P_{PK}$ | 300           | Watts              |
| Operating Temp. Range      | $T_J$    | -55 to +125   | $^{\circ}\text{C}$ |
| Soldering Temperature      | $T_L$    | 260 (10 sec.) | $^{\circ}\text{C}$ |

### 3.3V Volt Characteristics (3V3)

| Symbol   | Characteristic            | Min | Max | Units         | Test Condition           |
|----------|---------------------------|-----|-----|---------------|--------------------------|
| $V_{BD}$ | Reverse breakdown voltage | 4.0 |     | V             | $I_F = 1\text{ ma}$      |
| $I_L$    | Reverse leakage current   |     | 50  | $\mu\text{A}$ | @ $V_{BD} = 3.3\text{v}$ |
| $C_T$    | Capacitance               |     | 350 | pF            | @ 1Mhz                   |
| $V_C$    | Channel clamp voltage     |     | 8   | V             | 8 / 20us, 1 Amp          |
| $I_{PP}$ | Peak pulse current        |     | 17  | Amps          | 8 / 20 us                |

### 5V Volt Characteristics (5V0)

| Symbol   | Characteristic            | Min | Max | Units         | Test Condition         |
|----------|---------------------------|-----|-----|---------------|------------------------|
| $V_{BD}$ | Reverse breakdown voltage | 6.0 |     | V             | $I_F = 1\text{ ma}$    |
| $I_L$    | Reverse leakage current   |     | 10  | $\mu\text{A}$ | @ $V_{BD} = 5\text{v}$ |
| $C_T$    | Capacitance               |     | 350 | pF            | @ 1Mhz                 |
| $V_C$    | Channel clamp voltage     |     | 10  | V             | 8 / 20us, 1 Amp        |
| $I_{PP}$ | Peak pulse current        |     | 17  | Amps          | 8 / 20 us              |

### 12 Volt Characteristics (12V)

| Symbol   | Characteristic            | Min  | Max | Units         | Test Condition          |
|----------|---------------------------|------|-----|---------------|-------------------------|
| $V_{BD}$ | Reverse breakdown voltage | 13.3 |     | V             | $I_F = 1\text{ ma}$     |
| $I_L$    | Reverse leakage current   |      | 1   | $\mu\text{A}$ | @ $V_{BD} = 12\text{v}$ |
| $C_T$    | Capacitance               |      | 120 | pF            | @ 1Mhz                  |
| $V_C$    | Channel clamp voltage     |      | 20  | V             | 8 / 20us, 1 Amp         |
| $I_{PP}$ | Peak pulse current        |      | 12  | Amps          | 8 / 20 us               |

### 15 Volt Characteristics (15V)

| Symbol   | Characteristic            | Min  | Max | Units         | Test Condition          |
|----------|---------------------------|------|-----|---------------|-------------------------|
| $V_{BD}$ | Reverse breakdown voltage | 16.7 |     | V             | $I_F = 1\text{ ma}$     |
| $I_L$    | Reverse leakage current   |      | 1   | $\mu\text{A}$ | @ $V_{BD} = 15\text{v}$ |
| $C_T$    | Capacitance               |      | 75  | pF            | @ 1Mhz                  |
| $V_C$    | Channel clamp voltage     |      | 24  | V             | 8 / 20us, 1 Amp         |
| $I_{PP}$ | Peak pulse current        |      | 10  | Amps          | 8 / 20 us               |

### 24 Volt Characteristics (24V)

| Symbol   | Characteristic            | Min  | Max | Units         | Test Condition          |
|----------|---------------------------|------|-----|---------------|-------------------------|
| $V_{BD}$ | Reverse breakdown voltage | 26.7 |     | V             | $I_F = 1\text{ ma}$     |
| $I_L$    | Reverse leakage current   |      | 1   | $\mu\text{A}$ | @ $V_{BD} = 24\text{v}$ |
| $C_T$    | Capacitance               |      | 50  | pF            | @ 1Mhz                  |
| $V_C$    | Channel clamp voltage     |      | 43  | V             | 8 / 20us, 1 Amp         |
| $I_{PP}$ | Peak pulse current        |      | 5   | Amps          | 8 / 20 us               |

### 36 Volt Characteristics (36V)

| Symbol   | Characteristic            | Min | Max | Units         | Test Condition          |
|----------|---------------------------|-----|-----|---------------|-------------------------|
| $V_{BD}$ | Reverse breakdown voltage | 37  |     | V             | $I_F = 1\text{ ma}$     |
| $I_L$    | Reverse leakage current   |     | 1   | $\mu\text{A}$ | @ $V_{BD} = 36\text{v}$ |
| $C_T$    | Capacitance               |     | 40  | pF            | @ 1Mhz                  |
| $V_C$    | Channel clamp voltage     |     | 40  | V             | 8 / 20us, 1 Amp         |
| $I_{PP}$ | Peak pulse current        |     | 3   | Amps          | 8 / 20 us               |

# 300 Watt Transient Voltage Suppressor

## Ordering Information:

CTA

N14

24V

-G

### Type

CTA  
CTB  
CTC  
CTD  
CTE  
CTF

### Package Code

From table below

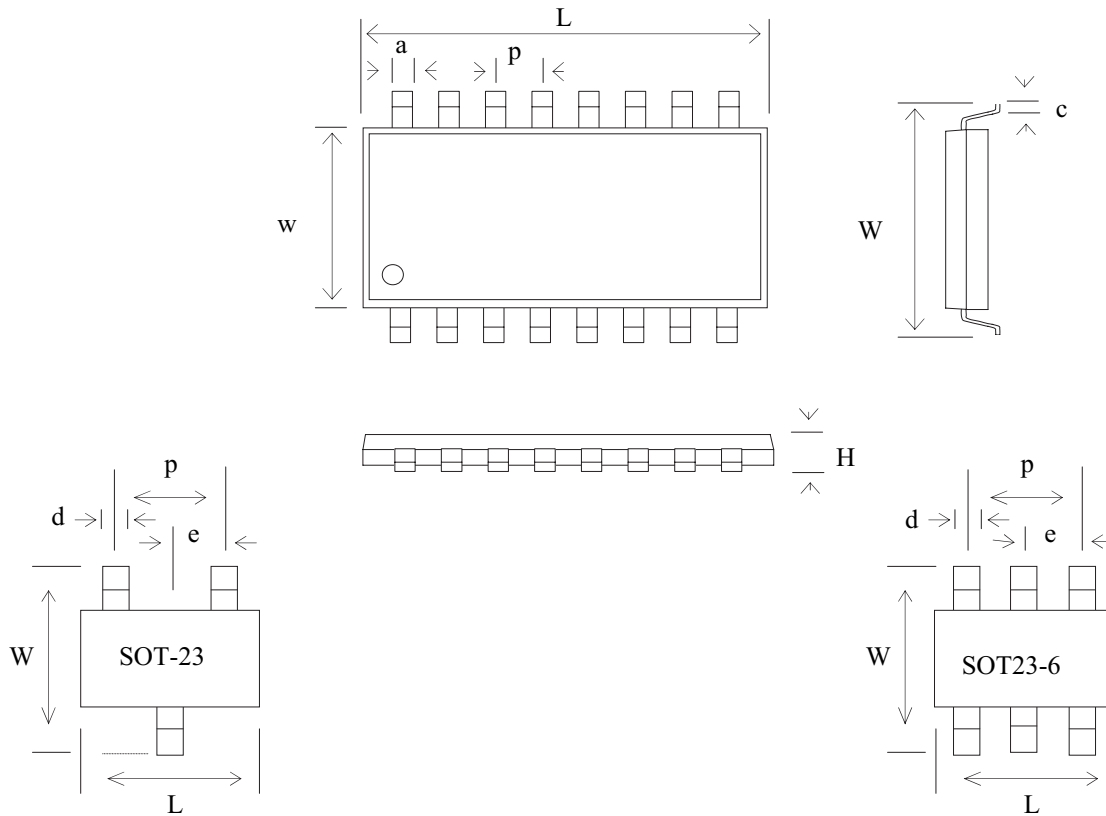
### Voltage

3V3, 5V0, 12V  
15V, 24V, 36V

### RoHS compliant

## Package Information:

Dimensions in ( mm )



| Package Code | Package Power | Number of Pins | $L \pm 0.2$ | $W \pm 0.2$ | $w \pm 0.2$ | $p \pm 0.2$ | $\pm 0.1$ | $A \pm 0.1$ | $\pm 0.1$ | -    |
|--------------|---------------|----------------|-------------|-------------|-------------|-------------|-----------|-------------|-----------|------|
| N08          | 0.4 w         | 08             | 4.83        | 5.99        | 3.81        | 1.60        | 1.27      | 0.41        | 0.66      | 0.95 |
| N14          | 0.6 w         | 14             | 8.66        | 5.99        | 3.81        | 1.60        | 1.27      | 0.41        | 0.66      | 0.95 |
| S03          | 0.225 w       | 3              | 2.92        | 2.30        | 0.95        | 1.91        | 0.95      | 0.53        | 0.43      | 0.95 |
| S05 / S06    | 0.225 w       | 6              | 2.92        | 2.80        | 1.20        | 1.91        | 0.95      | 0.53        | 0.43      | 0.95 |