

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

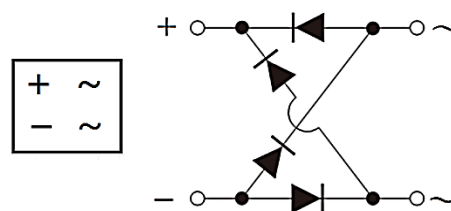
MECHANICAL DATA

- 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
$T_{J\ MAX}$	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	A^2s
Junction temperature	T_J	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
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)

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 1.5\text{ A}, T_J = 25^\circ\text{C}$	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 ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	5	μA
	$T_J = 125^\circ\text{C}$		-	167	μA
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

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

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

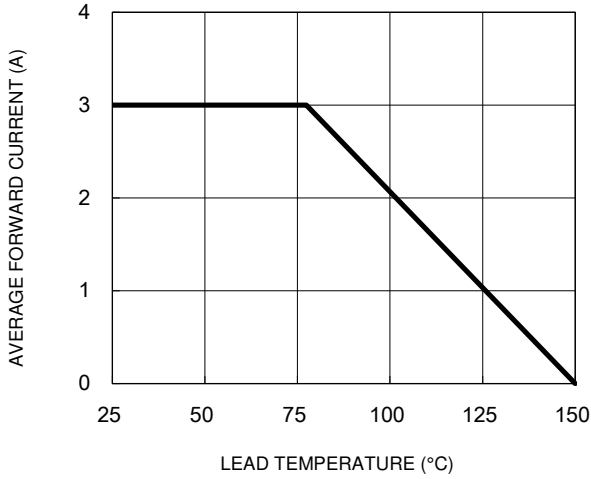


Fig.2 Typical Junction Capacitance

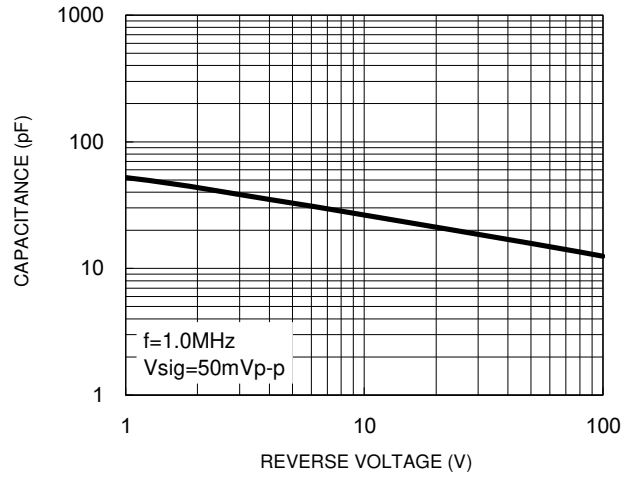


Fig.3 Typical Reverse Characteristics

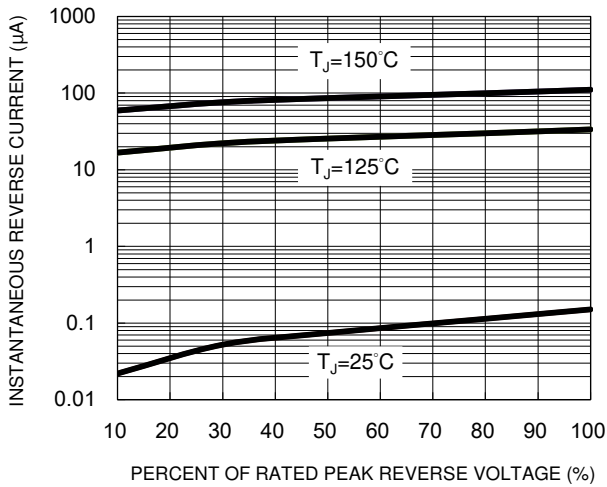
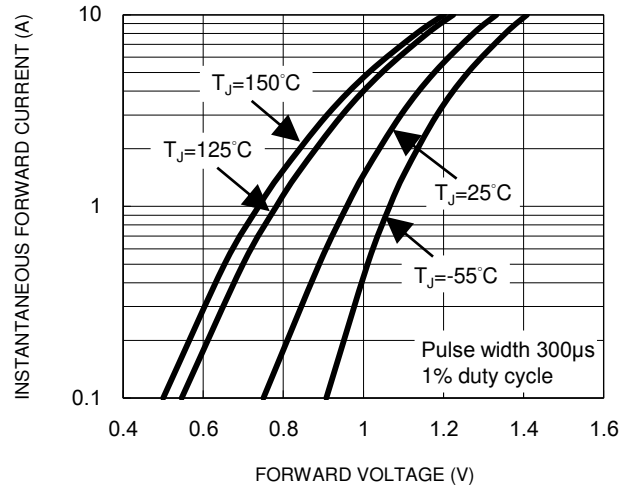
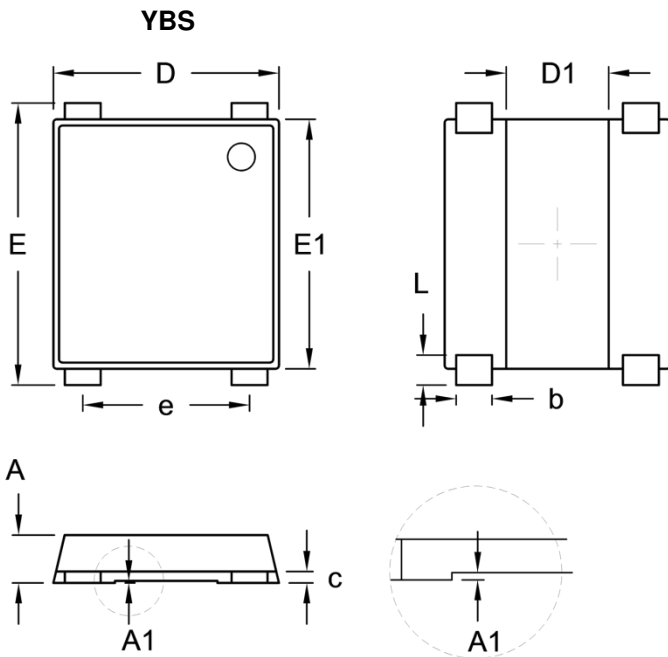


Fig.4 Typical Forward Characteristics

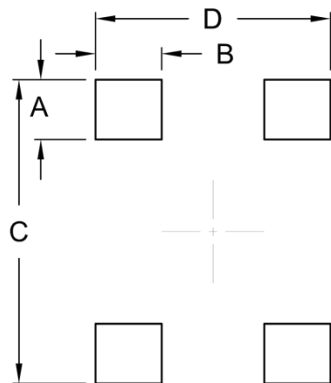


PACKAGE OUTLINE DIMENSIONS



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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