

SCHOTTKY BARRIER DIODE



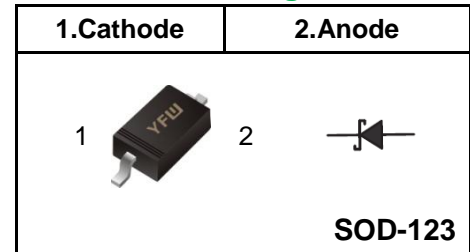
FEATURES

- ◆ Low Forward Voltage Drop
- ◆ Guard Ring Construction for Transient Protection
- ◆ Negligible Reverse Recovery Time
- ◆ Low Capacitance
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- ◆ Case: SOD-123
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 16mg / 0.00056oz

Pinning



Marking Code

| | |
|----------------|-----------|
| 1N5819W | S4 |
| 1N5818W | S5 |
| 1N5817W | S6 |

Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

| Parameter | | Symbols | 1N5819W | 1N5818W | 1N5817W | Units |
|--|--------------------|-----------------|------------|---------|---------|-------|
| Peak Repetitive Reverse Voltage | | V_{RRM} | 40 | 30 | 20 | V |
| RMS reverse voltage | | V_{RMS} | 28 | 21 | 14 | V |
| Working Peak Reverse Voltage | | V_{DC} | 40 | 30 | 20 | V |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed On Rated Load(JEDEC method) | | I_{FSM} | 13 | | | A |
| Maximum Instantaneous Forward Voltage | $I_F=20mA$ | V_F | 0.37 | | | V |
| | $I_F=200mA$ | | 0.60 | | | |
| Power Dissipation | | P_D | 400 | | | mW |
| Reverse current | 1N5819W, $V_R=30V$ | I_R | 5 | - | - | uA |
| | 1N5818W, $V_R=20V$ | | - | 5 | - | |
| | 1N5817W, $V_R=10V$ | | - | - | 5 | |
| Thermal Resistance, Junction to Ambient Air | | $R_{\theta JA}$ | 300 | | | °C/W |
| Reverse voltage $I_R=100uA$ | 1N5819W | $V_{(BR)R}$ | 40 | | | V |
| | 1N5818W | | 30 | | | |
| | 1N5817W | | 20 | | | |
| Reverse recovery time $I_F=I_R=200mA, I_{rr}=0.1 \times I_R, R_L=100\Omega$ | | T_{rr} | 10 | | | nS |
| Forward Continuons Current | | I_{FM} | 350 | | | mA |
| Total capacitance $V_R=0V, f=1MHZ$ | | C_{tot} | 28 | | | pF |
| Junction temperature | | T_j | 125 | | | °C |
| Storage temperature | | T_{stg} | -55 ~ +150 | | | °C |

Fig.1 Power Derating Curve

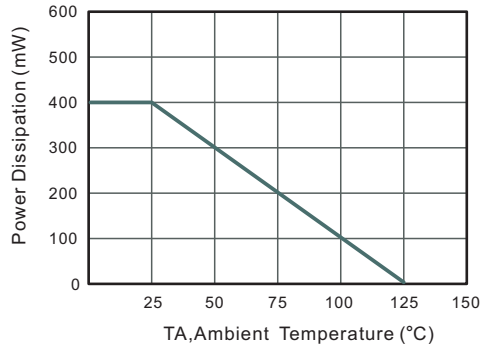


Fig.2 Typical Reverse Characteristics

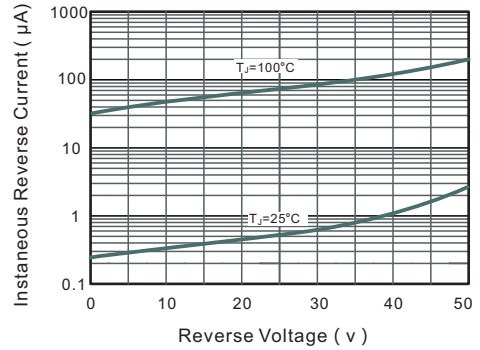


Fig.3 Forward Characteristics

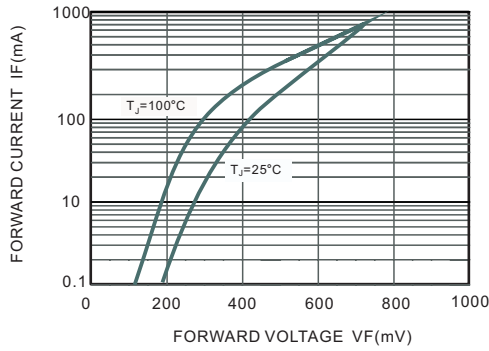


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

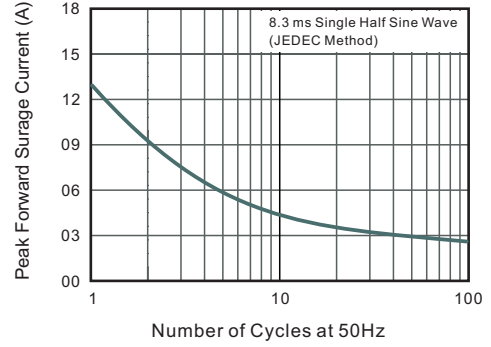


Fig.5 Typical Junction Capacitance

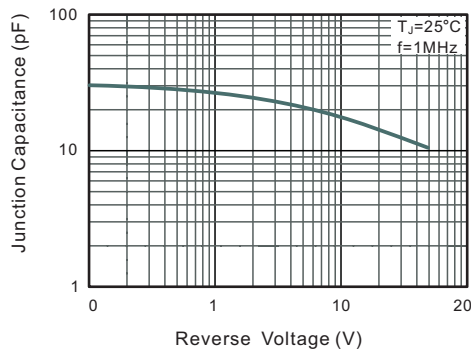
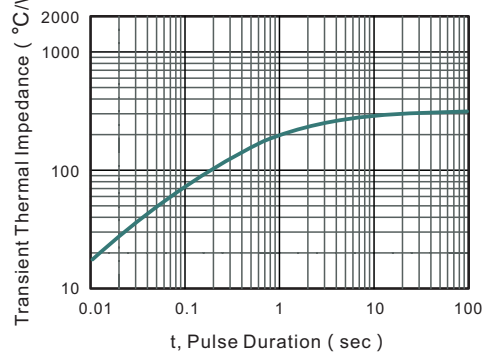


Fig.6 Typical Transient Thermal Impedance



Package Outline SOD-123

Plastic surface mounted package; 2 leads



| UNIT | | A | C | D | E | E ₁ | L ₁ | b | A ₁ | ∠ |
|------|-----|-----|------|-----|-----|----------------|----------------|-----|----------------|----|
| mm | max | 1.3 | 0.22 | 1.8 | 2.8 | 3.9 | 0.45 | 0.7 | 0.2 | 9° |
| | min | 0.9 | 0.09 | 1.5 | 2.5 | 3.6 | 0.25 | 0.5 | — | |
| mil | max | 51 | 8.7 | 71 | 110 | 154 | 18 | 28 | 8 | |
| | min | 35 | 3.5 | 59 | 98 | 142 | 10 | 20 | — | |

The recommended mounting pad size



Unit: $\frac{\text{mm}}{\text{mil}}$

Summary of Packing Options

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SOD-123 | Tape/Reel, 7" reel | 3000 | EIA-481-1 |