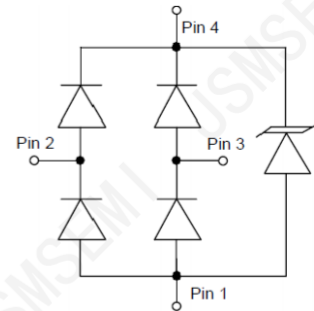


## Features

- ◆ 45W (8/20 $\mu$ s) Peak Pulse Power
- ◆ Low Capacitance ESD Protection
- ◆ SOT-143 Package
- ◆ RoHS Compliant
- ◆ Matte Tin Lead finish (Pb-Free)
- ◆ Protect Two High Speed Data Lines and Vcc
- ◆ Meet IEC61000-4-2 Level 4:

Contact Discharge > 15kV

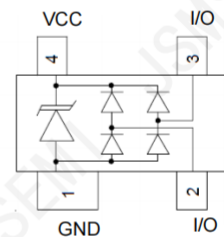
Air Discharge > 20kV



Circuit Diagram

## Applications

- ◆ I<sup>2</sup>C Bus Protection
- ◆ ISDN S/T Interface
- ◆ Ethernet 10/100 BaseT
- ◆ Portable Electronics
- ◆ Video Line Protection
- ◆ WAN/LAN Equipment
- ◆ Microcontroller Input Protection
- ◆ USB Power and Data Line Protection
- ◆ T1/E1 Secondary IC Side Protection



PIN Diagram

## Ordering information

| Device             | Package | Reel Size | Qty / Reel |
|--------------------|---------|-----------|------------|
| PRTR5V0U2X,215-JSM | SOT-143 | 7 inch    | 3000       |

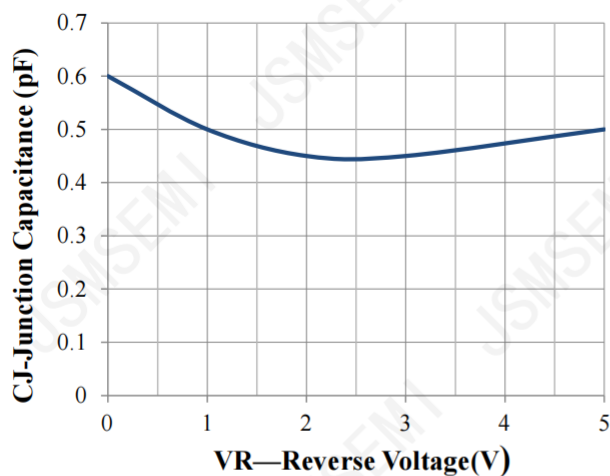
## Absolute Maximum Ratings (TA =25°C unless otherwise specified)

| Parameter                                 | Symbol               | Value       | Unit |
|-------------------------------------------|----------------------|-------------|------|
| Peak Pulse Power (8/20 $\mu$ s,I/O-GND)   | Ppk                  | 45          | W    |
| Peak Pulse Power (8/20 $\mu$ s,Vcc-GND)   | Ppk                  | 60          | W    |
| Peak Pulse Current (8/20 $\mu$ s,I/O-GND) | IPP                  | 3           | A    |
| Peak Pulse Current (8/20 $\mu$ s,Vcc-GND) | IPP                  | 4           | A    |
| ESD per IEC 61000-4-2 (Air)               | V <sub>ESD,VDD</sub> | ±20         | kV   |
| ESD per IEC 61000-4-2 (Contact)           | V <sub>ESD,I/O</sub> | ±15         | kV   |
| Operating Temperature Range               | TJ                   | -55 to +125 | °C   |
| Storage Temperature Range                 | Tstg                 | -55 to +150 | °C   |

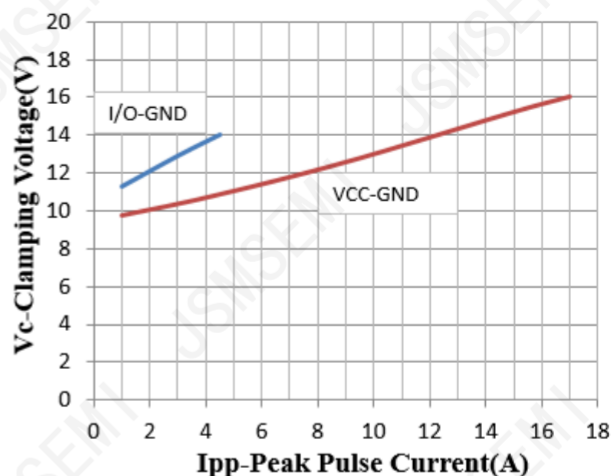
## Electrical Characteristics (TA =25°C unless otherwise specified)

| Parameter                 | Symbol    | Test Condition                                         | Min | Typ  | Max  | Unit    |
|---------------------------|-----------|--------------------------------------------------------|-----|------|------|---------|
| Reverse Working Voltage   | $V_{RWM}$ | Pin 5 to GND, I/O-GND                                  |     |      | 5.0  | V       |
| Breakdown Voltage         | $V_{BR}$  | $I_T = 1mA$ (Pin 5 to GND, I/O-GND)                    | 6.0 | 7.5  | 8.5  | V       |
| Reverse Leakage Current   | $I_R$     | $V_{RWM} = 5.0V$                                       |     |      | 0.5  | $\mu A$ |
| Forward Breakdown Voltage | $V_F$     | $I_F = 15mA$ , GND to Pin 5/I/O                        |     | 0.8  | 1.0  | V       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 3A$ (8 x 20 $\mu s$ pulse, I/O to GND)       |     | 14.0 | 15.0 | V       |
| Clamping Voltage          | $V_C$     | $I_{PP} = 4A$ (8 x 20 $\mu s$ pulse, Pin 5 to GND)     |     | 16.0 | 18.0 | V       |
| Junction Capacitance      | $C_J$     | $V_{pin5} = 5V$ , I/O=0V,<br>$f = 1MHz$ , I/O-GND      |     | 0.6  | 0.7  | pF      |
| Junction Capacitance      | $C_J$     | $V_{pin5} = 5V$ , I/O=0V,<br>$f = 1MHz$ , I/O-I/O pins |     | 0.3  | 0.4  | pF      |

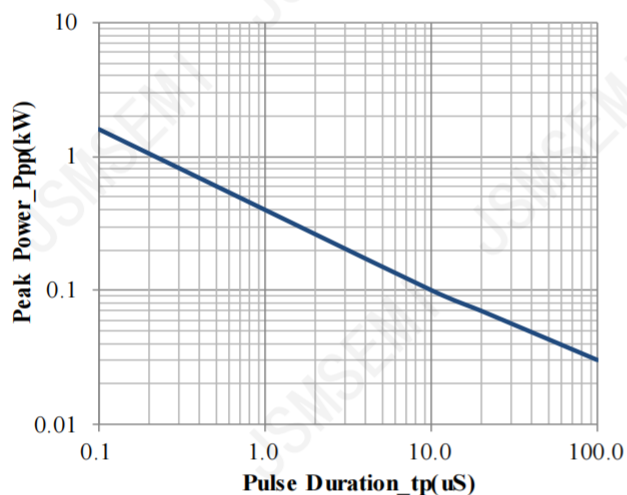
## Typical Performance Characteristics (TA =25°C unless otherwise Specified)



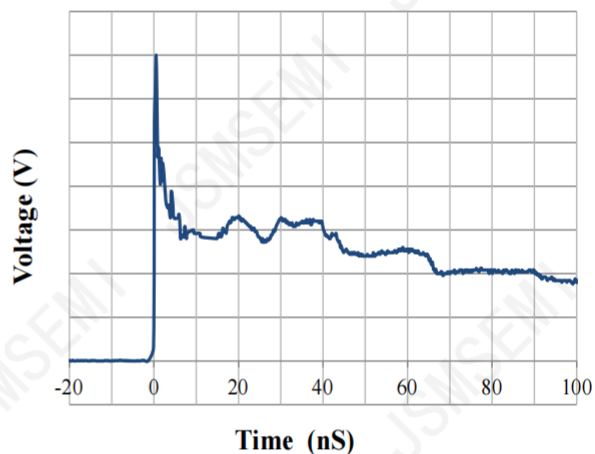
Junction Capacitance vs. Reverse Voltage



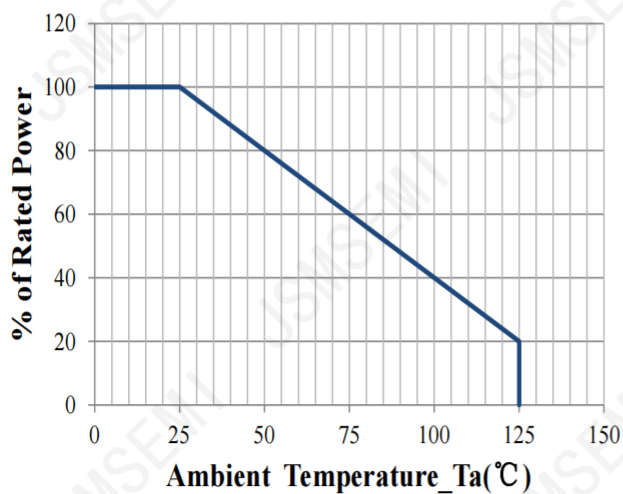
Clamping Voltage vs. Peak Pulse Current



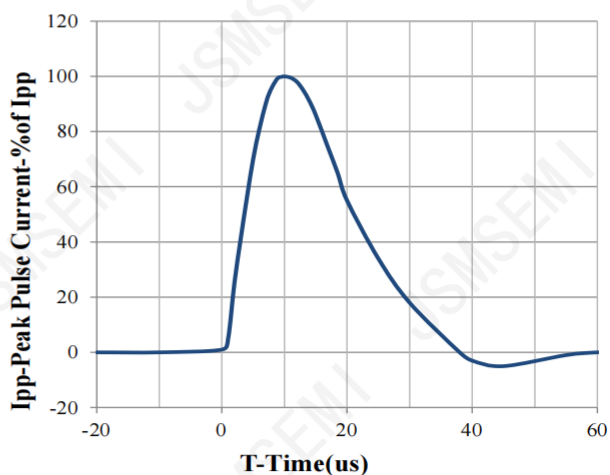
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



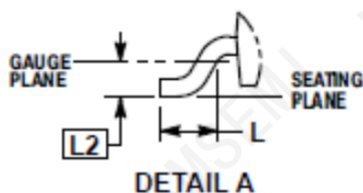
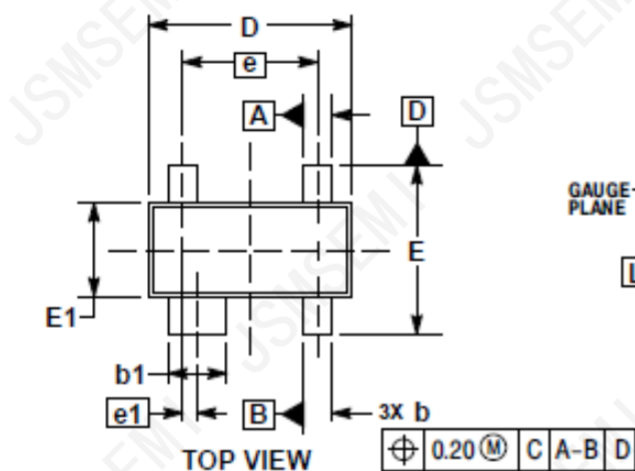
Power Derating Curve



8 X 20us Pulse Waveform

# Package Information

SOT-143



| DIM | MILLIMETERS |      |
|-----|-------------|------|
|     | MIN         | MAX  |
| A   | 0.80        | 1.12 |
| A1  | 0.01        | 0.15 |
| b   | 0.30        | 0.51 |
| b1  | 0.76        | 0.94 |
| c   | 0.08        | 0.20 |
| D   | 2.80        | 3.05 |
| E   | 2.10        | 2.64 |
| E1  | 1.20        | 1.40 |
| e   | 1.92 BSC    |      |
| e1  | 0.20 BSC    |      |
| L   | 0.35        | 0.70 |
| L2  | 0.25 BSC    |      |

