

3A, 1000V Fast Recovery Glass Passivated Bridge Rectifier

FEATURES

- Glass passivated 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

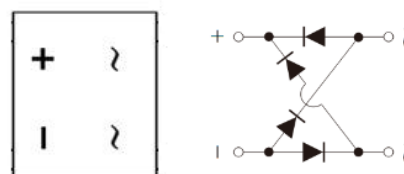
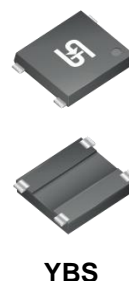
APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

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: 0.22g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	3.0	A
V_{RRM}	1000	V
I_{FSM}	90	A
T_{JMAX}	150	°C
Package	YBS	
Configuration	Quad	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER		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	3.0	A
Surge peak forward current single half sine-wave superimposed on rated load per diode	8.3 ms at $T_A = 25^\circ\text{C}$	90	A
	1.0 ms at $T_A = 25^\circ\text{C}$	220	A
I^2t value (of a surge on-state current) at 8.3ms	I^2t	33	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 recommended 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 ⁽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 ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	5	μA
	$T_J = 125^\circ\text{C}$		-	167	μA
Junction capacitance	1 MHz, $V_R = 4.0\text{V}$	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=0.3 ms
2. Pulse test with PW=30 ms

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
RYBS30M M2G	YBS	3,000 / 13" Reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

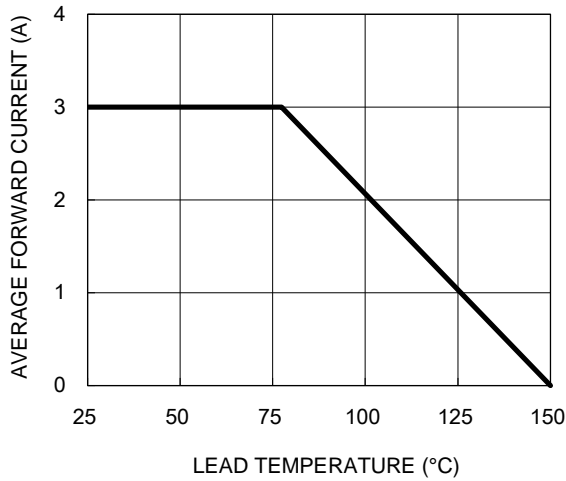


Fig.2 Typical Junction Capacitance

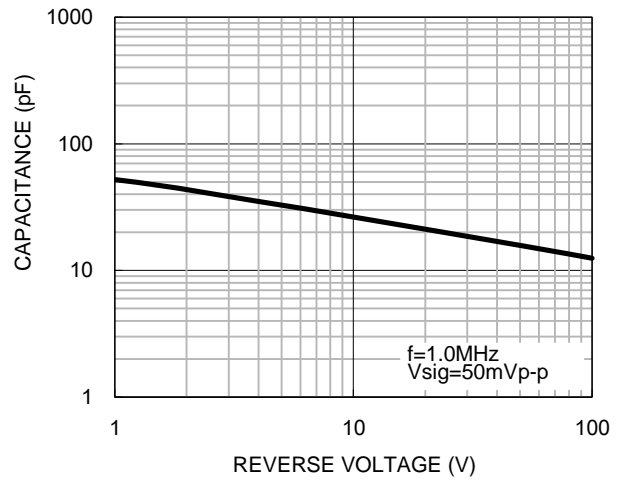


Fig.3 Typical Reverse Characteristics

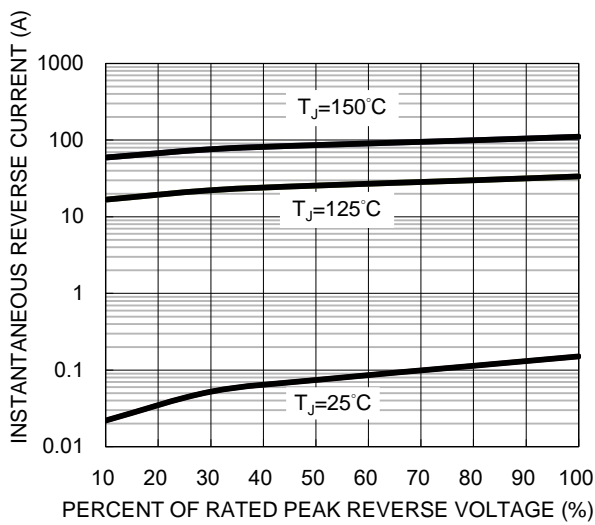
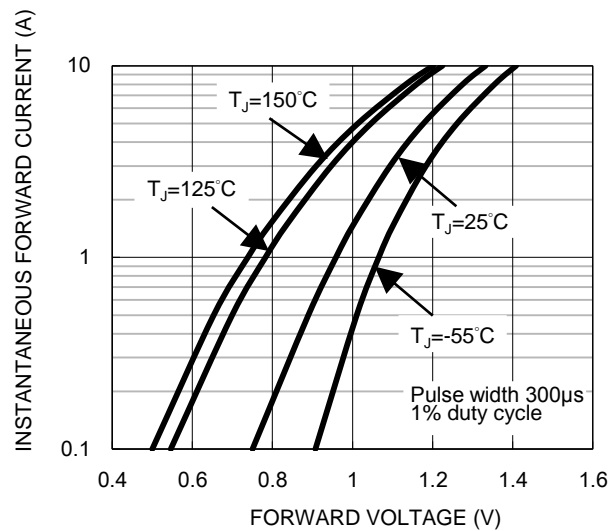
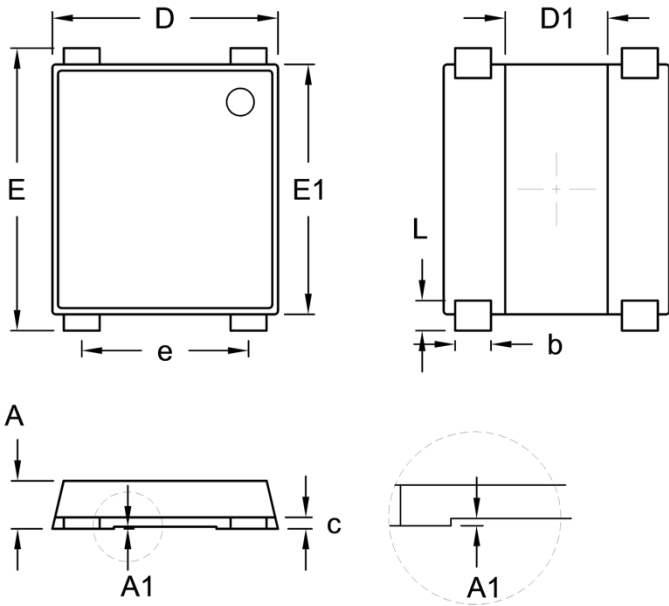


Fig.4 Typical Forward Characteristics



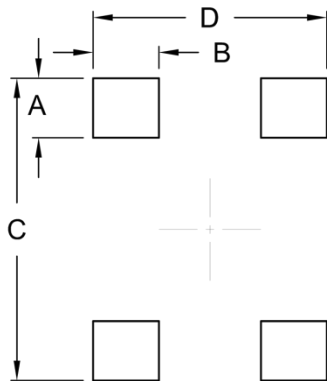
PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)

YBS



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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