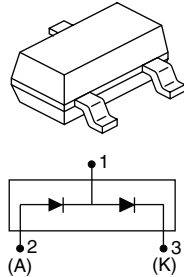


## Schottky Diode, 2 x 0.1 A



SOT-23

### 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
- 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.

### PRODUCT SUMMARY

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

### 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	BAT54S	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 $\mu$ s sine or 3 $\mu$ 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	

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	$\mu\text{A}$
		$V_R = 30\text{ V}$		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/ $\mu\text{s}$

**Note**

(1) Pulse width < 300  $\mu\text{s}$ , 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	$^\circ\text{C}$
Maximum thermal resistance, junction to ambient	$R_{thJA}$	Mounted on PC board FR4 with minimum pad size		500	$^\circ\text{C/W}$
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

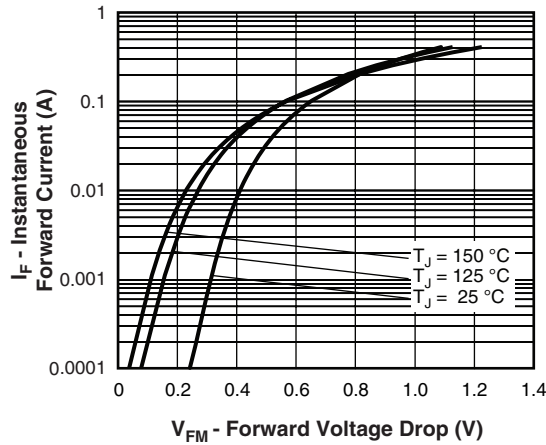


Fig. 1 - Maximum Forward Voltage Drop Characteristics (Per Leg)

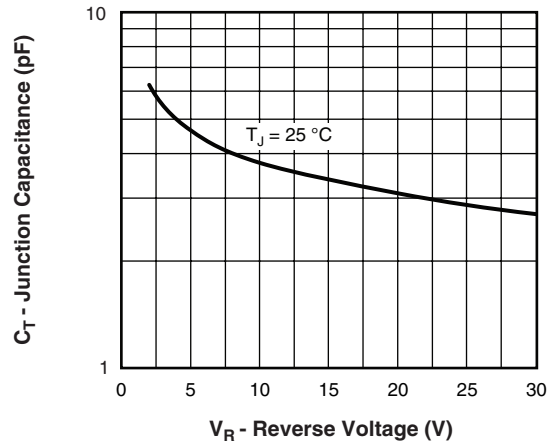


Fig. 3 - Typical Junction Capacitance vs. Reverse Voltage (Per Leg)

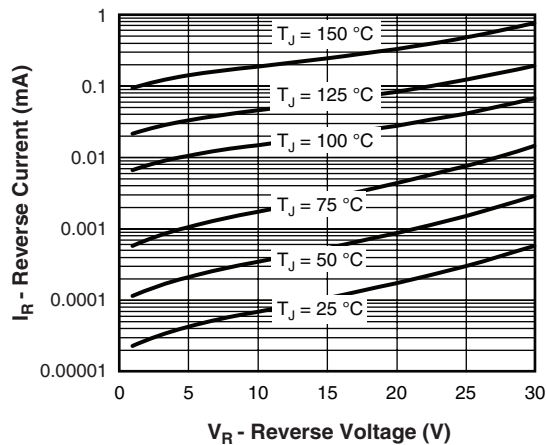


Fig. 2 - Typical Values of Reverse Current vs. Reverse Voltage (Per Leg)

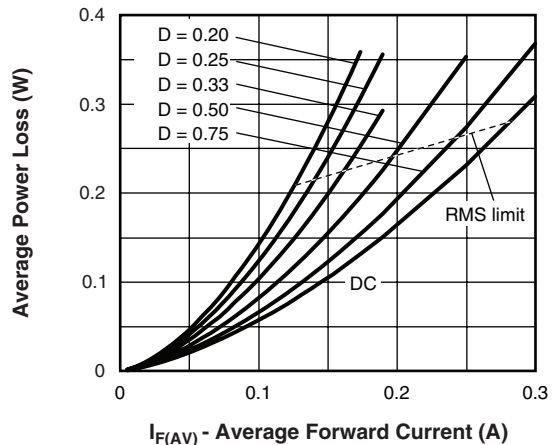


Fig. 4 - Forward Power Loss Characteristics

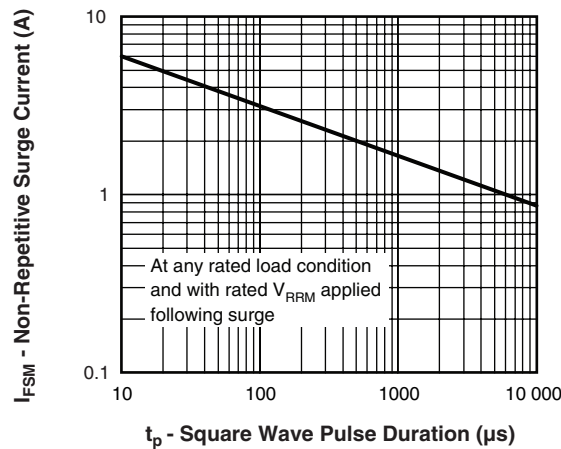


Fig. 5 - Maximum Non-Repetitive Surge Current

# BAT54S

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	<a href="http://www.vishay.com/doc?95048">http://www.vishay.com/doc?95048</a>
Packaging information	<a href="http://www.vishay.com/doc?95061">http://www.vishay.com/doc?95061</a>



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