

Major Ratings and Characteristics

| Characteristics | Value | Units |
|--|-------------|------------------|
| I_F (DC) | 0.2 | A |
| V_{RRM} | 30 | V |
| I_{FSM} @ $t_p = 10$ ms sine | 1.0 | A |
| V_F @ 30mA DC, $T_J = 25^\circ\text{C}$ | 0.5 | V |
| P_d Power Dissipation @ $T_A = 25^\circ\text{C}$ | 200 | mW |
| T_J range | - 65 to 150 | $^\circ\text{C}$ |

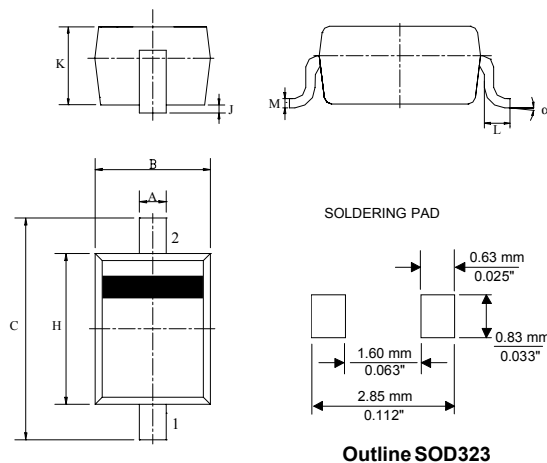
Description/ Features

This Schottky barrier diode is designed for high speed switching application, voltage clamping and circuit protection. Miniature surface mount packages with reduced foot print are excellent for portable application where space is limited

- Small foot print, surface mountable
- Very low forward voltage drop
- Extremely fast switching speed for high frequency operation
- Guard ring for enhanced ruggedness and long term reliability

Case Styles

Device Marking: IRWS



| DIM | Millimeters | | Inches | |
|----------|-------------|------|--------|-------|
| | Min | Max | Min | Max |
| A | 0.25 | 0.35 | 0.010 | 0.014 |
| B | 1.20 | 1.40 | 0.047 | 0.055 |
| C | 2.30 | 2.70 | 0.091 | 0.106 |
| H | 1.60 | 1.80 | 0.063 | 0.071 |
| J | - | 0.10 | - | 0.004 |
| K | 1.10 | 1.35 | 0.043 | 0.053 |
| L | 0.20 | 0.40 | 0.008 | 0.016 |
| M | 0.10 | 0.15 | 0.004 | 0.006 |
| α | 8° | | 8° | |



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Voltage Ratings

| Part number | Value |
|---|-------|
| V_R Max. DC Reverse Voltage (V) | 30 |
| V_{RWM} Max. Working Peak Reverse Voltage (V) | |

Absolute Maximum Ratings

| Parameters | Value | Units | Conditions |
|--|-------|-------|---|
| I_F Forward Current | 0.2 | A | DC |
| I_{FSM} Max. Peak One Cycle Non-Repetitive Surge Current, @ $T_J = 25^\circ\text{C}$ | 8.4 | A | 5 μs Sine or 3 μs Rect. pulse |
| | 1.0 | A | 10ms Sine or 6ms Rect. pulse |

Following any rated load condition and with rated V_{RWM} applied

Electrical Specifications

| Parameters | Value | Units | Conditions |
|--|-------|------------------|--|
| V_{FM} Max. Forward Voltage Drop (1) | 0.24 | V | @ 0.1mA |
| | 0.32 | V | @ 1mA |
| V_{FM} Max. Forward Voltage Drop (1) | 0.40 | V | @ 10mA |
| | 0.50 | V | @ 30mA |
| | 0.65 | V | @ 100mA |
| I_{RM} Max. Reverse Leakage Current (1) | 2 | μA | @ $V_R = 25\text{ V}$ |
| | 3 | μA | @ $V_R = 30\text{ V}$ |
| C_T Max. Junction Capacitance | 10 | pF | $V_R = 1V_{DC}$ (test signal range 100KHz to 1Mhz), $T_J = 25^\circ\text{C}$ |
| dv/dt Max. Voltage Rate of Change (Rated V_R) | 10000 | V/ μs | |

$T_J = 25^\circ\text{C}$

(1) Pulse Width < 300 μs , Duty Cycle < 2%

Thermal-Mechanical Specifications

| Parameters | Value | Units | Conditions |
|---|------------|--------------------|---|
| T_J Max. Junction Temperature Range (*) | -65 to 150 | $^\circ\text{C}$ | |
| T_{stg} Max. Storage Temperature Range | -65 to 150 | $^\circ\text{C}$ | |
| $R_{th(j-a)}$ Max. Thermal Resistance Junction to Ambient | 635 | $^\circ\text{C/W}$ | Mounted on PC board FR4 with minimum pad size |
| Wt Approximate Weight | 0.004 | gr | |
| Case Style | SOD323 | | |
| Device Marking | IRWS | | |

(*) $\frac{dP_{tot}}{dT_J} < \frac{1}{R_{th(j-a)}}$ thermal runaway condition for a diode on its own heatsink

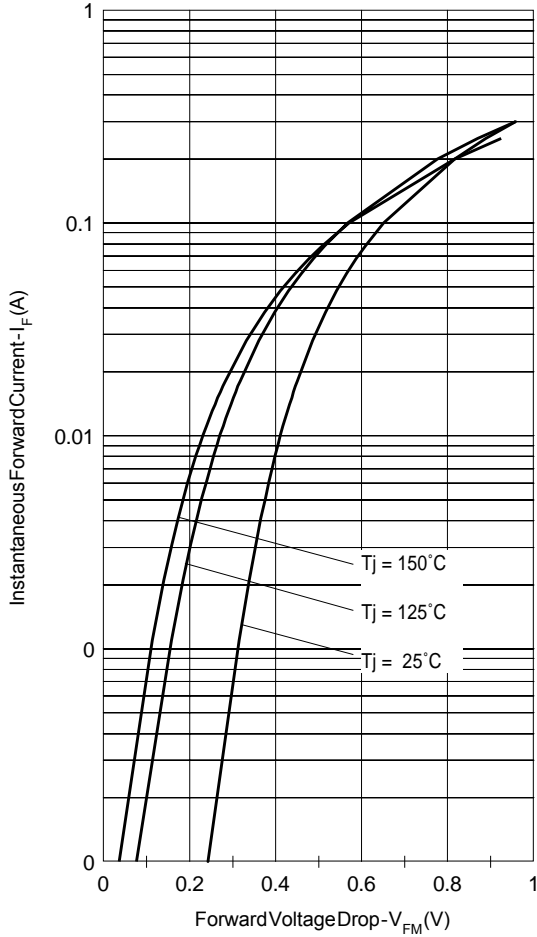


Fig. 1 - Max. Forward Voltage Drop Characteristics (PerLeg)

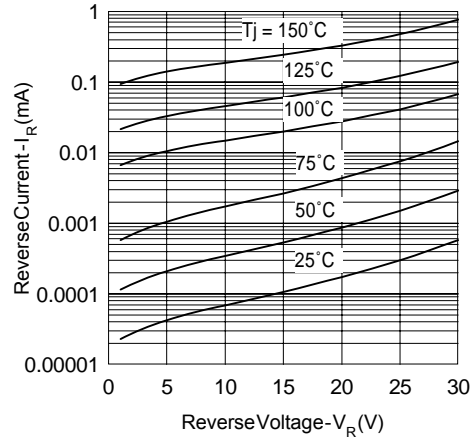


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage (PerLeg)

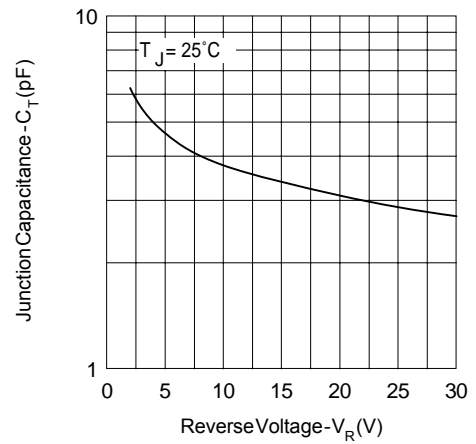


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (PerLeg)

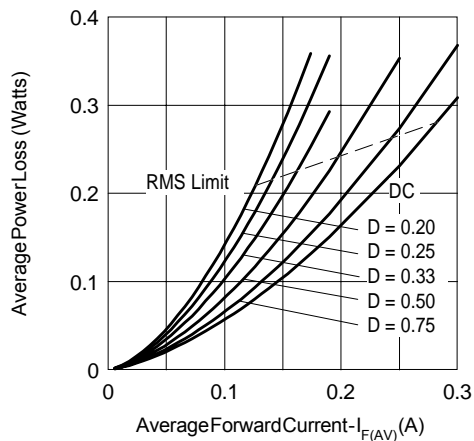


Fig. 4 - Forward Power Loss Characteristics

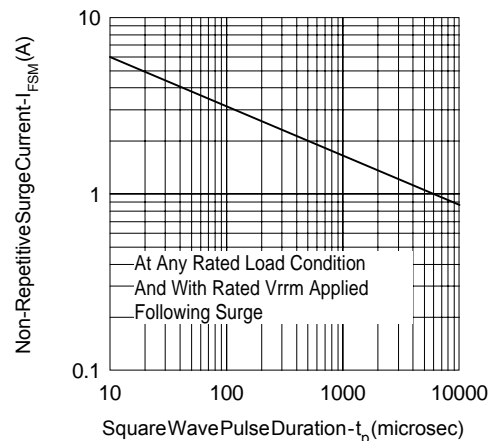


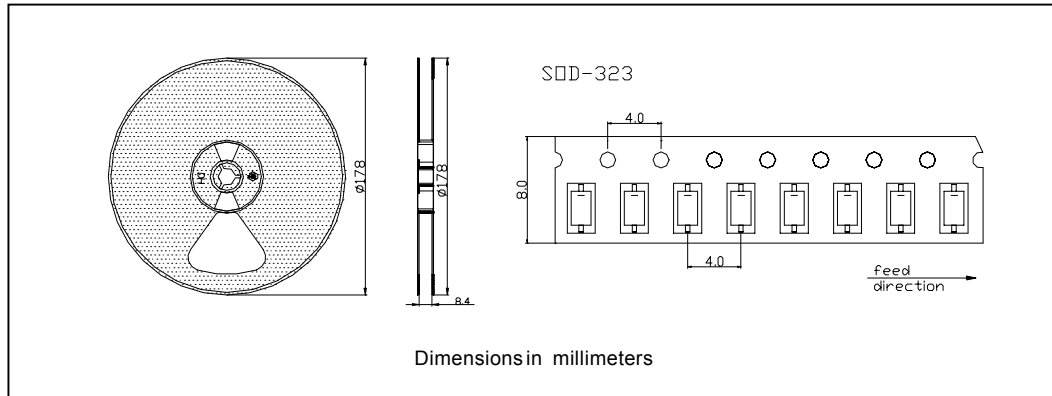
Fig. 5 - Max. Non-Repetitive Surge Current

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Tape & Reel Information



Ordering Information Table

| Device | Package | Marking | Base qty | Delivery mode |
|---------|---------|---------|----------|---------------|
| BAT54WS | SOD-323 | IRWS | 3000 | Tape & reel |

Data and specifications subject to change without notice.
This product has been qualified and designed for Industrial Level.
Qualification Standards can be found on IR's Web site.

International
IR Rectifier

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