

SOD-523 Surface Mount Schottky Barrier Rectifier

Features

- $V_R=40V$
- $I_{F(AV)}=0.2A$
- Power Dissipation of 150mW
- Fast switching speed
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

Applications

For use in low voltage high frequency circuit signals.

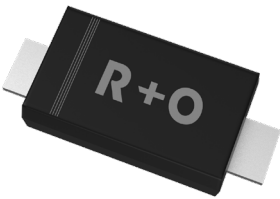
Mechanical Data

- Case: SOD-523  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end

Function Diagram

Reverse Voltage  
40 V  
Forward Current  
0.2 Ampere

SOD-523



Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER                                                          | SYMBOL          | UNIT  | VALUE     |
|--------------------------------------------------------------------|-----------------|-------|-----------|
| Maximum repetitive peak reverse voltage                            | $V_{RRM}$       | V     | 40        |
| Maximum RMS voltage                                                | $V_{RMS}$       | V     | 28        |
| Maximum DC blocking voltage                                        | $V_{DC}$        | V     | 40        |
| Maximum average forward rectified current                          | $I_{F(AV)}$     | A     | 0.2       |
| Non-repetitive Peak Forward Surge Current @ t=8.3ms Half-sine wave | $I_{FSM}$       | A     | 0.6       |
| Power Dissipation                                                  | $P_D$           | mW    | 150       |
| Junction Temperature                                               | $T_j$           | °C    | 125       |
| Storage temperature range                                          | $T_{STG}$       | °C    | -55 ~+150 |
| Typical thermal resistance                                         | $R_{\theta JA}$ | °C /W | 667       |

● Electrical Characteristics (Ta=25°C Unless otherwise noted)

| PARAMETER                     | TEST CONDITIONS                                                | SYMBOL   | UNIT | Min | Type | Max  |
|-------------------------------|----------------------------------------------------------------|----------|------|-----|------|------|
| Maximum forward voltage       | $I_F=1.0\text{mA}$                                             | $V_F$    | V    | —   | —    | 0.38 |
|                               | $I_F=40\text{mA}$                                              |          |      | —   | —    | 1.0  |
| Maximum reverse current       | $V_R=30\text{V}$                                               | $I_R$    | nA   | —   | —    | 200  |
| Capacitance between terminals | $V_R=0\text{V}, f=1.0\text{MHz}$                               | $C_T$    | pF   | —   | —    | 4    |
| Reverse recovery time         | $I_F=I_R=10\text{mA}, I_{rr}=0.1\times I_R$<br>$R_L=100\Omega$ | $t_{rr}$ | nS   | —   | —    | 5    |
| Reverse breakdown voltage     | $I_R=100\mu\text{A}$                                           | $V_R$    | V    | 40  | —    | —    |

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

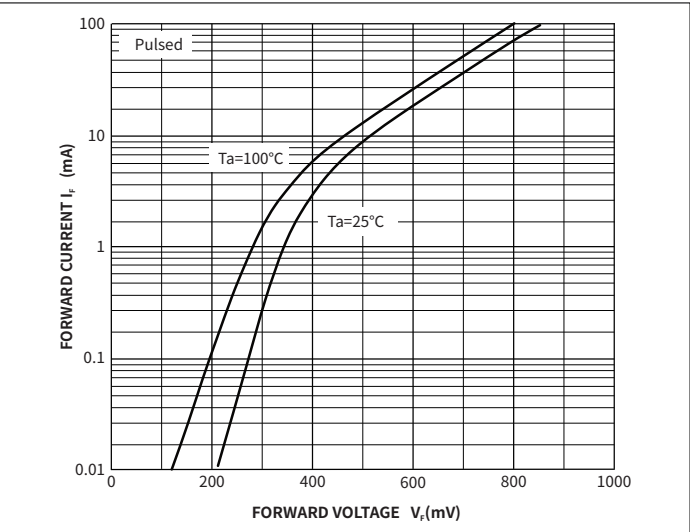


Fig.1 Typical Instantaneous Forward Characteristics

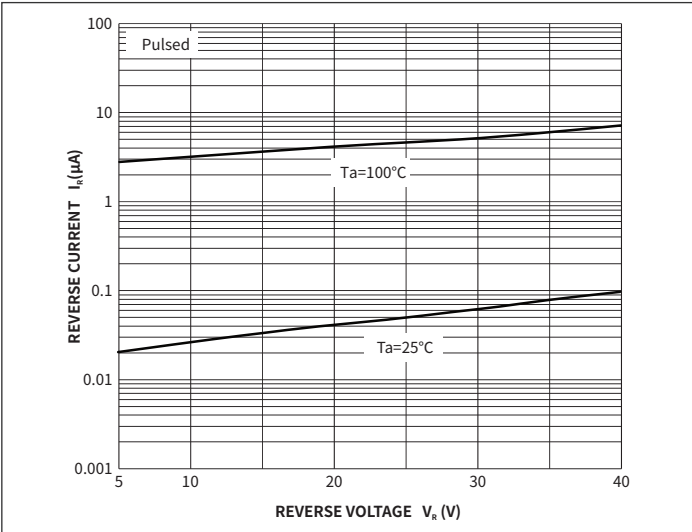


Fig.2 Typical Reverse Characteristics

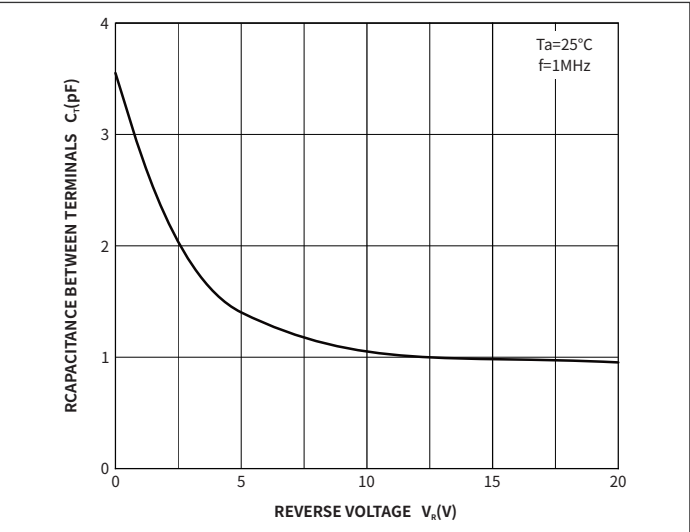


Fig.3 Typical Junction Capacitance

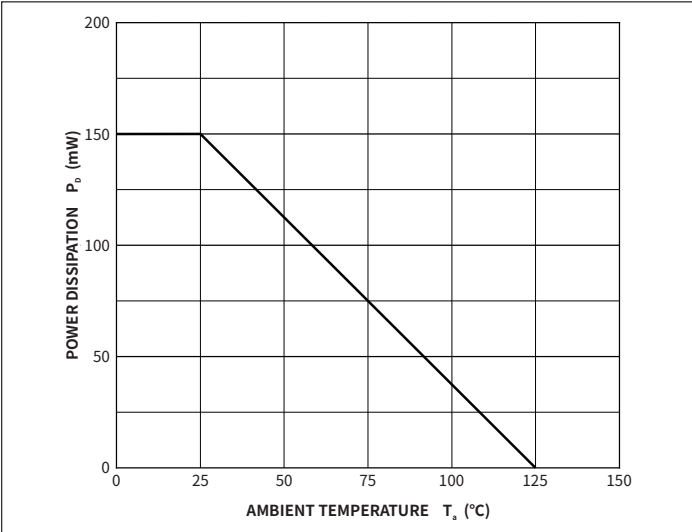
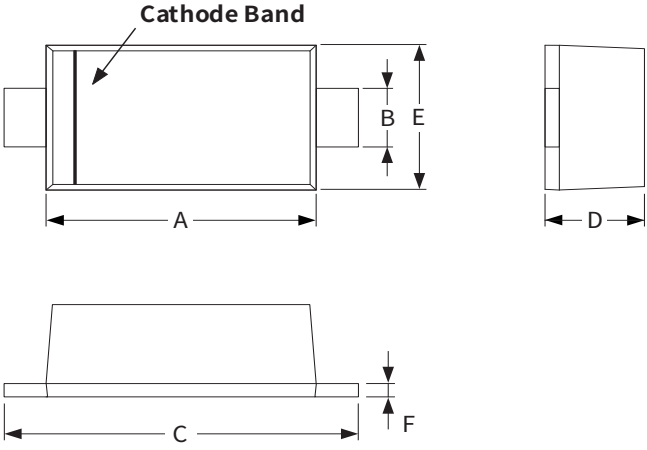


Fig.4 Power Derating Curve

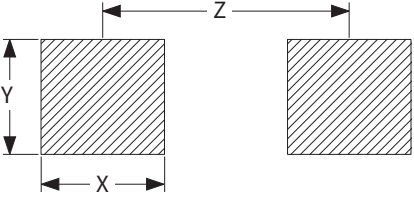
● Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOD-523 | R1           | 0.002          | 3000      | 45000    | 180000      | 7"            |

● Package Outline Dimensions (SOD-523)

|  | Symbol | Dimensions  |      |        |       |
|-----------------------------------------------------------------------------------|--------|-------------|------|--------|-------|
|                                                                                   |        | Millimeters |      | Inches |       |
|                                                                                   |        | Min         | Max  | Min    | Max   |
| A                                                                                 |        | 1.10        | 1.30 | 0.043  | 0.051 |
| B                                                                                 |        | 0.25        | 0.35 | 0.010  | 0.014 |
| C                                                                                 |        | 1.50        | 1.70 | 0.059  | 0.067 |
| D                                                                                 |        | 0.50        | 0.70 | 0.020  | 0.027 |
| E                                                                                 |        | 0.70        | 0.90 | 0.027  | 0.035 |
| F                                                                                 |        | 0.05        | 0.20 | 0.002  | 0.008 |

● Suggested Pad Layout

|  | Symbol | Dimensions  |      |        |       |
|-------------------------------------------------------------------------------------|--------|-------------|------|--------|-------|
|                                                                                     |        | Millimeters |      | Inches |       |
|                                                                                     |        | Min.        | Max. | Min.   | Max.  |
| X                                                                                   |        | 0.55        | 0.65 | 0.022  | 0.026 |
| Y                                                                                   |        | 0.65        | 0.75 | 0.026  | 0.029 |
| Z                                                                                   |        | 1.37        | 1.47 | 0.054  | 0.058 |