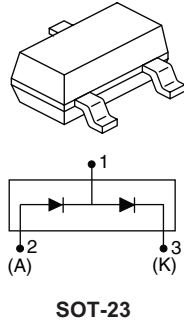


Schottky Diode, 2 x 0.1 A



FEATURES

- 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 (Pb)-free
- Designed and qualified for industrial level


RoHS*
COMPLIANT

PRODUCT SUMMARY

$I_{F(AV)}$	2 x 0.1 A
V_R	30 V

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	VALUES	UNITS
I_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 $T_A = 25$ °C	200	mW
T_J	Range	- 65 to 150	°C

VOLTAGE RATINGS

PARAMETER	SYMBOL	BAT54SPbF	UNITS
Maximum DC reverse voltage	V_R	30	V
Maximum working peak reverse voltage	V_{RWM}		

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum average forward current <small>per leg</small> <small>per device</small>	$I_{F(AV)}$	DC		0.1	A
				0.2	
Maximum peak one cycle non-repetitive surge current at $T_J = 25$ °C	I_{FSM}	5 μ s sine or 3 μ s rect. pulse	Following any rated load condition and with rated V_{RRM} applied	8.4	
		10 ms sine or 6 ms rect. pulse		1.0	

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

ELECTRICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS		VALUES	UNITS
Maximum forward voltage drop	$V_{FM}^{(1)}$	0.1 A	$T_J = 25\text{ }^\circ\text{C}$	0.65	V
		30 mA		0.50	
		10 mA		0.40	
		1 mA		0.32	
		0.1 mA		0.24	
Maximum reverse leakage current	$I_{RM}^{(1)}$	$V_R = 25\text{ V}$		2	μA
		$V_R = 30\text{ V}$		3	
Maximum junction capacitance	C_T	$V_R = 5\text{ V}_{DC}$ (test signal range 100 kHz to 1 MHz), $T_J = 25\text{ }^\circ\text{C}$		10	pF
Maximum voltage rate of change	dV/dt	Rated V_R		10 000	V/ μs

Note

(1) Pulse width < 300 μs , 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	$^\circ\text{C}$
Maximum thermal resistance, junction to ambient	R_{thJA}	Mounted on PC board FR4 with minimum pad size		500	$^\circ\text{C}/\text{W}$
Approximate weight				0.008	g
Marking device		Case style SOT-23		HYWLC	

Note

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

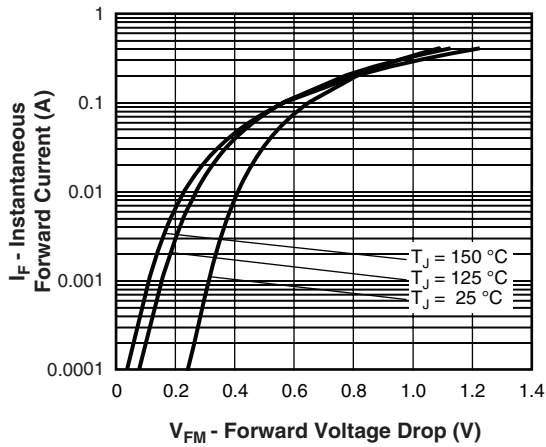


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

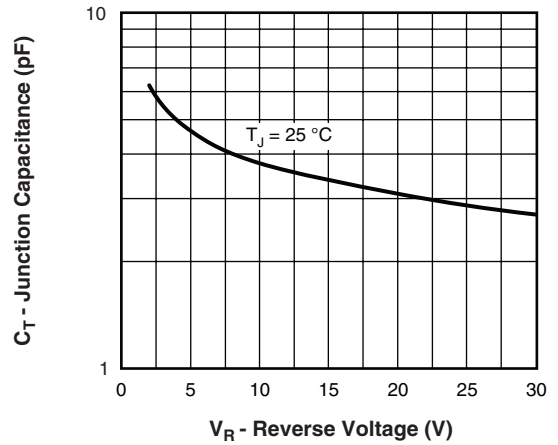


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

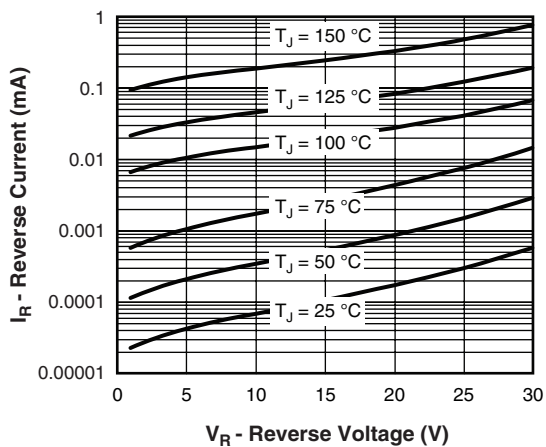


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

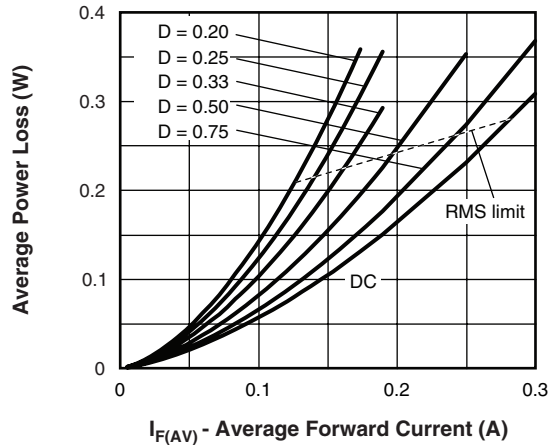


Fig. 4 - Forward Power Loss Characteristics

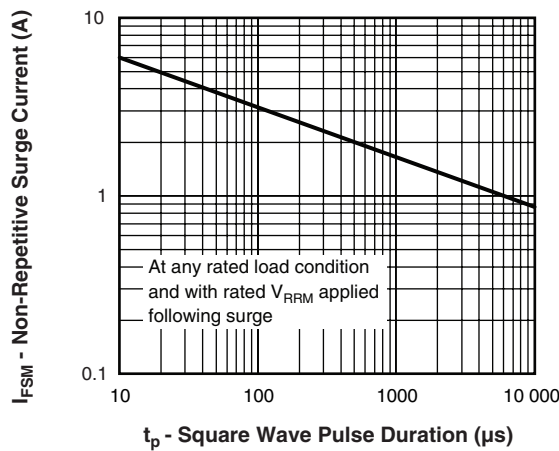


Fig. 5 - Maximum Non-Repulsive Surge Current

BAT54SPbF



Vishay High Power Products Schottky Diode, 2 x 0.1 A

ORDERING INFORMATION TABLE

DEVICE	PACKAGE	MARKING	CONFIGURATION	BASE QUANTITY	DELIVERY MODE
BAT54S	SOT-23	HYWLC	Dual Series	3000	Tape and reel

LINKS TO RELATED DOCUMENTS

Dimensions	http://www.vishay.com/doc?95048
Part marking information	http://www.vishay.com/doc?95338
Packaging information	http://www.vishay.com/doc?95061



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