

## SOT-23 Surface Mount Schottky Barrier Rectifier

### Features

- $V_R$  40V
- $I_{F(AV)}$  0.5A
- High Current Capability
- Low Forward Voltage Drop
- Extremely Fast Switching Speed

Reverse Voltage  
40 V

Forward Current  
0.5 Ampere

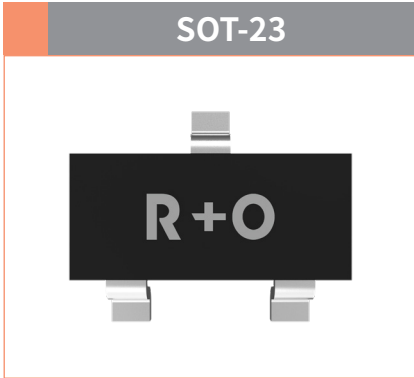
### Applications

These Schottky barrier diodes are designed for high speed switching applications, circuit protection, and voltage clamping.

### Mechanical Data

- Case: SOT-23  
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



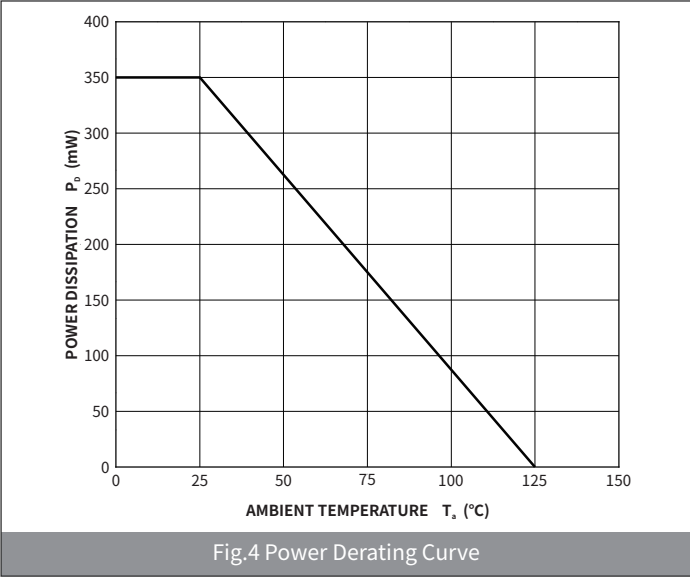
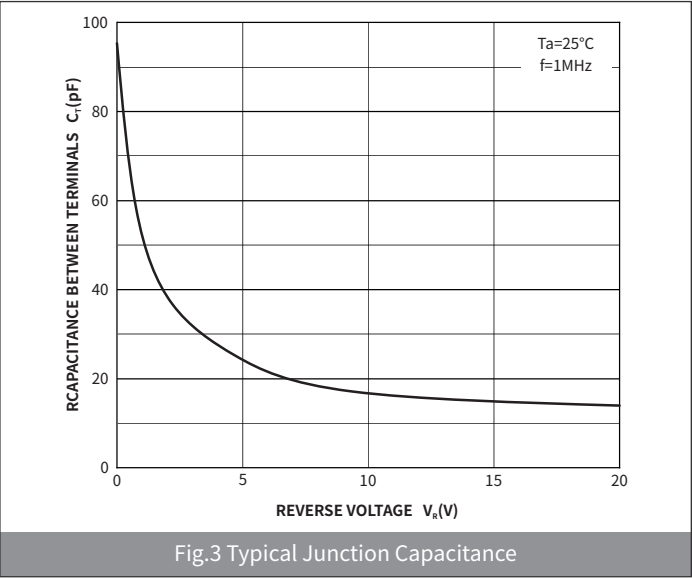
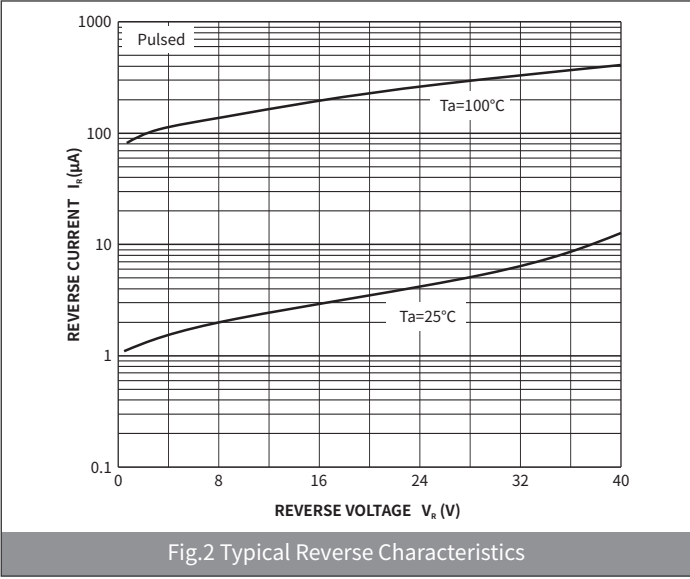
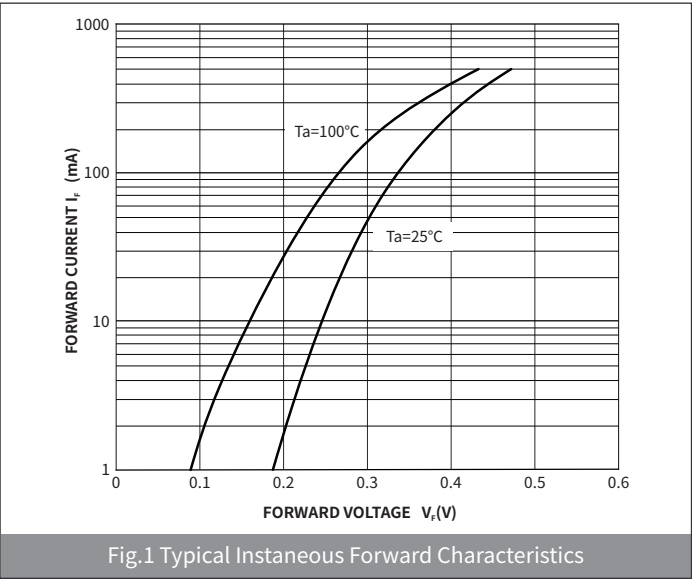
### Maximum Ratings (Ta=25°C Unless otherwise specified)

| 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                          | $I_{F(AV)}$     | mA    | 500       |
| Non-repetitive Peak Forward Surge Current @ t=8.3ms Half-sine wave | $I_{FSM}$       | A     | 2.0       |
| Power Dissipation                                                  | $P_D$           | mW    | 350       |
| Junction Temperature                                               | $T_j$           | °C    | 125       |
| Storage temperature range                                          | $T_{STG}$       | °C    | -55 ~+150 |
| Typical thermal resistance                                         | $R_{\theta JA}$ | °C /W | 286       |

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

| PARAMETER                 | TEST CONDITIONS        | SYMBOL         | UNIT | Min | Typ | Max |
|---------------------------|------------------------|----------------|------|-----|-----|-----|
| Maximum forward voltage   | I <sub>F</sub> = 500mA | V <sub>F</sub> | mV   | —   | —   | 550 |
| Maximum reverse current   | V <sub>R</sub> =35V    | I <sub>R</sub> | μA   | —   | —   | 100 |
| Reverse breakdown voltage | I <sub>R</sub> =100μA  | V <sub>R</sub> | V    | 40  | —   | —   |

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



● Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOT-23  | R1           | 0.008          | 3000      | 45000    | 180000      | 7"            |

● Package Outline Dimensions (SOT-23)

| Symbol | Dimensions  |      |          |       |
|--------|-------------|------|----------|-------|
|        | Millimeters |      | Inches   |       |
|        | Min.        | Max. | Min.     | Max.  |
| A      | 0.90        | 1.15 | 0.035    | 0.045 |
| A1     | -           | 0.10 | -        | 0.004 |
| A2     | 0.90        | 1.05 | 0.035    | 0.041 |
| b      | 0.30        | 0.50 | 0.012    | 0.020 |
| c      | 0.10        | 0.20 | 0.004    | 0.008 |
| D      | 2.80        | 3.00 | 0.110    | 0.118 |
| E      | 1.20        | 1.40 | 0.047    | 0.055 |
| E1     | 2.25        | 2.55 | 0.089    | 0.100 |
| e      | 0.950TYP    |      | 0.037TYP |       |
| e1     | 1.80        | 2.00 | 0.071    | 0.079 |
| L      | 0.550REF    |      | 0.022REF |       |
| L1     | 0.30        | 0.50 | 0.012    | 0.020 |
| θ      | -           | 8°   | -        | 8°    |

● Suggested Pad Layout

| Symbol | Dimensions  |      |        |       |
|--------|-------------|------|--------|-------|
|        | Millimeters |      | Inches |       |
|        | Min.        | Max. | Min.   | Max.  |
| J      | 0.75        | 0.85 | 0.030  | 0.033 |
| K      | 0.85        | 0.95 | 0.033  | 0.037 |
| M      | 1.95        | 2.05 | 0.077  | 0.081 |
| N      | 1.85        | 1.95 | 0.073  | 0.077 |