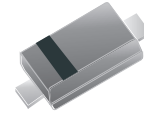


RoHS Device  
Halogen Free

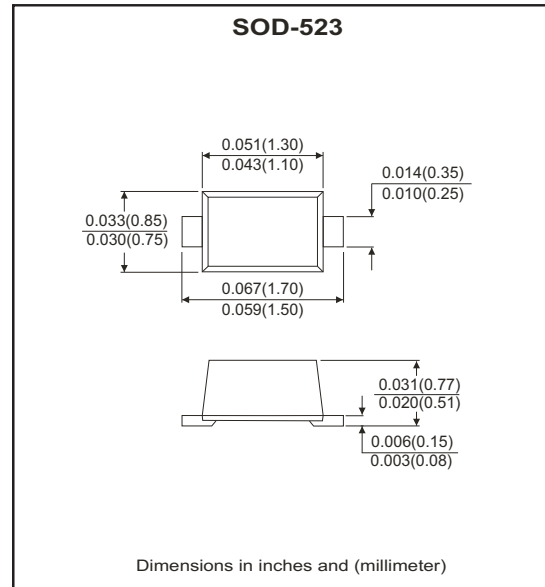


### Features

- Bi-directional ESD protection of one line.
- IEC61000-4-2 Level 4 ESD protection.
- JESD22-A114-B ESD Rating of class 3B per human body model.
- Low capacitance: 12pF(Typ.)
- Low reverse stand-off voltage: 5.0V
- Low reverse clamping voltage.
- Low leakage current.
- Fast response time

### Mechanical data

- Case: SOD-523 standard package , molded plastic.
- Terminals: Tin plated, solderable per MIL-STD-750,method 2026.
- Mounting position: Any



### Circuit Diagram



### Maximum Rating (at TA=25°C unless otherwise noted)

| Parameter  | Conditions             | Symbol          | Value    | Unit |
|--|------------------------|-----------------|----------|------|
| ESD capability                                     | IEC 61000-4-2(air)     | $V_{ESD}^{(1)}$ | ±20      | kV   |
|  | IEC 61000-4-2(contact) |                 | ±20      |      |
| JESD22-A114-B ESD voltage                          | per human body model   |                 | ±16      |      |
| ESD voltage  | Machine model          |                 | ±0.4     |      |
| Peak pulse power                                   | $T_P = 8/20\mu s$      | $P_{PP}^{(2)}$  | 50       | W    |
| Peak pulse current                                 | $T_P = 8/20\mu s$      | $I_{PP}^{(2)}$  | 5        | A    |
| Lead solder temperature Maximum(10second duration) |                        | $T_L$           | 260      | °C   |
| Junction temperature range                         |                        | $T_j$           | -40~+150 | °C   |
| Storage temperature range                          |                        | $T_{STG}$       | -55~+150 | °C   |

#### Notes:

- (1). Device stressed with ten non-repetitive ESD pulses.
- (2). Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

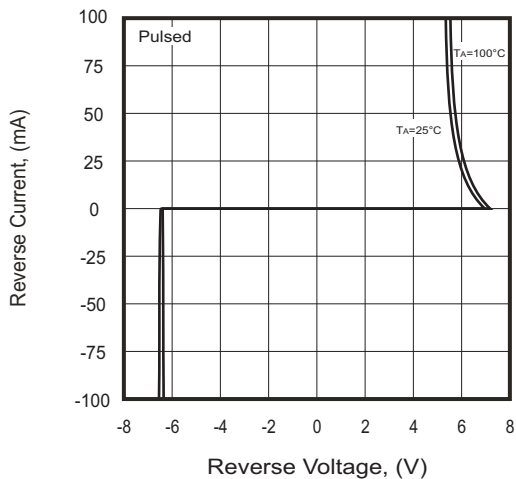
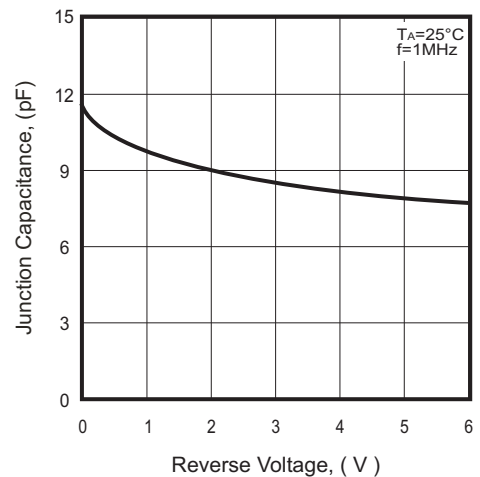
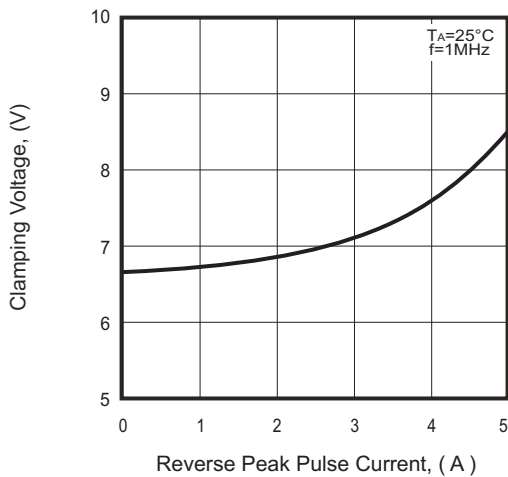
**Electrical Characteristics (at TA=25°C unless otherwise noted)**

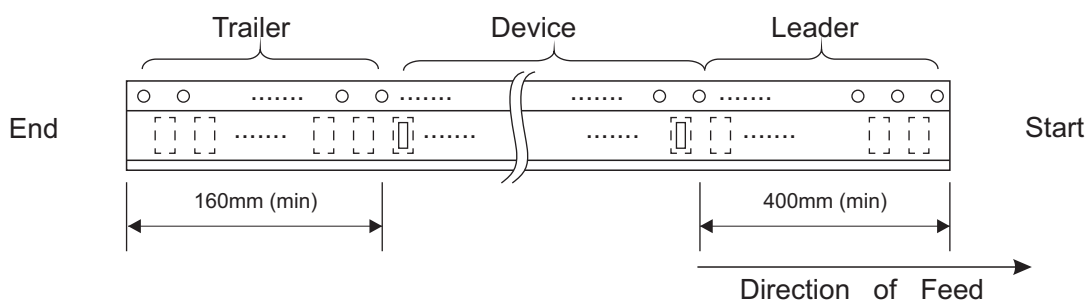
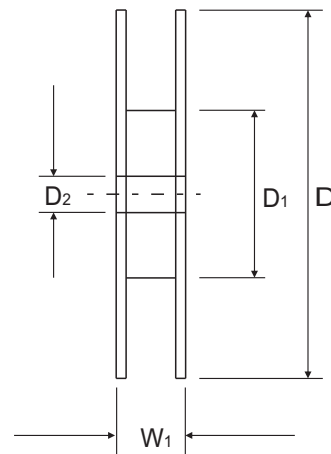
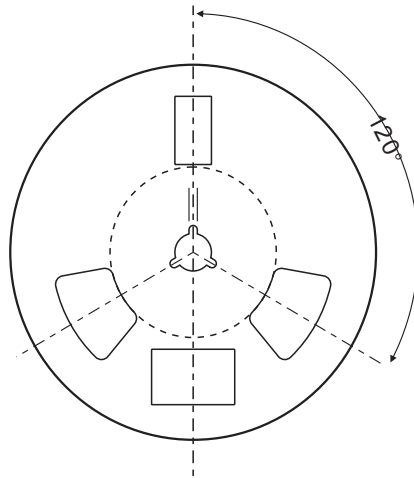
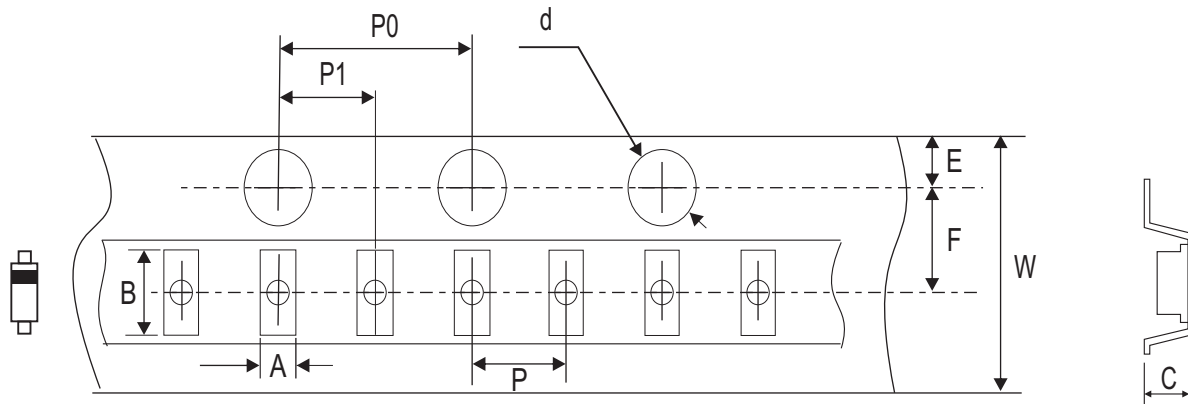
| Parameter                 | Conditions           | Symbol          | Min | Typ | Max  | Unit    |
|---------------------------|----------------------|-----------------|-----|-----|------|---------|
| Reverse stand off voltage |                      | $V_{RWM}^{(1)}$ |     |     | 5    | V       |
| Reverse leakage current   | $V_{RWM} = 5V$       | $I_R$           |     |     | 0.1  | $\mu A$ |
| Breakdown voltage         | $I_T = 1mA$          | $V_{(BR)}$      | 5.7 |     | 7.82 | V       |
| Clamping voltage          | $I_{PP} = 5A$        | $V_C^{(2)}$     |     |     | 10   | V       |
| Junction capacitance      | $V_R = 0V, f = 1MHz$ | $C_J$           |     | 12  |      | pF      |

**Notes:**

(1). Other voltages available upon request

(2). Non-repetitive current pulse 8/20 $\mu s$  exponential decay waveform according to IEC61000-4-5

**RATING AND CHARACTERISTIC CURVES (RSB6.8S)**
**Fig.1 - Reverse Characteristics**

**Fig.2 - Capacitance Characteristics**

**Fig.3 -  $V_C$  —  $I_{PP}$** 


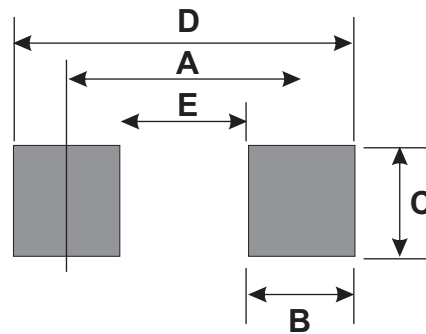
**Reel Taping Specification**


| SOD-523 | SYMBOL | A             | B             | C             | d             | D             | D <sub>1</sub> | D <sub>2</sub> |
|---------|--------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|
|         | (mm)   | 0.90 ± 0.05   | 1.94 ± 0.05   | 0.73 ± 0.05   | 1.50 ± 0.10   | 178 ± 2.00    | 54.40 ± 1.00   | 13.00 ± 1.00   |
|         | (inch) | 0.035 ± 0.002 | 0.076 ± 0.002 | 0.029 ± 0.002 | 0.059 ± 0.004 | 7.008 ± 0.079 | 2.142 ± 0.039  | 0.511 ± 0.039  |

| SOD-523 | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | W                       | W <sub>1</sub> |
|---------|--------|---------------|---------------|---------------|----------------|----------------|-------------------------|----------------|
|         | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.10   | 2.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.10    | 8.00 ± 0.30 / - 0.10    | 12.30 ± 1.0    |
|         | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.004  | 0.315 ± 0.012 / - 0.004 | 0.484 ± 0.039  |

### Suggested PAD Layout

| SIZE | SOD-523 |        |
|------|---------|--------|
|      | (mm)    | (inch) |
| A    | 1.42    | 0.055  |
| B    | 0.60    | 0.024  |
| C    | 0.70    | 0.028  |
| D    | 2.02    | 0.079  |
| E    | 0.82    | 0.031  |



### Standard Packaging

| Case Type | REEL PACK     |                     |
|-----------|---------------|---------------------|
|           | REEL<br>(pcs) | Reel Size<br>(inch) |
| SOD-523   | 3,000         | 7                   |