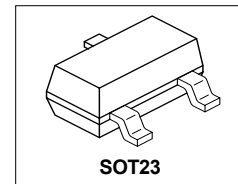


International IOR Rectifier

BAT54C

SCHOTTKY DIODE

0.2 Amp



Major Ratings and Characteristics

| Characteristics | Value | Units |
|--|------------|------------------|
| I_F (DC) Per Leg | 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 | $^\circ\text{C}$ |

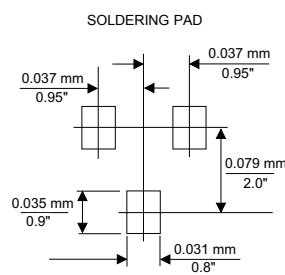
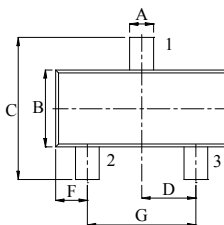
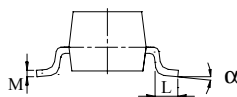
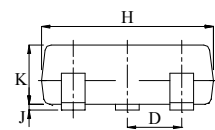
Description/ Features

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

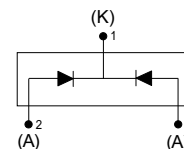
- Small foot print, surface mountable
- Very low forward voltage drop
- Extremely fast switching speed for high frequency operation
- Guard ring for enhanced ruggedness and long term reliability

Case Styles

Device Marking: IR54C



| DIM | Millimeters | | Inches | |
|----------|-------------|------|--------|-------|
| | Min | Max | Min | Max |
| A | 0.37 | 0.51 | 0.015 | 0.020 |
| B | 1.20 | 1.40 | 0.047 | 0.055 |
| C | 2.30 | 2.50 | 0.091 | 0.098 |
| D | 0.89 | 1.03 | 0.035 | 0.041 |
| F | 0.45 | 0.60 | 0.018 | 0.024 |
| H | 2.80 | 3.00 | 1.110 | 0.118 |
| J | 0.013 | 0.10 | 0.001 | 0.004 |
| K | 0.89 | 1.10 | 0.035 | 0.043 |
| L | 0.45 | 0.61 | 0.018 | 0.024 |
| M | 0.09 | 0.18 | 0.003 | 0.007 |
| α | 8° | | 8° | |



Outline SOT23

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, per Leg |
| I _{FSM} Max. Peak One Cycle Non-Repetitive Surge Current, @T _J =25°C | 8.4 | A | 5µs Sine or 3µs 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 | 2 | µA | V _R = 25V |
| | 3 | µA | V _R = 30V |
| C _T Max. Junction Capacitance | 10 | pF | V _R = 1V _{DC} (test signal range 100KHz to 1Mhz), T _J = 25°C |
| dv/dt Max. Voltage Rate of Change (Rated V _R) | 10000 | V/µs | |

T_J = 25°C

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

Thermal-Mechanical Specifications

| Parameters | Value | Units | Conditions |
|--|------------|-------|---|
| T _J Max. Junction Temperature Range (*) | -65 to 150 | °C | |
| T _{stg} Max. Storage Temperature Range | -65 to 150 | °C | |
| R _{th(j-a)} Max. Thermal Resistance Junction to Ambient | 500 | °C/W | Mounted on PC board FR4 with minimum pad size |
| Wt Approximate Weight | 0.008 | gr | |
| Case Style | SOT23 | | |
| Device Marking | IR54C | | |

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

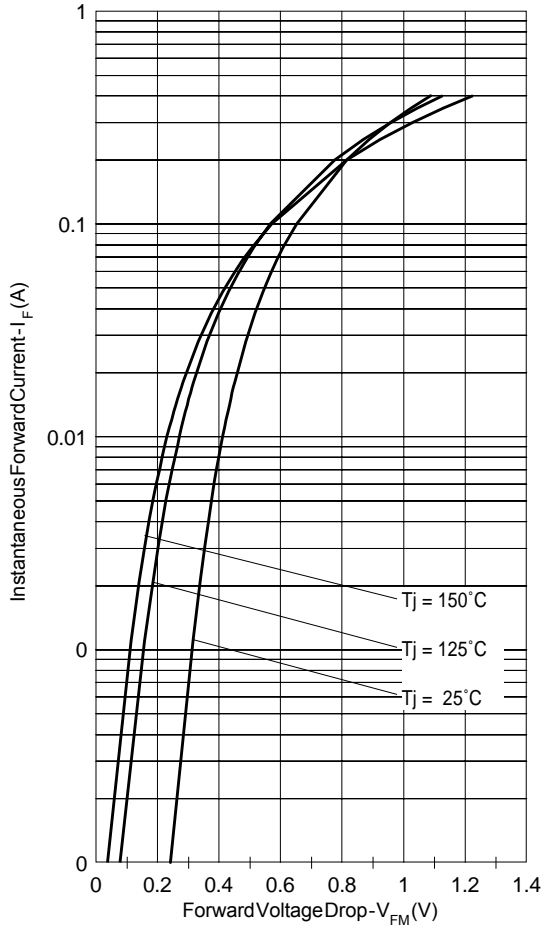


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

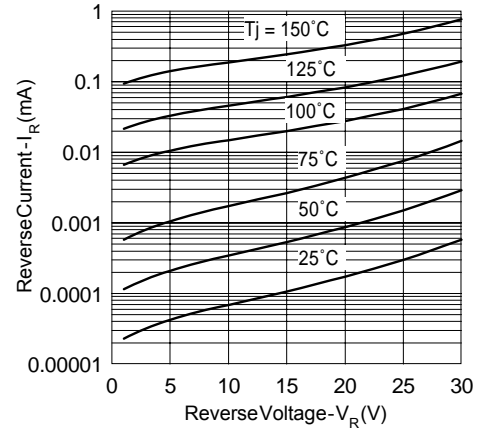


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage (Per Leg)

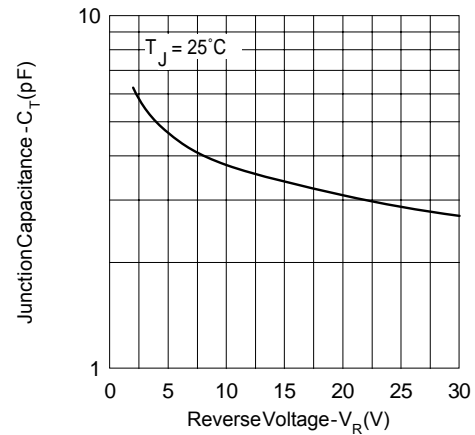


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

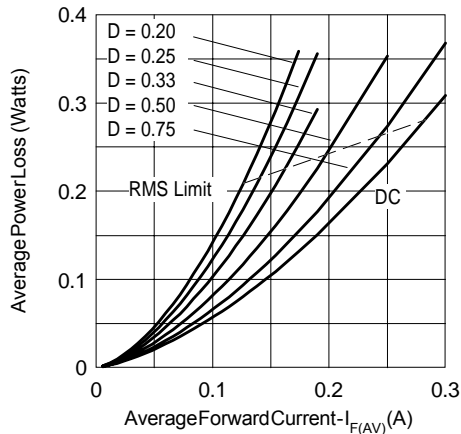


Fig. 4 - Forward Power Loss Characteristics

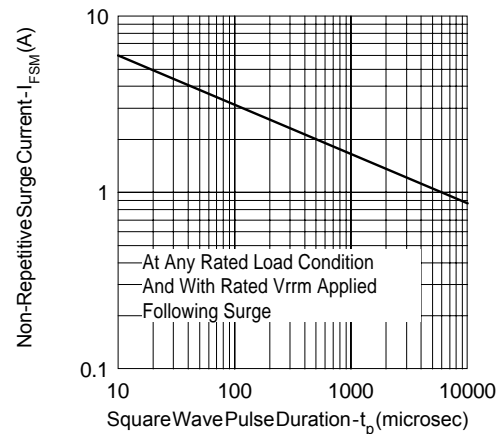


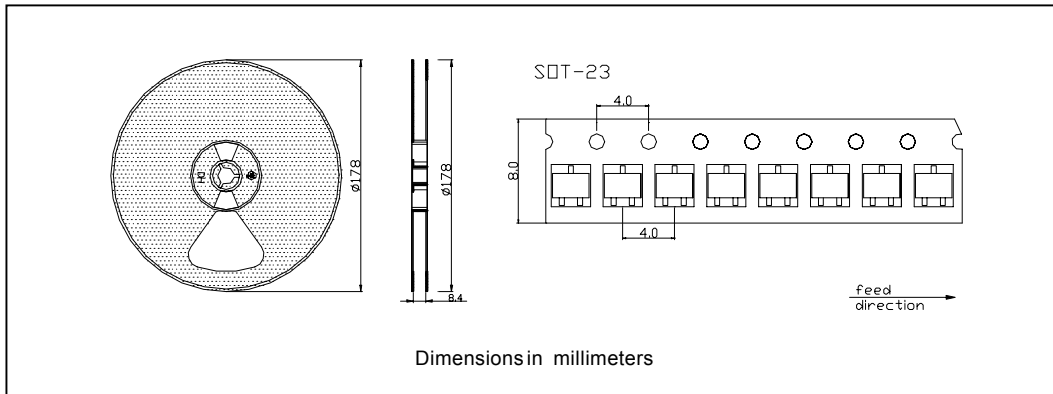
Fig. 5 - Max. Non-Repetitive Surge Current

BAT54C

Preliminary Data Sheet PD-20760 12/01

International
IR Rectifier

Tape & Reel Information



Ordering Information Table

| Device | Package | Marking | Configuration | Base qty | Delivery mode |
|--------|---------|---------|---------------|----------|---------------|
| BAT54C | SOT-23 | IR54C | Dual C. Anode | 3000 | Tape & Reel |

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

International
IR Rectifier

IR WORLD HEADQUARTERS: 233 Kansas St., El Segundo, California 90245, USA Tel: (310) 252-7105
TAC Fax: (310) 252-7309
Visit us at www.irf.com for sales contact information. 12/01