



## DW36D-AT-S ESD Protection Diode

### Feature

- Uni-directional ESD protection of one line
- 380Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Working voltage: 36V
- Junction capacitance: 28pF(Typ)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2  $\pm 30kV$  contact  $\pm 30kV$  air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 6A (8/20 $\mu s$ )

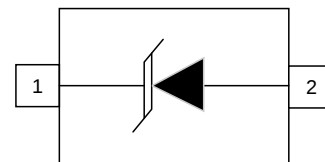
### Application

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation

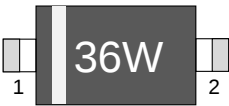
### Mechanical Data

- Package: SOD-323
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

### Circuit Diagram



### Ordering Information

| Part Number | Package | Marking                                                                             | Packing          | Reel Size |
|-------------|---------|-------------------------------------------------------------------------------------|------------------|-----------|
| DW36D-AT-S  | SOD-323 |  | 3000 Tape & Reel | 7 inches  |



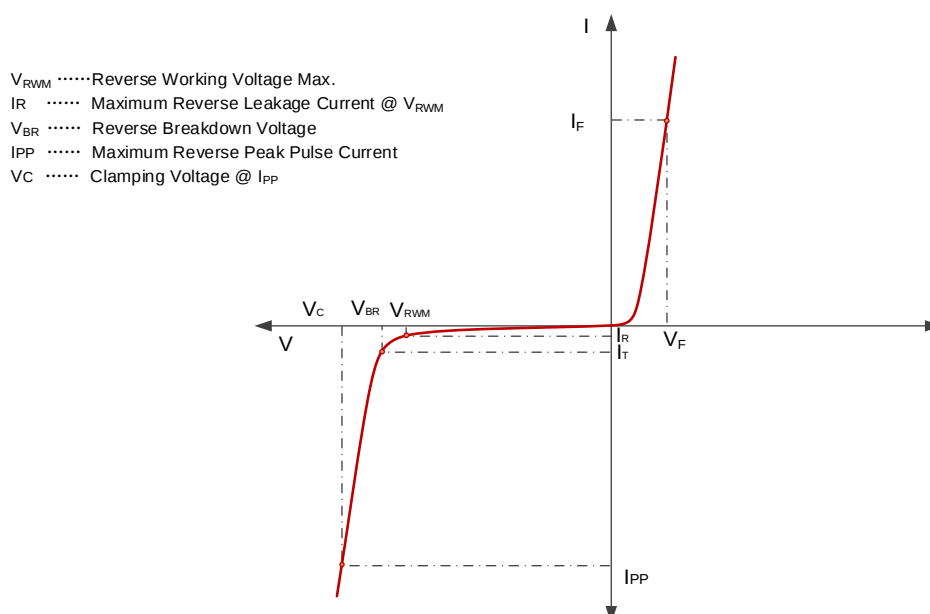
### Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                                                      | Symbol    | Value           | Units              |
|----------------------------------------------------------------|-----------|-----------------|--------------------|
| Peak Pulse Power ( $t_p=8/20\mu\text{s}$ )                     | $P_{PP}$  | 380             | Watts              |
| Peak Pulse Current ( $t_p=8/20\mu\text{s}$ ) (note1)           | $I_{pp}$  | 6               | A                  |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | 30<br>30        | kV                 |
| Lead Soldering Temperature                                     | $T_L$     | 260 (10seconds) | $^{\circ}\text{C}$ |
| Junction Temperature                                           | $T_J$     | -55 to + 125    | $^{\circ}\text{C}$ |
| Storage Temperature                                            | $T_{stg}$ | -55 to + 125    | $^{\circ}\text{C}$ |

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

| Parameter                 | Symbol    | Conditions                                 | Min | Typical | Max | Units         |
|---------------------------|-----------|--------------------------------------------|-----|---------|-----|---------------|
| Reverse Stand-Off Voltage | $V_{RWM}$ |                                            |     |         | 36  | V             |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T=1\text{mA}$                           | 40  |         |     | V             |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=36\text{V}, T=25^{\circ}\text{C}$ |     |         | 0.5 | $\mu\text{A}$ |
| Forward Voltage           | $V_F$     | $I_F=10\text{mA}$                          | 0.6 |         | 1.2 | V             |
| Clamping Voltage          | $V_C$     | $I_{PP}=6\text{A}, t_p=8/20\mu\text{s}$    |     |         | 63  | V             |
| Junction Capacitance      | $C_J$     | $V_R=0\text{V}, f=1\text{MHz}$             |     | 28      | 35  | pF            |

### Electrical Parameters





## Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

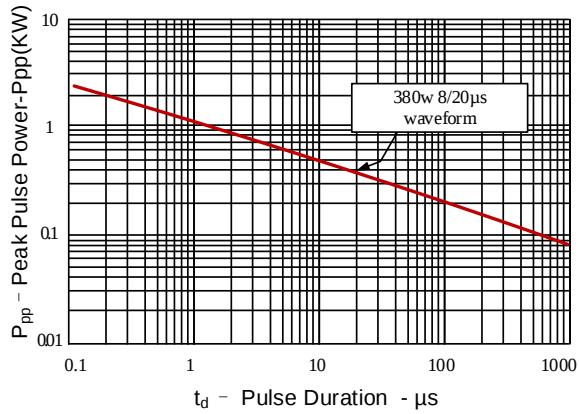


Figure 2: Power Derating Curve

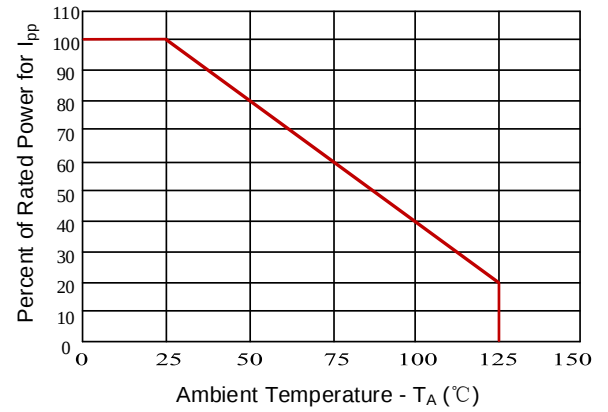


Figure3: Pulse Waveform

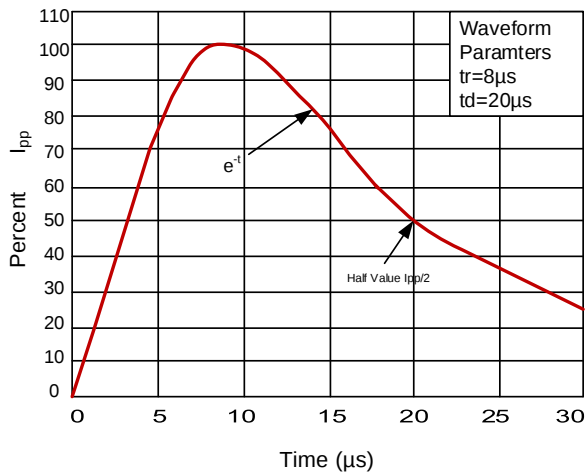
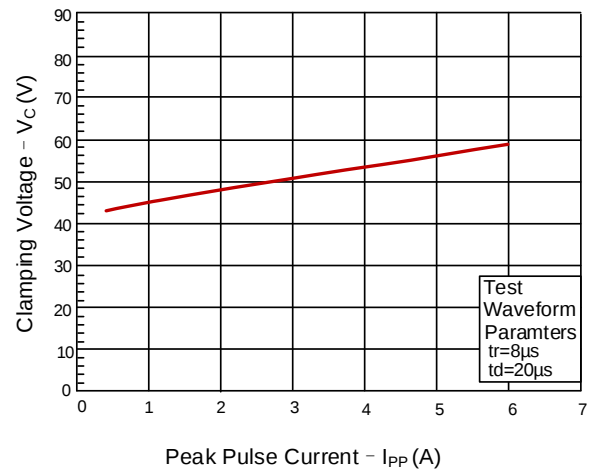
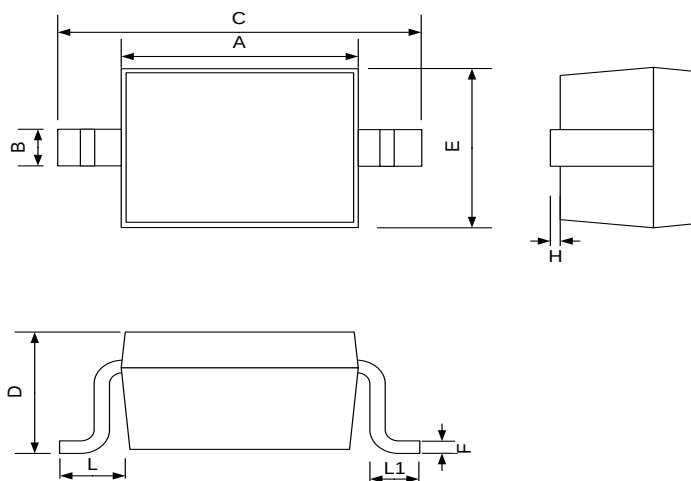


Figure 4: Clamping Voltage vs. I\_pp





## Outline Drawing – SOD-323



| COMMON DIMENSION |            |       |          |       |
|------------------|------------|-------|----------|-------|
| SYMBOL           | MILLIMETER |       | INCHES   |       |
|                  | MIN.       | MAX.  | MIN.     | MAX.  |
| A                | 1.600      | 1.800 | 0.063    | 0.071 |
| B                | 0.250      | 0.350 | 0.010    | 0.014 |
| C                | 2.500      | 2.700 | 0.098    | 0.106 |
| D                |            | 1.000 |          | 0.039 |
| E                | 1.200      | 1.400 | 0.047    | 0.055 |
| F                | 0.080      | 0.150 | 0.003    | 0.006 |
| L                | 0.475REF   |       | 0.019REF |       |
| L1               | 0.250      | 0.400 | 0.010    | 0.016 |
| H                | 0.000      | 0.100 | 0.000    | 0.004 |