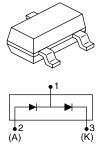
Vishay High Power Products

Schottky Rectifier, 2 x 0.1 A



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SOT-323

2 x 0.1 A

30 V

PRODUCT SUMMARY

 $I_{F(AV)}$

 V_{R}

FEATURES

- Small foot print, surface mountable
- Very low forward voltage drop
- Extremely fast switching speed for high **RoHS** COMPLIANT
 COMPLIANT



- Guard ring for enhanced ruggedness and long term reliability
- Lead (Pb)-free
- Designed and qualified for industrial level

DESCRIPTION

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

MAJOR RATINGS AND CHARACTERISTICS						
SYMBOL	CHARACTERISTICS	CHARACTERISTICS VALUES				
l _F	DC	0.2	A			
V _{RRM}		30	V			
I _{FSM}	t _p = 10 ms sine	1.0	A			
V _F	30 mA DC, T _J = 25 °C	0.5	V			
P _d	Power dissipation at $T_A = 25 \text{ °C}$	200	mW			
TJ	Range	- 65 to 150	°C			

VOLTAGE RATINGS					
PARAMETER	SYMBOL	BAT54SWPbF	UNITS		
Maximum DC reverse voltage	V _R	30	V		
Maximum working peak reverse voltage	V _{RWM}	30	v		

ABSOLUTE MAXIMUM RATINGS						
PARAMETER		SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum average	per leg		DC		0.1	
forward current per device		IF(AV)			0.2	
Maximum peak one cycle non-repetitive surge current			5 μs sine or 3 μs rect. pulse	Following any rated load condition and with rated	8.4	A
at $T_J = 25 \text{ °C}$		IFSM	10 ms sine or 6 ms rect. pulse	V _{RRM} applied	1.0	

* Pb containing terminations are not RoHS compliant, exemptions may apply

BAT54SWPbF

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ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
		0.1 A	T _J = 25 °C	0.65	v
		30 mA		0.50	
Maximum forward voltage drop	V _{FM} ⁽¹⁾	10 mA		0.40	
		1 mA		0.32	
		0.1 mA		0.24	
	I _{RM} ⁽¹⁾	V _R = 25 V		2	μA
Maximum reverse leakage current		V _R = 30 V		3	
Maximum junction capacitance	aximum junction capacitance C_T $V_R = 1 V_{DC}$ (test signal range 100 kHz to 1 MHz), $T_J = 25 \degree C$		10	pF	
Maximum voltage rate of change	dV/dt	Rated V _R		10 000	V/µs

Note

 $^{(1)}\,$ Pulse width < 300 $\mu s,$ duty cycle < 2 %

THERMAL - MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS	VALUES	UNITS	
Maximum junction and storage temperature range	T _J ⁽¹⁾ , T _{Stg}		- 65 to 150	°C	
Maximum thermal resistance, junction to ambient	R _{thJA}	Mounted on PC board FR4 with minimum pad size	625	°C/W	
Approximate weight			0.006	g	
Marking device		Case style SOT-323	L <u>Y</u> V	VLC	

Note

 $^{(1)} \quad \frac{dP_{tot}}{dT_J} < \frac{1}{R_{thJA}} \quad \text{thermal runaway condition for a diode on its own heatsink}$



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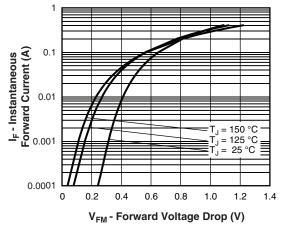


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

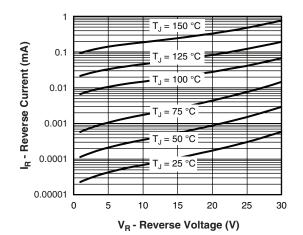


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

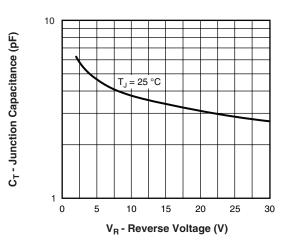


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

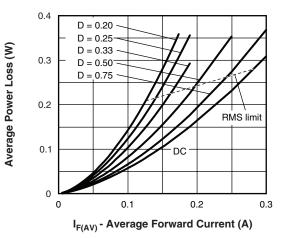


Fig. 4 - Forward Power Loss Characteristics

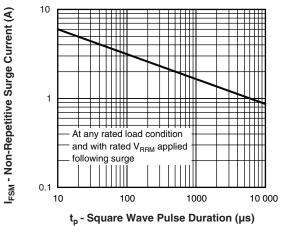


Fig. 5 - Maximum Non-Repetitive Surge Current

BAT54SWPbF

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ORDERING INFORMATION TABLE					
DEVICE	PACKAGE	MARKING	CONFIGURATION	BASE QUANTITY	DELIVERY MODE
BAT54SW	SOT-323	L <u>Y</u> WLC	Dual Series	3000	Tape and reel

LINKS TO RELATED DOCUMENTS			
Dimensions http://www.vishay.com/doc?95050			
Part marking information	http://www.vishay.com/doc?95338		
Packaging information	http://www.vishay.com/doc?95061		



Vishay

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