Bulletin PD-21129 04/06

International
IOR Rectifier

BAT54WPbF

SCHOTTKY DIODE 0.2 Amp

$I_{F(AV)}$ = 0.2Amp
V_R = 30V

Major Ratings and Characteristics

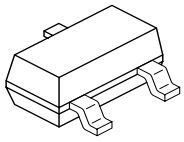
Characteristics	Value	Units
I_F (DC)	0.2	A
V_{RRM}	30	V
I_{FSM} @t_p = 10 ms sine	1.0	A
V_F @30mA DC, T_J = 25°C	0.5	V
P_d Power Dissipation @T_A = 25°C	200	mW
T_J range	- 65 to 150	°C

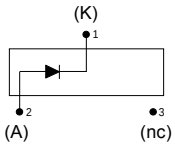
Description/ Features

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
- Lead-Free ("PbF" suffix)

Case Styles





SOT323

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	8.4	A	5µs Sine or 3µs Rect. pulse	Following any rated load condition and with rated V_{RRM} applied
	Surge Current, @ T_J = 25°C	0.6	A	10ms Sine or 6ms Rect. pulse	

Electrical Specifications

	Parameters		Value	Units	Conditions	
V_{FM}	Max. Forward Voltage Drop	(1)	0.24	V	@ 0.1mA	T_J = 25°C
			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	(1)	2	µA	V_R = 25V	
	Current		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		

(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	625	°C/W	Mounted on PC board FR4 with minimum pad size
Wt	Approximate Weight	0.006	gr	
	Case Style	SOT323		
	Device Marking	IY$\overline{W}$LC		

(*) $\frac{dPtot}{dTj} < \frac{1}{Rth(j\text{-}a)}$ thermal runaway condition for a diode on its own heatsink

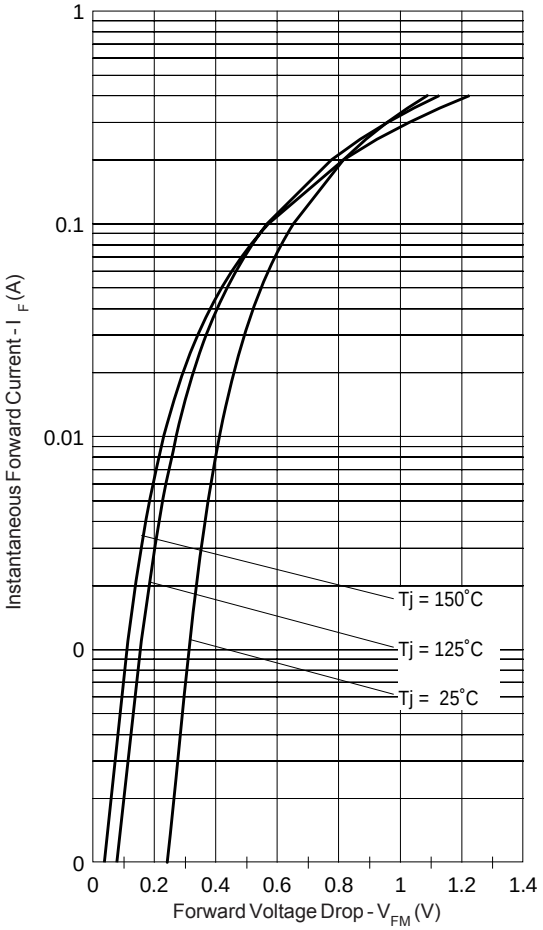


Fig. 1 - Max. Forward Voltage Drop Characteristics (Per Leg)

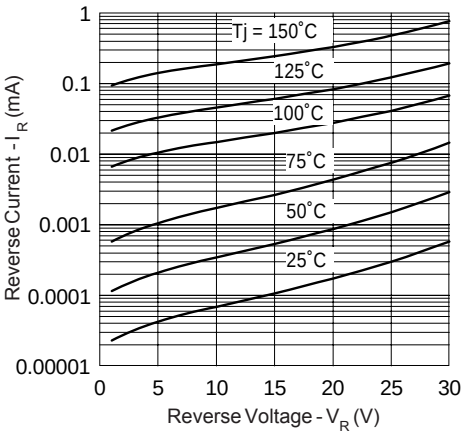


Fig. 2 - Typical Values Of Reverse Current Vs. Reverse Voltage (Per Leg)

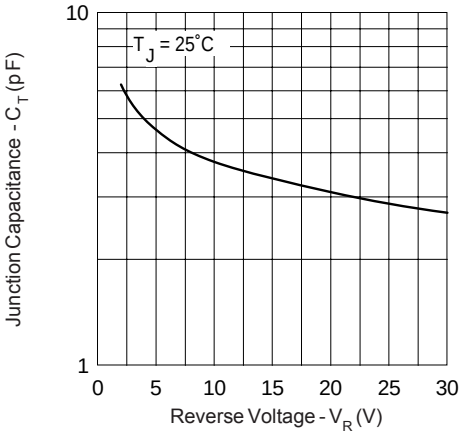


Fig. 3 - Typical Junction Capacitance Vs. Reverse Voltage (Per Leg)

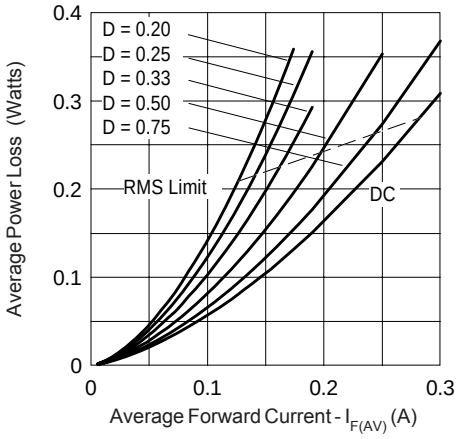


Fig. 4 - Forward Power Loss Characteristics

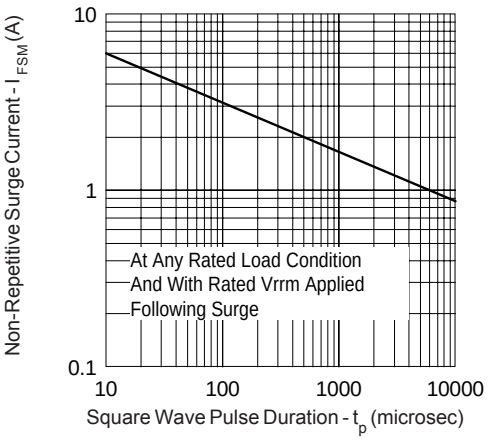
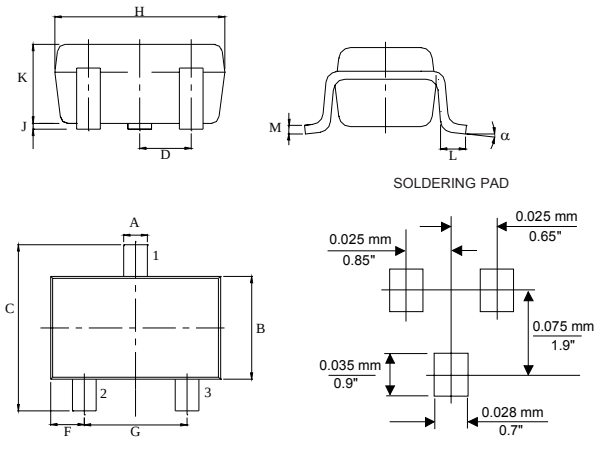
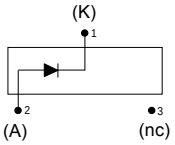


Fig. 5 - Max. Non-Repetitive Surge Current

Outline Table

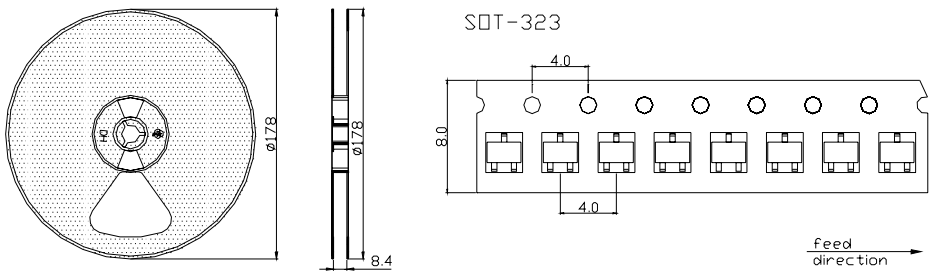


DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.25	0.40	0.010	0.016
B	1.15	1.35	0.045	0.053
C	2.00	2.20	0.079	0.087
D	-	0.65	-	0.026
F	0.30	0.40	0.012	0.016
G	1.20	1.40	0.047	0.055
H	1.80	2.20	0.071	0.087
J	0.00	0.10	0.000	0.004
K	0.90	1.00	0.035	0.039
L	0.10	0.30	0.004	0.012
M	0.109	0.25	0.004	0.010
α	8°		8°	



Outline SOT323

Tape & Reel Information



Dimensions in millimeters

Ordering Information Table

Device	Package	Marking	Configuration	Base qty	Delivery mode
BAT54W	SOT-323	IY̅WLC	Single	3000	Tape & Reel

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

International
IOR Rectifier

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04/06

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