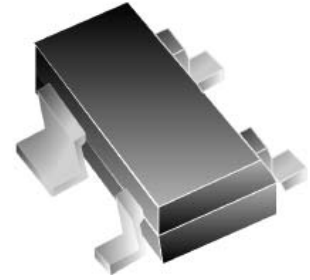
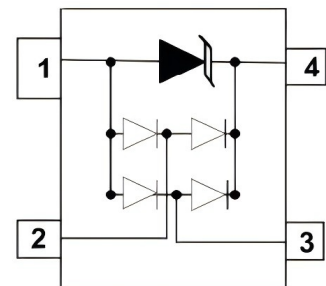


**FEATURES**

- ✧ 200W peak pulse power(8/20 $\mu$ s)
- ✧ Ultra low leakage: nA level
- ✧ Operating voltage: 5V
- ✧ Low capacitance for high-speed data line
- ✧ Low clamping voltage
- ✧ Compliant to Halogen-free

**SOT-143****MAIN APPLICATIONS**

- ✧ Video Line Protection
- ✧ Wireless Systems
- ✧ Ethernet 10BaseT
- ✧ I2C Bus Protection
- ✧ Portable Instrumentation
- ✧ LAN/WAN equipment
- ✧ High-Speed Data Lines
- ✧ Multi-Protocol Serial Transceivers
- ✧ ISDN S/T Interface

**PIN Configuration****PROTECTION SOLUTION TO MEET**

- ✧ IEC61000-4-2 (ESD)  $\pm 30$ kV (air),  $\pm 30$ kV (contact)
- ✧ IEC61000-4-5 (Lightning) 12A (8/20 $\mu$ s)

**MECHANICAL CHARACTERISTICS**

- ✧ Package: SOT-143
- ✧ Lead Finish: Matte Tin
- ✧ Terminal Connections: See Diagram Below
- ✧ Marking code: B T05

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C unless otherwise noted)

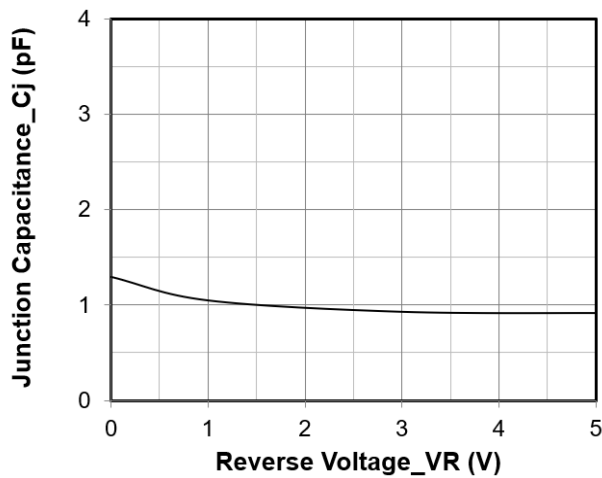
| Parameter                                                      | Symbol           | Value       | Unit |
|----------------------------------------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20μs), VCC pin to ground                   | Ppk              | 450         | W    |
| Peak Pulse Power (8/20μs), any I/O pin to ground               | Ppk              | 200         | W    |
| Peak Pulse Current (8/20μs), VCC pin to ground                 | I <sub>PP</sub>  | 25          | A    |
| Peak Pulse Current (8/20μs), any I/O pin to ground             | I <sub>PP</sub>  | 12          | A    |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | V <sub>ESD</sub> | ±30<br>±30  | kV   |
| Operating Temperature Range                                    | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range                                      | T <sub>stg</sub> | -55 to +150 | °C   |

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise noted)

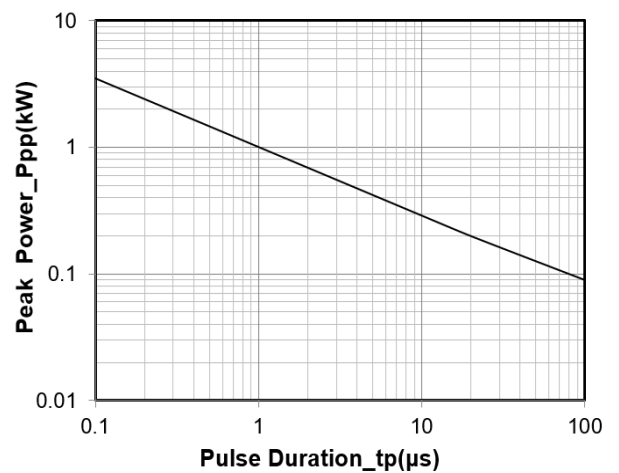
| Parameter               | Symbol           | Min | Typ | Max | Unit | Test Condition                                                   |
|-------------------------|------------------|-----|-----|-----|------|------------------------------------------------------------------|
| Reverse Working Voltage | V <sub>RWM</sub> |     |     | 5   | V    | Any I/O pin to ground                                            |
| Breakdown Voltage       | V <sub>BR</sub>  | 6   |     |     | V    | I <sub>T</sub> = 1mA, any I/O pin to ground                      |
| Reverse Leakage Current | I <sub>R</sub>   |     |     | 0.5 | μA   | V <sub>RWM</sub> = 5V, any I/O pin to ground                     |
| Clamping Voltage        | V <sub>C</sub>   |     | 15  | 18  | V    | I <sub>PP</sub> = 25A (8 x 20μs pulse),<br>VCC pin to ground     |
| Clamping Voltage        | V <sub>C</sub>   |     | 12  | 17  | V    | I <sub>PP</sub> = 12A (8 x 20μs pulse),<br>any I/O pin to ground |
| Junction Capacitance    | C <sub>J</sub>   |     | 0.6 | 1.0 | pF   | V <sub>R</sub> = 0V, f = 1MHz,<br>between I/O pins               |
| Junction Capacitance    | C <sub>J</sub>   |     | 1.3 | 2.0 | pF   | V <sub>R</sub> = 0V, f = 1MHz,<br>any I/O pin to ground          |

Note 1: I/O pins are Pin 2, 3 V<sub>CC</sub> pins are Pin 4

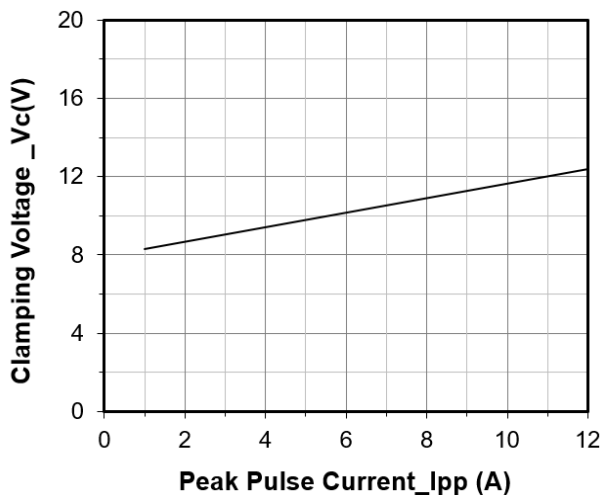
### RATINGS CHARACTERISTICS CURVES ( $T_A=25^\circ\text{C}$ , unless otherwise noted)



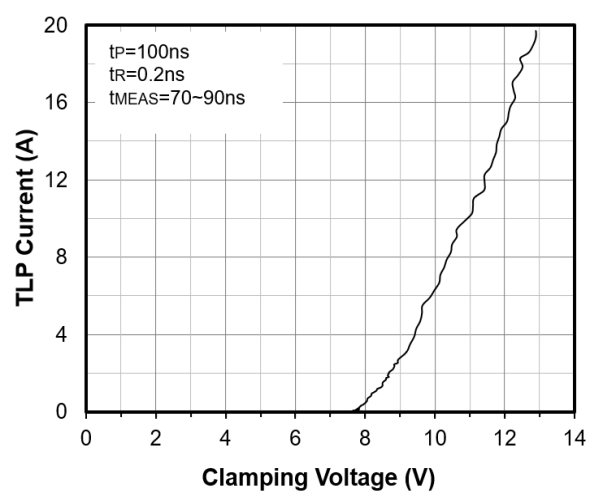
Junction Capacitance vs. Reverse Voltage



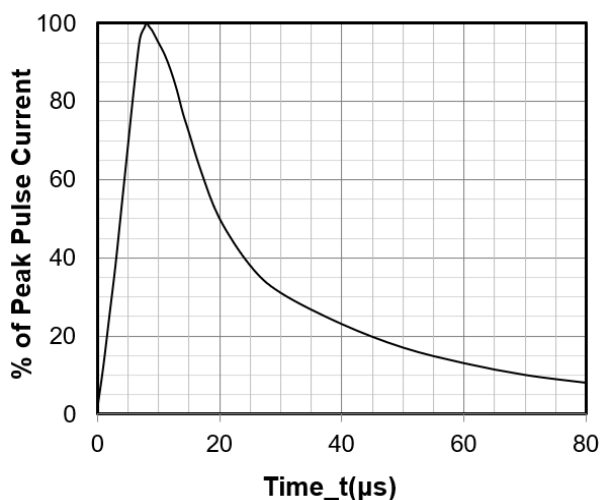
Peak Pulse Power vs. Pulse Time



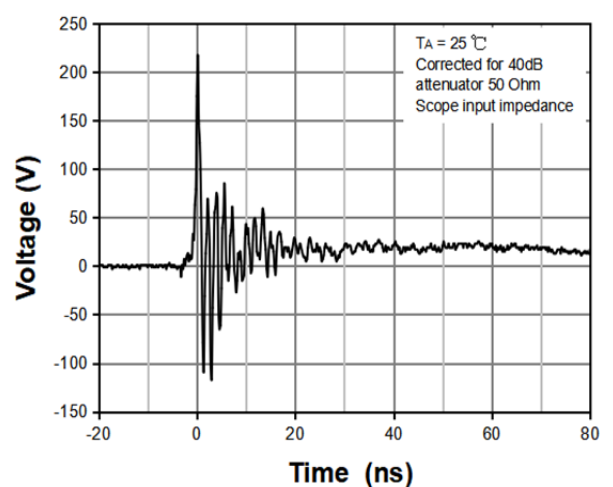
Clamping Voltage vs. Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )



TLP Measurement

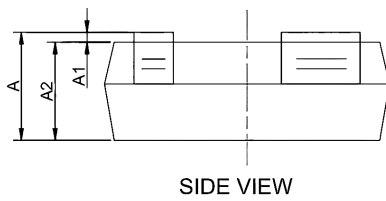
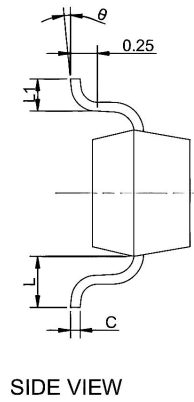
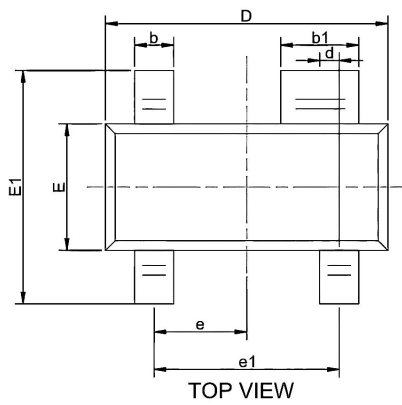


8 X 20 $\mu\text{s}$  Pulse Waveform



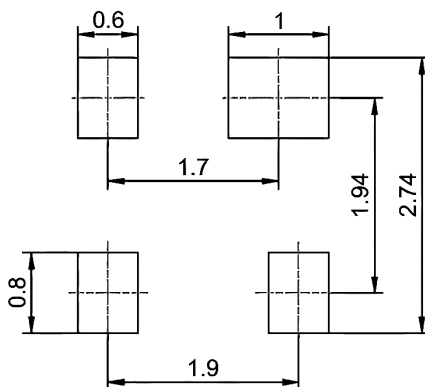
ESD Clamping Voltage  
8 kV Contact per IEC61000-4-2

### SOT-143 PACKAGE MECHANICAL DATA



| SYS | MILLIMETERS |      |      |
|-----|-------------|------|------|
|     | MIN         | NOM  | MAX  |
| A   | 0.90        | -    | 1.15 |
| A1  | 0.00        | 0.05 | 0.10 |
| A2  | 0.90        | -    | 1.05 |
| b   | 0.30        | 0.40 | 0.50 |
| b1  | 0.75        | -    | 0.90 |
| c   | 0.08        | -    | 0.15 |
| D   | 2.80        | 2.90 | 3.00 |
| d   | 0.20 Typ    |      |      |
| E   | 1.20        | 1.30 | 1.40 |
| E1  | 2.25        | 2.40 | 2.55 |
| e   | 0.95 Typ    |      |      |
| e1  | 1.80        | 1.90 | 2.00 |
| L   | 0.55 Ref    |      |      |
| L1  | 0.30        | 0.40 | 0.50 |
| Θ   | 0°          | -    | 8°   |

### SUGGESTED LAND PATTERN



Unit(mm)