

## 3A, 1000V Fast Recovery Bridge Rectifier

### FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- UL Recognized File # E-326854
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application

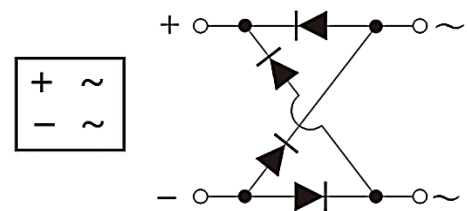
### MECHANICAL DATA

- Case: YBS
- Molding compound meets UL 94V-0 flammability rating
- Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1 whisker test
- Polarity: As marked
- Weight: 0.220g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	3	A
$V_{RRM}$	1000	V
$I_{FSM}$	90	A
$T_{JMAX}$	150	°C
Package	YBS	
Configuration	Quad	



YBS



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	RYBS30M	UNIT
Marking code on the device		RY30M	
Repetitive peak reverse voltage	$V_{RRM}$	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	700	V
Forward current	$I_F$	3	A
Surge peak forward current single half sine-wave superimposed on rated load per diode	$t = 8.3\text{ms}$	90	A
	$t = 1.0\text{ms}$	220	A
Rating for fusing ( $t < 8.3\text{ms}$ )	$I^2t$	33.61	$\text{A}^2\text{s}$
Junction temperature	$T_J$	-55 to +150	°C
Storage temperature	$T_{STG}$	-55 to +150	°C

<b>THERMAL PERFORMANCE</b>			
<b>PARAMETER</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	13	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	58	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	11	°C/W

**Thermal Performance Note:** Units mounted on PCB (16mm x 16mm Cu pad test board)

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage per diode <sup>(1)</sup>	$I_F = 1.5\text{ A}, T_J = 25^\circ\text{C}$	$V_F$	1.01	-	V
	$I_F = 3.0\text{ A}, T_J = 25^\circ\text{C}$		1.10	1.30	V
	$I_F = 1.5\text{ A}, T_J = 125^\circ\text{C}$		0.84	-	V
	$I_F = 3.0\text{ A}, T_J = 125^\circ\text{C}$		0.95	1.17	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		-	167	$\mu\text{A}$
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	$C_J$	35	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{rr} = 0.25\text{A}$	$t_{rr}$	-	300	ns

**Notes:**

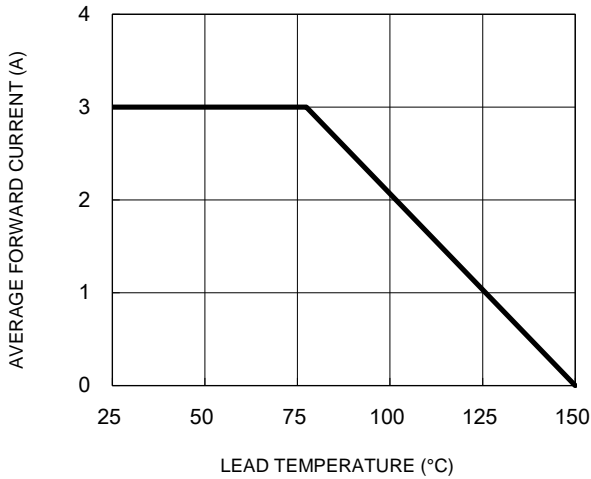
1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
RYBS30M	YBS	3,000 / Tape & Reel

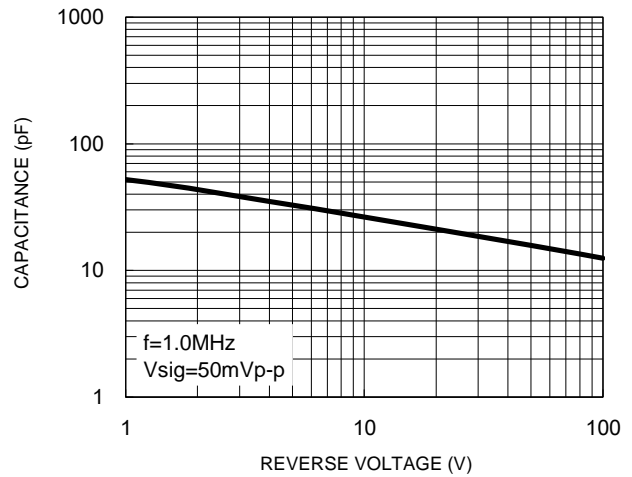
**CHARACTERISTICS CURVES**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

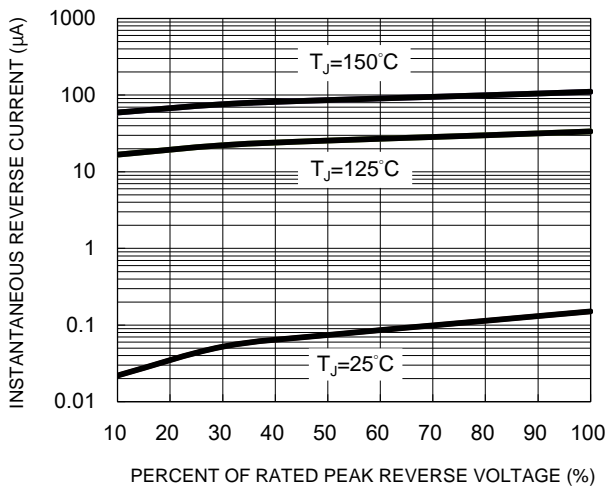
**Fig.1 Forward Current Derating Curve**



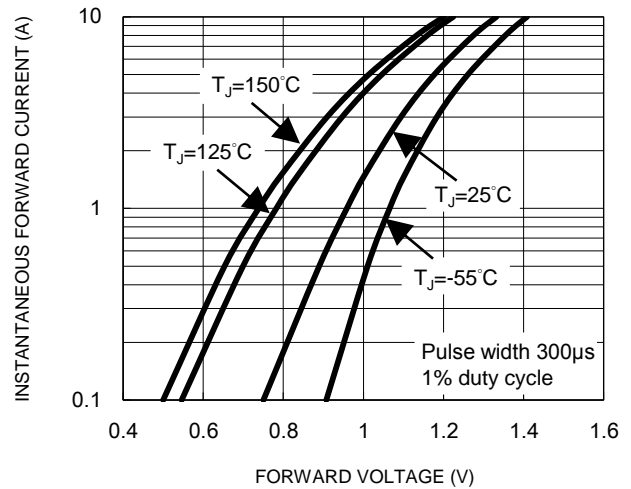
**Fig.2 Typical Junction Capacitance**



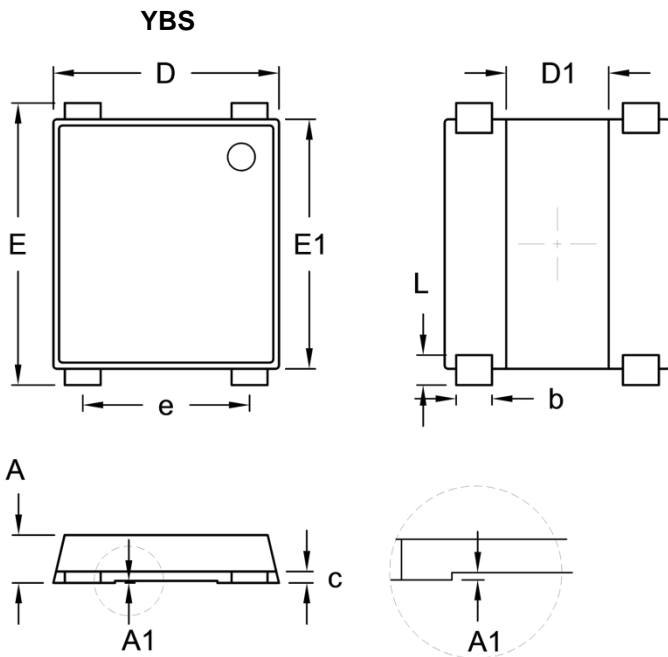
**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

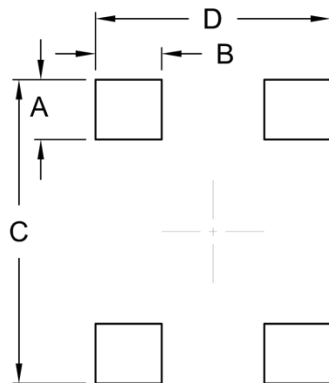


**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.30	1.50	0.051	0.059
A1	0.04	0.08	0.002	0.003
b	0.95	1.15	0.037	0.045
c	0.27	0.40	0.011	0.016
D	6.50	6.70	0.256	0.264
D1	2.90	3.10	0.114	0.122
E	7.90	8.60	0.311	0.339
E1	7.20	7.40	0.283	0.291
e	5.00	5.20	0.197	0.205
L	0.70	1.05	0.028	0.041

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	1.80	0.070
B	2.00	0.078
C	9.15	0.360
D	7.10	0.279

**MARKING DIAGRAM**



P/N = Marking Code  
 YW = Date Code  
 F = Factory Code

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