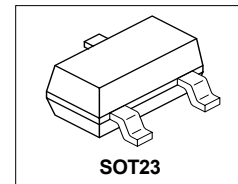


International IOR Rectifier

BAT54S

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	$^\circ\text{C}$

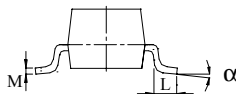
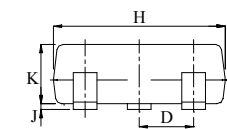
Description/ Features

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

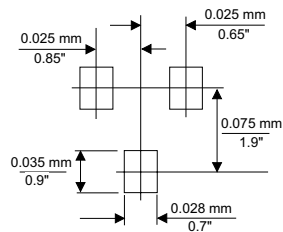
- Small foot print, surface mountable
- Very low forward voltage drop
- Extremely fast switching speed for high frequency operation
- Guard ring for enhanced ruggedness and long term reliability

Case Styles

Device Marking: IR54S

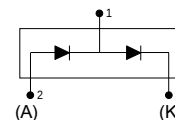


SOLDERING PAD



Outline SOT23

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°	



BAT54S

Preliminary Data Sheet PD-20762 12/01

International
IR Rectifier

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, @ $T_J = 25^\circ\text{C}$	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	2	μA	$V_R = 25\text{V}$
	3	μA	$V_R = 30\text{V}$
C_T Max. Junction Capacitance	10	pF	$V_R = 5V_{DC}$ (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	500	$^\circ\text{C/W}$	Mounted on PC board FR4 with minimum pad size
Wt Approximate Weight	0.008	gr	
Case Style	SOT23		
Device Marking	IR54S		

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

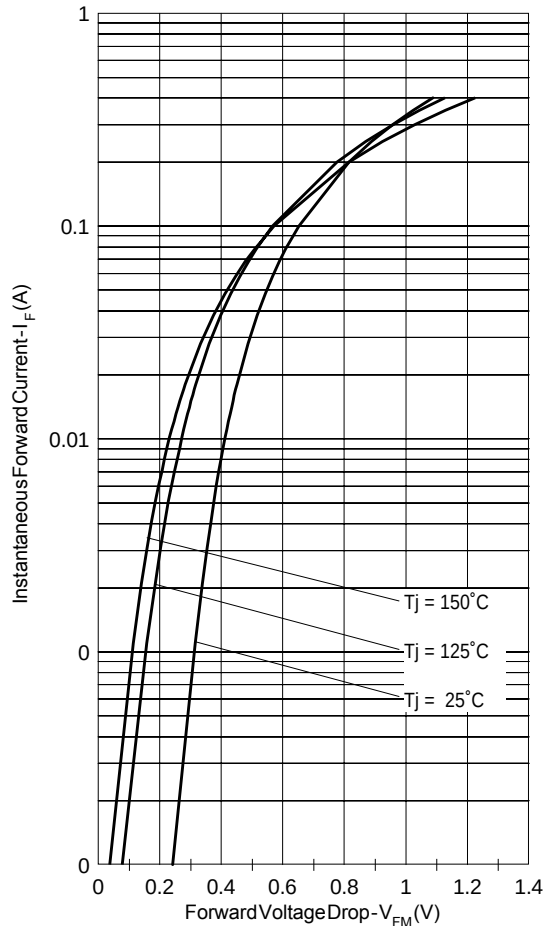


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

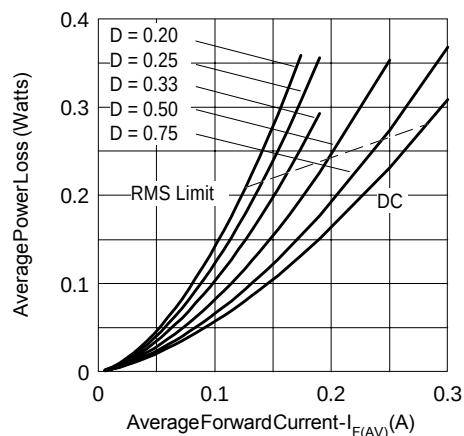


Fig. 4 - Forward Power Loss Characteristics

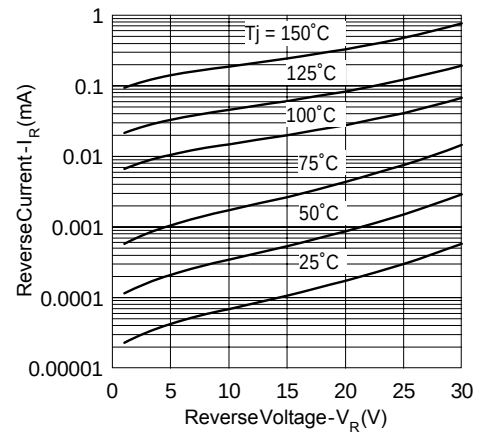


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage (Per Leg)

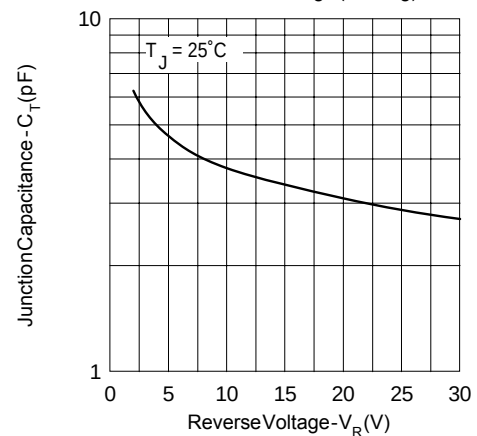


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

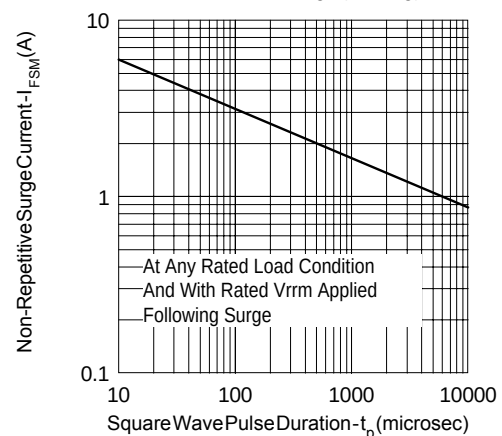


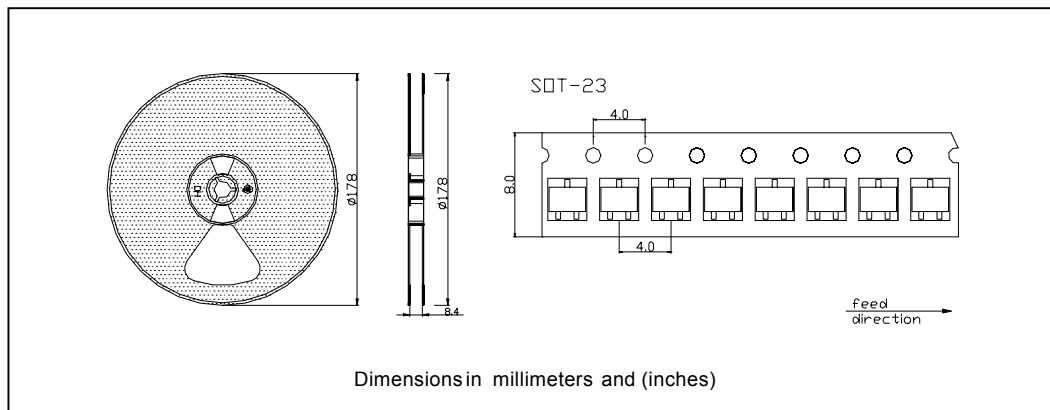
Fig. 5 - Max. Non-Repetitive Surge Current

BAT54S

Preliminary Data Sheet PD-20762 12/01

International
IR Rectifier

Tape & Reel Information



Ordering Information Table

Device	Package	Marking	Configuration	Base qty	Delivery mode
BAT54S	SOT-23	IR54S	Dual Series	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