

## SOD-523 Plastic-Encapsulate Diodes

### SCHOTTKY BARRIER DIODE

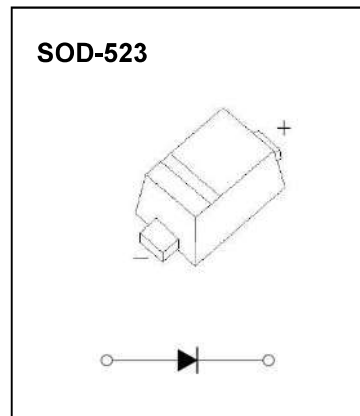
#### Features:

- Low Forward Voltage Drop
- Guard Ring Construction for Transient Protection
- High Conductance
- Also Available in Lead Free Version

#### MARKING:



SD=Device code  
 The marking bar indicates the cathode



#### Maximum Ratings @Ta=25°C

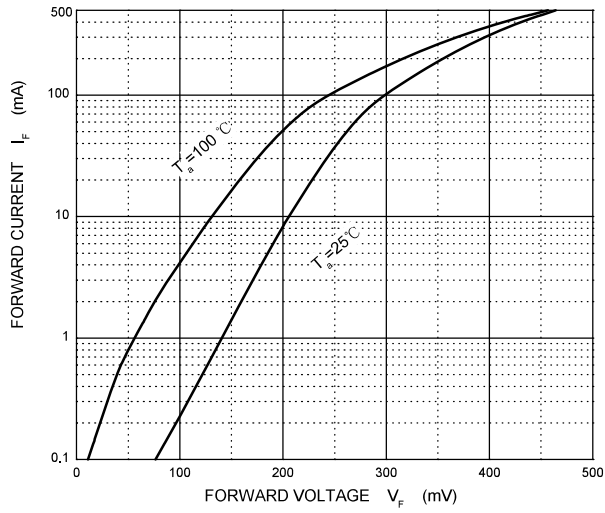
| Parameter  | Symbol          | Value      | Unit |
|--|-----------------|------------|------|
| Peak repetitive peak reverse voltage               | $V_{RRM}$       | 20         | V    |
| Working peak reverse voltage                       | $V_{RWM}$       |            |      |
| DC blocking voltage                                | $V_R$           |            |      |
| RMS reverse voltage reverse voltage (DC)           | $V_{R(RMS)}$    | 14         | V    |
| Average rectified output current                   | $I_o$           | 0.5        | A    |
| Non-repetitive Peak Forward Surge Current @t=8.3ms | $I_{FSM}$       | 5.5        | A    |
| Power dissipation                                  | $P_D$           | 150        | mW   |
| Thermal resistance junction to ambient             | $R_{\theta JA}$ | 667        | °C/W |
| Operating Junction Temperature Range               | $T_j$           | -40 ~ +125 | °C   |
| Storage Temperature Range                          | $T_{STG}$       | -55 ~ +150 | °C   |

#### Electrical Characteristics @Ta=25°C

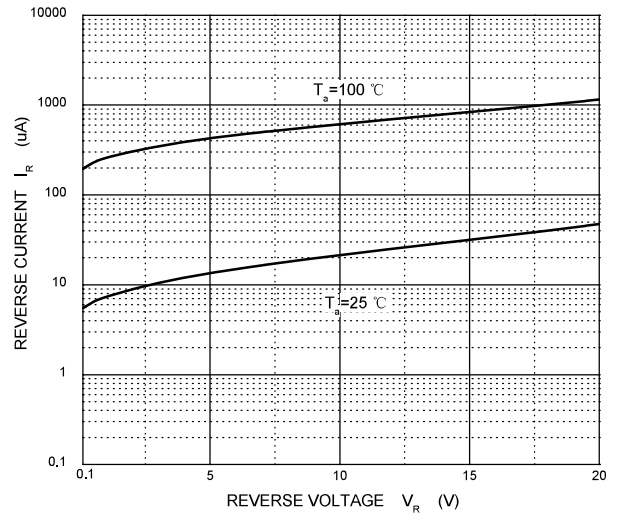
| Parameter                          | Symbol     | Min | Typ | Max | Unit    | Conditions       |
|------------------------------------|------------|-----|-----|-----|---------|------------------|
| Minimum reverse b-reakdown voltage | $V_{(BR)}$ | 20  |     |     | V       | $I_R=250\mu A$   |
| Forward voltage                    | $V_{F1}$   |     |     | 180 | mV      | $I_F=0.1mA$      |
|                                    | $V_{F2}$   |     |     | 240 |         | $I_F=1mA$        |
|                                    | $V_{F3}$   |     |     | 290 |         | $I_F=10mA$       |
|                                    | $V_{F4}$   |     |     | 380 | mV      | $I_F=100mA$      |
|                                    | $V_{F5}$   |     |     | 600 |         | $I_F=500mA$      |
| Reverse current                    | $I_R$      |     |     | 50  | $\mu A$ | $V_R=10V$        |
| Capacitance between terminals      | $C_T$      |     |     | 30  | pF      | $V_R=1V, f=1MHz$ |

**Typical Characteristics**

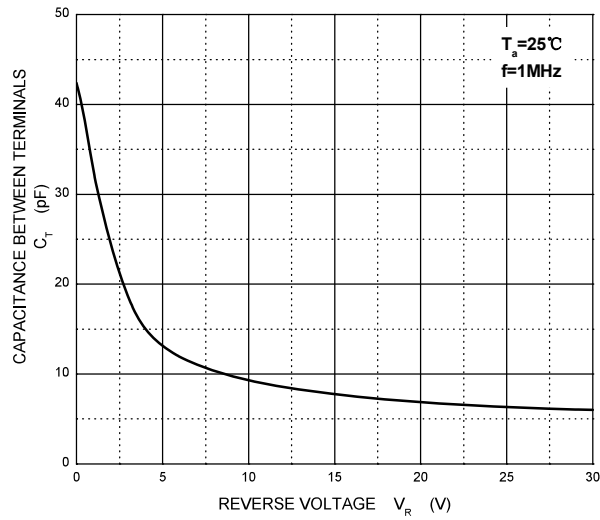
**Forward Characteristics**



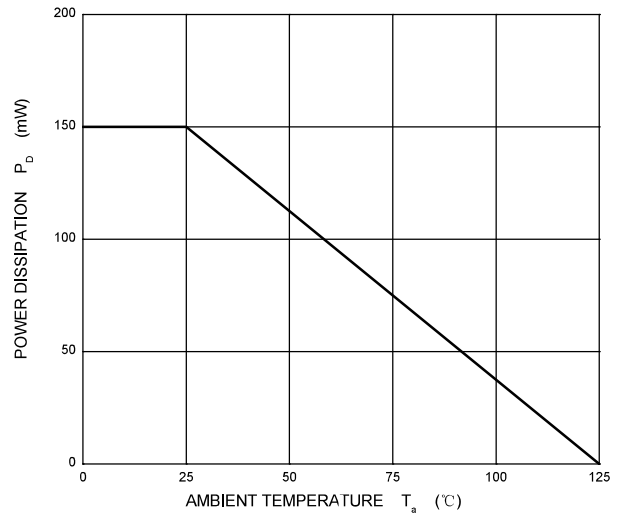
**Reverse Characteristics**



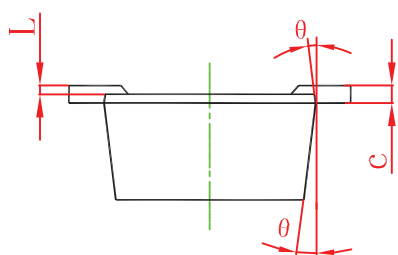
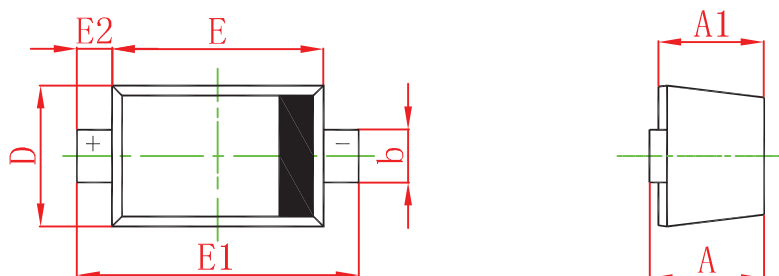
**Capacitance Characteristics**



**Power Derating Curve**

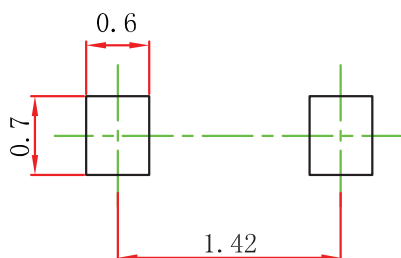


**SOD-523 Package Outline Dimensions**



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 0.510                     | 0.770 | 0.020                | 0.031 |
| A1     | 0.500                     | 0.700 | 0.020                | 0.028 |
| b      | 0.250                     | 0.350 | 0.010                | 0.014 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 0.750                     | 0.850 | 0.030                | 0.033 |
| E      | 1.100                     | 1.300 | 0.043                | 0.051 |
| E1     | 1.500                     | 1.700 | 0.059                | 0.067 |
| E2     | 0.200 REF                 |       | 0.008 REF            |       |
| L      | 0.010                     | 0.070 | 0.001                | 0.003 |
| θ      | 7° REF                    |       | 7° REF               |       |

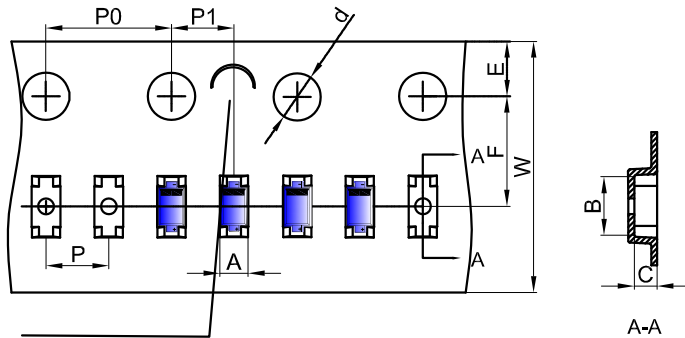
**SOD-523 Suggested Pad Layout**



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.

**SOD-523 Tape and Reel**

**SOD-523 Embossed Carrier Tape**

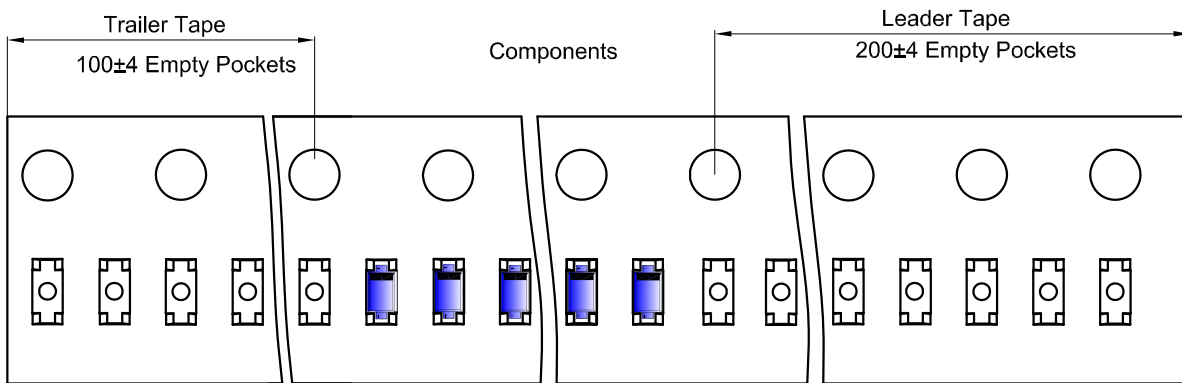


**Packaging Description:**  
 SOD-523 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 8,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

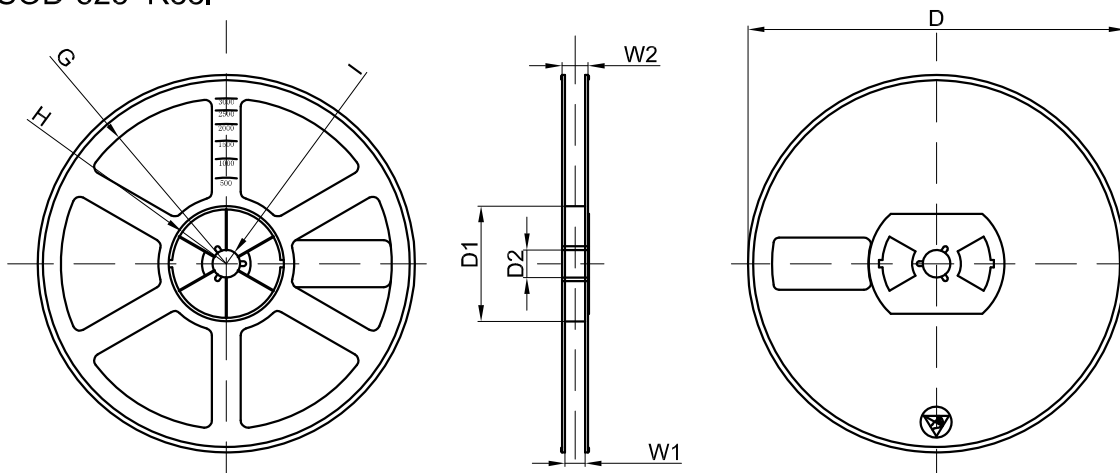
NOTE: TO CAVE 'C' ON CARRIER TAPE PER 120MM

| Dimensions are in millimeter |     |      |      |       |      |      |      |      |      |      |
|------------------------------|-----|------|------|-------|------|------|------|------|------|------|
| Pkg type                     | A   | B    | C    | d     | E    | F    | P0   | P    | P1   | W    |
| SOD-523                      | 0.9 | 1.94 | 0.73 | Ø1.50 | 1.75 | 3.50 | 4.00 | 2.00 | 2.00 | 8.00 |

**SOD-523 Tape Leader and Trailer**



**SOD-523 Reel**



| Dimensions are in millimeter |           |             |              |             |                 |          |      |       |
|------------------------------|-----------|-------------|--------------|-------------|-----------------|----------|------|-------|
| Reel Option                  | D         | D1          | D2           | G           | H               | I        | W1   | W2    |
| 7" Dia                       | Ø178.00   | 54.40       | 13.00        | R78.00      | R25.60          | R6.50    | 9.50 | 12.30 |
| REEL                         | Reel Size | Box         | Box Size(mm) | Carton      | Carton Size(mm) | G.W.(kg) |      |       |
| 8000 pcs                     | 7 inch    | 120,000 pcs | 203×203×195  | 480,000 pcs | 438×438×220     |          |      |       |