



## DWS24D5 ESD Protection Diode

### Feature

- Uni-directional ESD protection of one line
- 240Watts peak pulse power ( $t_p = 8/20\mu s$ )
- Working voltage: 24V
- Junction Capacitance: 26pF(Typ)
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2  $\pm 30kV$  contact  $\pm 30kV$  air
- IEC 61000-4-5 (Lightning) 6A (8/20 $\mu s$ )
- IEC61000-4-4(EFT) 40A (5/50ns)

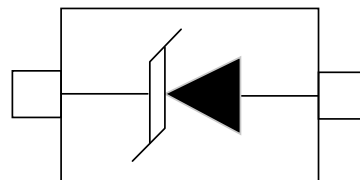
### Application

- Cellular handsets and accessories
- Personal Digital Assistants(PDA's)
- Audio and video equipment
- Portable Instrumentation
- Pagers Peripherals

### Mechanical Data

- Package: SOD-523
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

### Schematic & PIN Configuration



### Ordering Information

| Part Number | Package | Marking                                                                             | QTY per Reel | Reel Size |
|-------------|---------|-------------------------------------------------------------------------------------|--------------|-----------|
| DWS24D5     | SOD-523 |  | 5000 pcs     | 7 inches  |



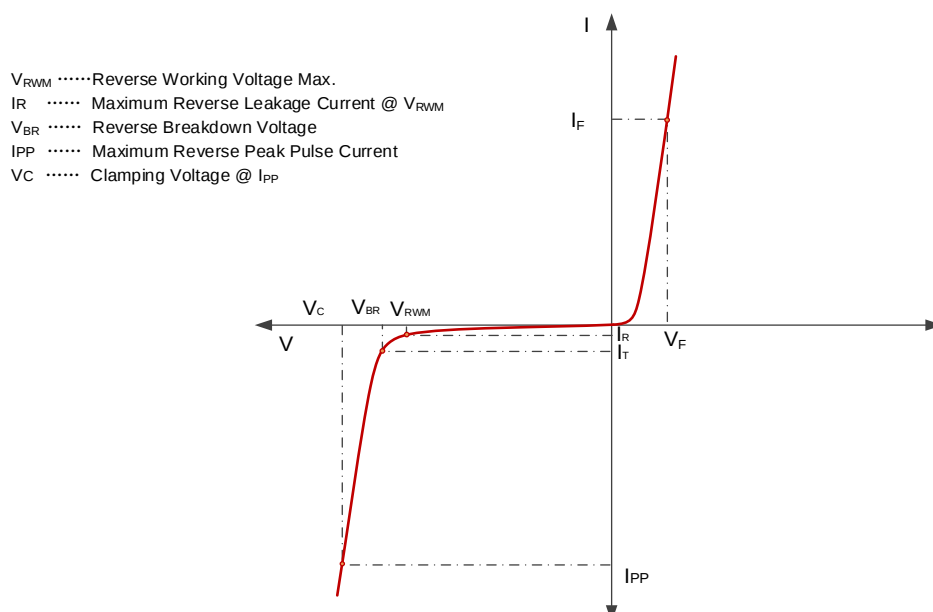
### Absolute Maximum Ratings ( $T_A=25^{\circ}\text{C}$ unless otherwise specified)

| Parameter                                                      | Symbol    | Value                | Units              |
|----------------------------------------------------------------|-----------|----------------------|--------------------|
| Peak Pulse Power ( $t_p=8/20\mu\text{s}$ )                     | $P_{PP}$  | 240                  | Watts              |
| Peak Pulse Current ( $t_p=8/20\mu\text{s}$ )                   | $I_{PP}$  | 6                    | A                  |
| ESD per IEC 61000-4-2 (Air)<br>ESD per IEC 61000-4-2 (Contact) | $V_{ESD}$ | $\pm 30$<br>$\pm 30$ | 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 | $V_{RWM}$ |                                            |      |         | 24  | V             |
| Reverse Breakdown Voltage | $V_{BR}$  | $I_T=1\text{mA}$                           | 26.7 |         |     |               |
| Reverse Leakage Current   | $I_R$     | $V_{RWM}=24\text{V}, T=25^{\circ}\text{C}$ |      |         | 0.5 | $\mu\text{A}$ |
| Forward Voltage           | $V_F$     | $I_F=10\text{mA}$                          | 0.6  |         | 1.2 | V             |
| Clamping Voltage          | $V_C$     | $I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$    |      |         | 29  | V             |
| Clamping Voltage          | $V_C$     | $I_{PP}=6\text{A}, t_p=8/20\mu\text{s}$    |      |         | 40  | V             |
| Junction Capacitance      | $C_j$     | $V_R = 0\text{V}, f = 1\text{MHz}$         |      | 26      | 35  | pF            |

### Electrical Parameters





## Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

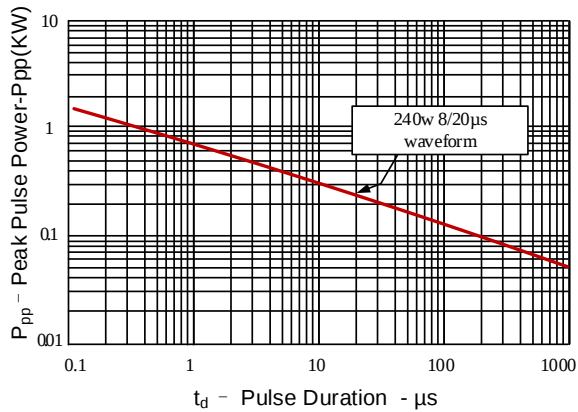


Figure 2: Power Derating Curve

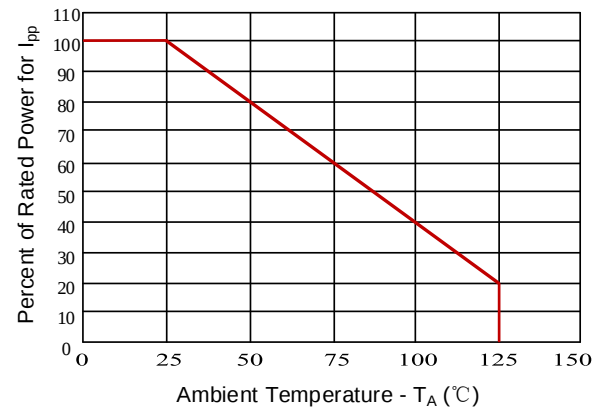


Figure3: Pulse Waveform

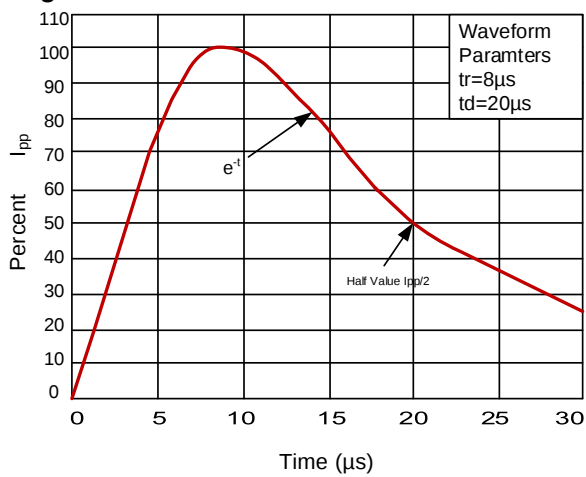
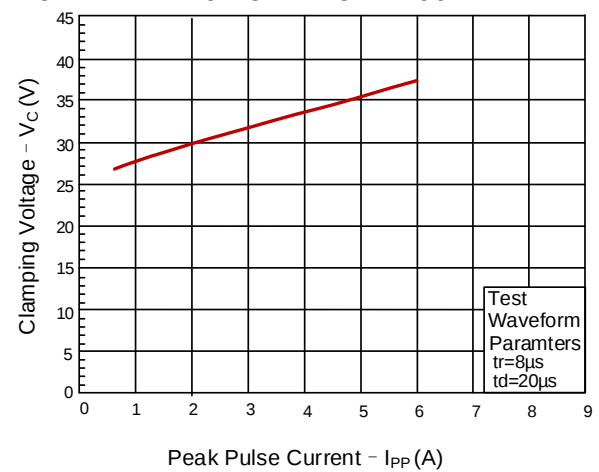
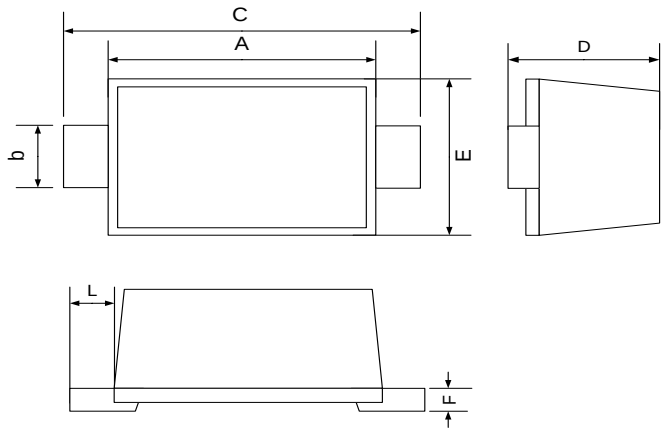


Figure 4: Clamping Voltage vs.  $I_{pp}$





SOD-523 Outline Drawing



| Common Dimension (mm) |        |       |       |
|-----------------------|--------|-------|-------|
| PKG                   | SOD523 |       |       |
| REF.                  | MIN.   | NOM.  | MAX.  |
| A                     | 1.100  | 1.200 | 1.300 |
| b                     | 0.250  | 0.300 | 0.350 |
| C                     | 1.500  | 1.600 | 1.700 |
| D                     | 0.510  | 0.650 | 0.770 |
| E                     | 0.700  | 0.800 | 0.900 |
| F                     | 0.070  | 0.140 | 0.200 |
| L                     |        | 0.200 |       |