

### Description

The AU2001P4-3 is a high power TVS, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive lines. The AU2001P4-3 complies with the IEC 61000-4-2 (ESD) with  $\pm 30\text{kV}$  air and  $\pm 30\text{kV}$  contact discharge. It is assembled into a 3-pin DFN2020-3 lead-free package. Each device will protect one line. The combination of small size, and high surge capability makes them ideal for use in applications such as cellular phones, LCD displays, USB, and multi media card interfaces.

### Features

- 6500W peak pulse power (8/20 $\mu\text{s}$ )
- Low leakage: nA level
- Operating voltage: 18V
- Ultra low clamping voltage
- One power line protects
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30\text{kV}$
    - Contact discharge:  $\pm 30\text{kV}$
  - IEC61000-4-5 (Lightning) 145A (8/20 $\mu\text{s}$ )
- RoHS Compliant

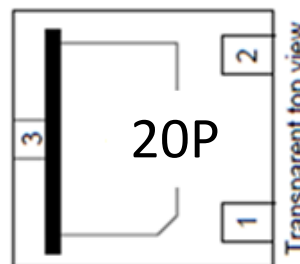
### Mechanical Characteristics

- Package: DFN2020-3
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

### Applications

- Power Management
- Industrial Application
- Power Supply Protection

### Marking Information

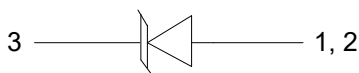


**20P: Device Marking Code**

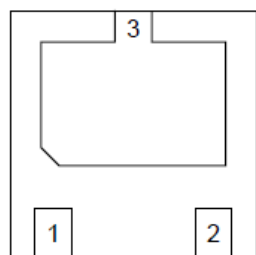
### Ordering Information

| Part Number | Packaging        | Reel Size |
|-------------|------------------|-----------|
| AU2001P4-3  | 3000/Tape & Reel | 7 inch    |

### Dimensions and Pin Configuration



Circuit Diagram



Transparent top view

Pin Schematic

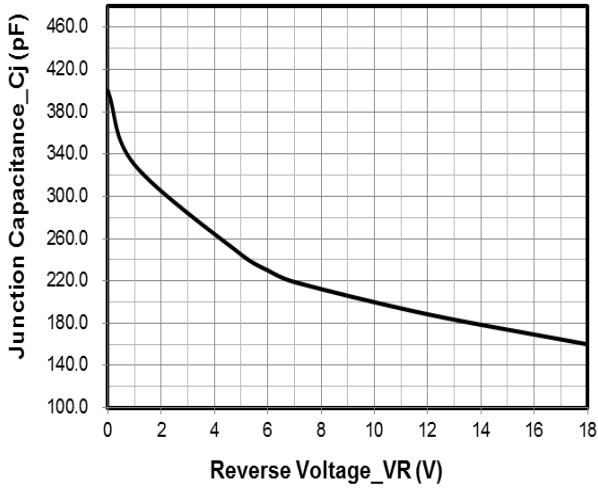
**Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

| Parameter  | Symbol           | Value                | Unit             |
|--|------------------|----------------------|------------------|
| Peak Pulse Power (8/20 $\mu\text{s}$ )                         | Ppk              | 6500                 | W                |
| Peak Pulse Current (8/20 $\mu\text{s}$ )                       | I <sub>PP</sub>  | 145                  | A                |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | V <sub>ESD</sub> | $\pm 30$<br>$\pm 30$ | kV               |
| Operating Temperature Range                                    | T <sub>J</sub>   | -55 to +125          | $^\circ\text{C}$ |
| Storage Temperature Range                                      | T <sub>stg</sub> | -55 to +150          | $^\circ\text{C}$ |

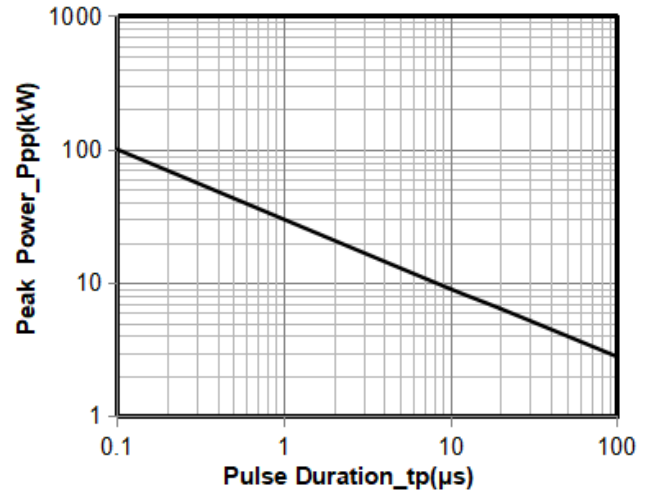
**Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

| Parameter               | Symbol           | Min | Typ | Max | Unit          | Test Condition                                      |
|-------------------------|------------------|-----|-----|-----|---------------|---|
| Reverse Working Voltage | V <sub>RWM</sub> |     |     | 20  | V             |   |
| Breakdown Voltage       | V <sub>BR</sub>  | 22  |     |     | V             | I <sub>T</sub> = 1mA                                |
| Reverse Leakage Current | I <sub>R</sub>   |     |     | 0.5 | $\mu\text{A}$ | V <sub>RWM</sub> = 20V                              |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 28  | V             | I <sub>PP</sub> = 20A (8 x 20 $\mu\text{s}$ pulse)  |
| Clamping Voltage        | V <sub>C</sub>   |     |     | 45  | V             | I <sub>PP</sub> = 145A (8 x 20 $\mu\text{s}$ pulse) |
| Junction Capacitance    | C <sub>J</sub>   |     |     | 440 | pF            | V <sub>R</sub> = 0V, f = 1MHz                       |

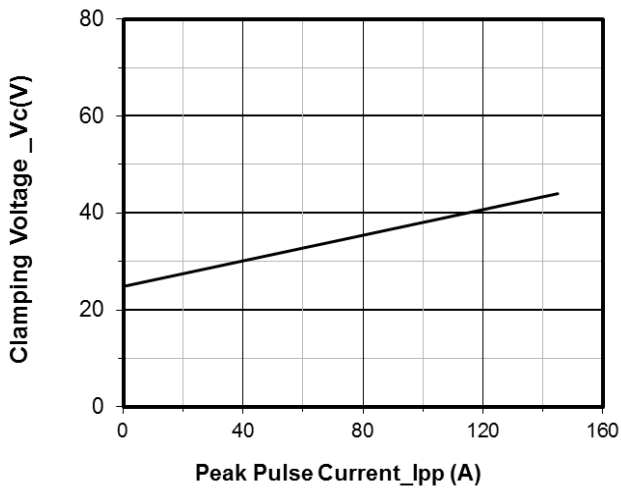
**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**



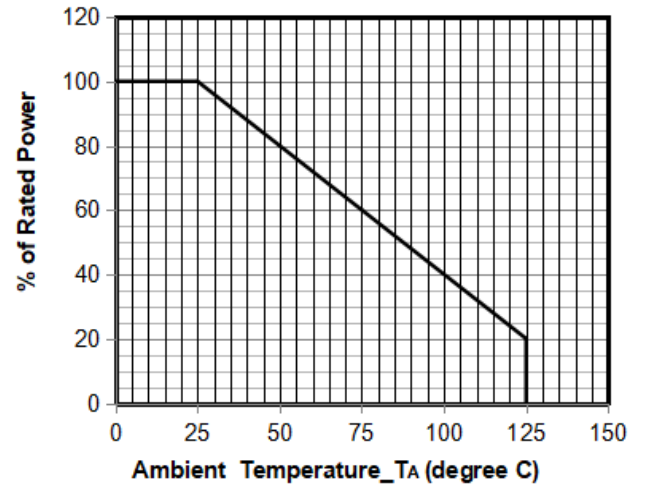
**Novction Capacitance vs. Reverse Voltage**



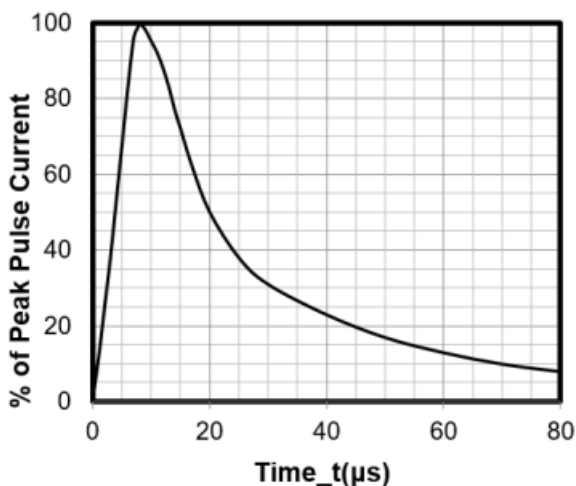
**Peak Pulse Power vs. Pulse Time**



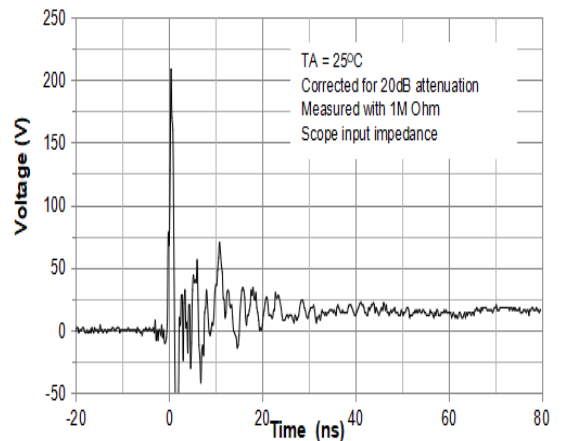
**Clamping Voltage vs. Peak Pulse Current**



**Power Derating Curve**



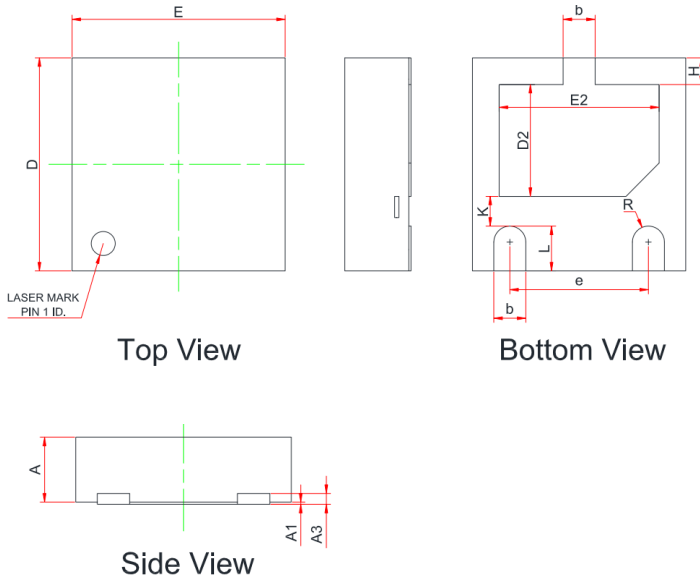
**8 X 20 $\mu\text{s}$  Pulse Waveform**



**ESD Clamping Voltage**

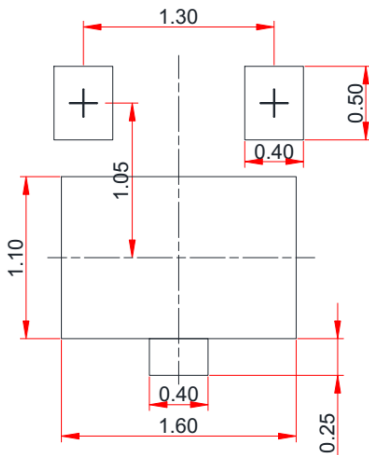
**8 kV Contact per IEC61000-4-2**

### DFN2020-3 Package Outline Drawing



| SYM | MILLIMETERS |      |      |
|-----|-------------|------|------|
|     | MIN         | NOM  | MAX  |
| A   | 0.55        | 0.60 | 0.65 |
| A1  | 0.00        | 0.02 | 0.05 |
| A3  | 0.10REF.    |      |      |
| b   | 0.25        | --   | 0.35 |
| D   | 1.90        | --   | 2.10 |
| E   | 1.90        | --   | 2.10 |
| D2  | 0.95        | --   | 1.15 |
| E2  | 1.40        | --   | 1.60 |
| e   | 1.20        |      | 1.40 |
| H   | 0.20        | --   | 0.30 |
| K   | 0.20        |      | 0.40 |
| L   | 0.35        | --   | 0.45 |
| R   | 0.13        | --   | --   |

### Suggested Land Pattern



Unit: mm

### Contact Information

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