# 1 A Surface Mount Schottky Barrier Diode

# 1N5817WS~1N5819WS

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |

Top View
Marking Code: 1N5817WS: **SJ**
1N5818 / 5819WS: **SL**
Simplified outline SOD-323 and symbol
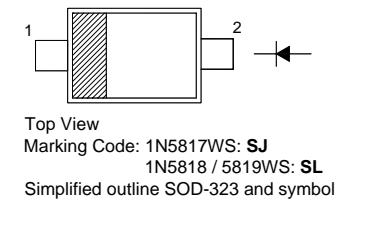
## Absolute Maximum Ratings ($T_a$ = 25 °C)

| Parameter | | Symbol | Value | Unit |
|-----------|--|--------|-------|------|
| Reverse Voltage | 1N5817WS<br>1N5818WS<br>1N5819WS | $V_R$ | 20<br>30<br>40 | V |
| Average Forward Rectified Current | | $I_{F(AV)}$ | 1 | A |
| Non-Repetitive Peak Forward Surge Current (t = 8.3 ms) | | $I_{FSM}$ | 9 | A |
| Power Dissipation | | $P_{tot}$ | 450 | mW |
| Operating Temperature Range | | $T_j$ | - 55 to + 125 | °C |
| Storage Temperature Range | | $T_{stg}$ | - 55 to + 125 | °C |

## Characteristics at $T_a$ = 25 °C

| Parameter | | Symbol | Min. | Max. | Unit |
|-----------|--|--------|------|------|------|
| Reverse Breakdown Voltage<br>at $I_R$ = 1 mA | 1N5817WS<br>1N5818WS<br>1N5819WS | $V_{(BR)R}$ | 20<br>30<br>40 | -<br>-<br>- | V |
| Forward Voltage<br>at $I_F$ = 1 A<br><br><br>at $I_F$ = 3 A | 1N5817WS<br>1N5818WS<br>1N5819WS<br><br>1N5817WS<br>1N5818WS<br>1N5819WS | $V_F$ | -<br>-<br>-<br><br>-<br>-<br>- | 0.45<br>0.55<br>0.6<br><br>0.75<br>0.875<br>0.9 | V |
| Reverse Voltage Leakage Current<br>at $V_R$ = 20 V<br>at $V_R$ = 30 V<br>at $V_R$ = 40 V | 1N5817WS<br>1N5818WS<br>1N5819WS | $I_R$ | -<br>-<br>- | 1<br>1<br>1 | mA |
| Total Capacitance<br>at $V_R$ = 4 V, f = 1 MHz | | $C_{tot}$ | - | 120 | pF |

## 1N5817WS~1N5819WS

### Fig. 1 - Forward Current Derating Curve

Resistive or Inductive Load 0.375" (9.5mm) Lead Length

Average Forward Current (A) vs Case Temperature (°C)
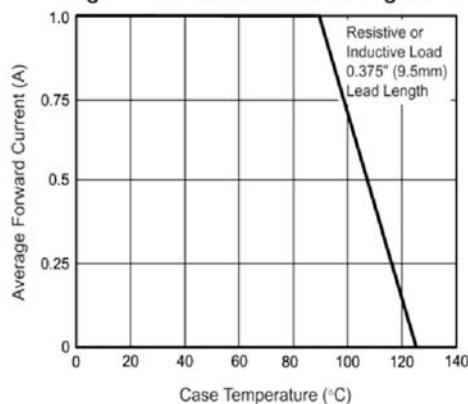
### Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

Peak Forward Surge Current (A) vs Number of Cycles at 60 Hz
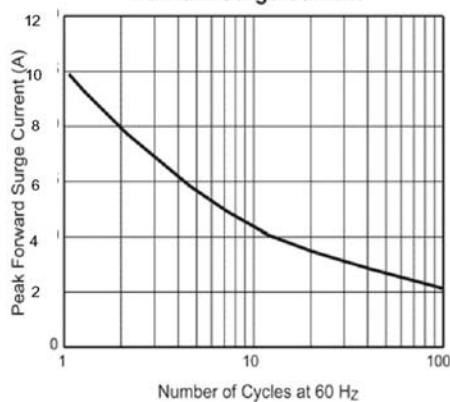
### Fig. 3 - Typical Instantaneous Forward Characteristics

$T_J = 125°C$

Pulse Width = 300µs
1% Duty Cycle

$T_J = 25°C$

Instantaneous Forward Current (A) vs Instantaneous Forward Voltage (V)
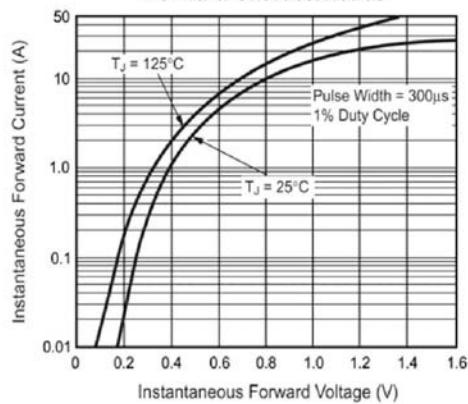
### Fig. 4 - Typical Reverse Characteristics

$T_J = 125°C$

$T_J = 75°C$

$T_J = 25°C$

Instantaneous Reverse Current (mA) vs Percent of Rated Peak Reverse Voltage (%)
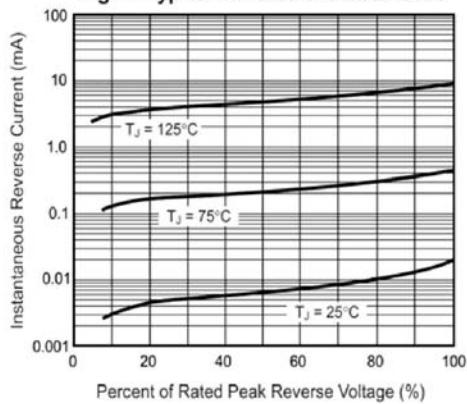
### Fig. 5 - Typical Junction Capacitance

$T_J = 25°C$
$f = 1.0$ MHz
$V_{sig} = 50$mVp-p

Junction Capacitance (pF) vs Reverse Voltage (V)
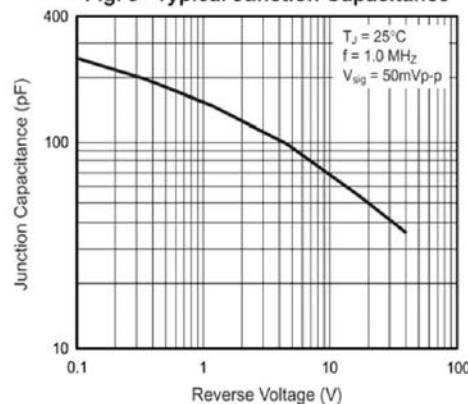
### Fig. 6 - Typical Transient Thermal Impedance

Transient Thermal Impedance (°C/W) vs t — Pulse Duration (sec.)
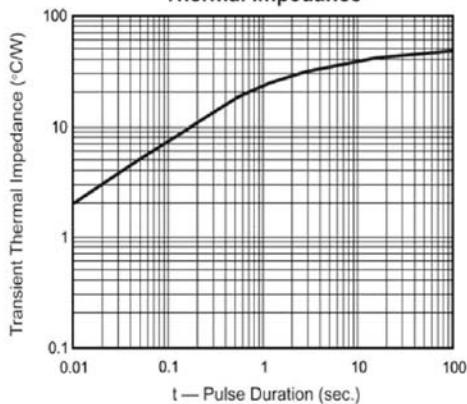
# PACKAGE OUTLINE    1N5817WS~1N5819WS

**Plastic surface mounted package; 2 leads**                    **SOD-323**

| UNIT | A | bp | C | D | E | HE | A1 | Lp |
|------|------|------|------|------|------|------|------|------|
| mm | 1.20 | 0.40 | 0.15 | 1.80 | 1.35 | 2.80 | 0.10 | 0.50 |
|    | 0.90 | 0.25 | 0.10 | 1.60 | 1.15 | 2.30 | 0.01 | 0.20 |
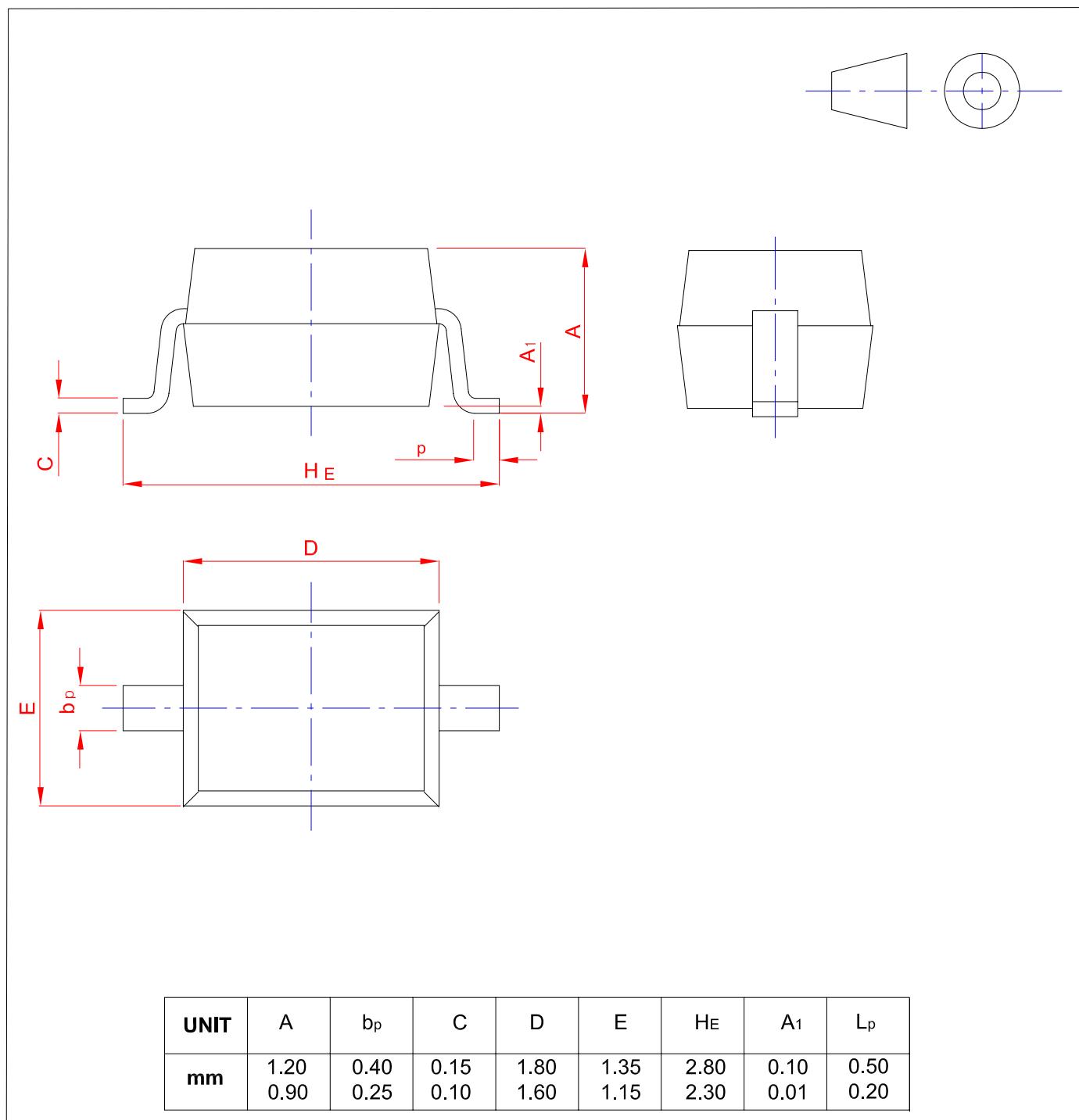
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