

3A, 400V - 1000V Glass Passivated Bridge Rectifier

FEATURES

- Glass passivated junction
- Ideal for automated placement
- Reliable low cost construction utilizing molded plastic technique
- High surge current capability
- UL Recognized File # E-326854
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

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

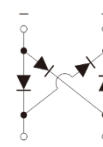
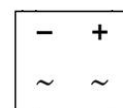
MECHANICAL DATA

- Case: YBS
- Molding compound meets UL 94V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 0.22g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	3	A
V_{RRM}	400 - 1000	V
I_{FSM}	110	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	YBS 3004G	YBS 3005G	YBS 3006G	YBS 3007G	UNIT
Marking code on the device		YBS 3004G	YBS 3005G	YBS 3006G	YBS 3007G	
Repetitive peak reverse voltage	V _{RRM}	400	600	800	1000	V
Reverse voltage, total rms value	V _{R(RMS)}	280	420	560	700	V
Forward current	I _{F(AV)}	3				A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	25°C	110			A
		125°C	88			
Surge peak forward current, 1 ms single half sine-wave superimposed on rated load	I _{FSM}	25°C	220			A
		125°C	175			
I ² t value (of a surge on-state current) ⁽¹⁾	I ² t	50				A ² s
Junction temperature	T _J	-55 to +150				°C
Storage temperature	T _{STG}	-55 to +150				°C

Note:

1. Pulse test with PW=8.3 ms single half sine-wave

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	22	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	61	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	9	°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 per diode ⁽¹⁾	$I_F = 1.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.89	1.02	V
	$I_F = 3.0\text{A}, T_J = 25^\circ\text{C}$		0.93	1.10	V
	$I_F = 1.5\text{A}, T_J = 125^\circ\text{C}$		0.76	0.90	V
	$I_F = 3.0\text{A}, T_J = 125^\circ\text{C}$		0.82	1.00	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	5	μA
	$T_J = 125^\circ\text{C}$		-	100	μA
Junction capacitance	1 MHz, $V_R = 4.0\text{V}$	C_J	33	-	pF

Notes:

- Pulse test with $PW = 0.3\text{ ms}$
- Pulse test with $PW = 30\text{ ms}$

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
YBS30xxG (Note 1, 2)	RA	G	YBS	3,000 / 13" Plastic reel

Notes:

- "xx" defines voltage from 400V (YBS3004G) to 1000V (YBS3007G)
- Whole series with green compound (halogen-free)

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
YBS3007G RAG	YBS3007G	RA	G	Green compound

CHARACTERISTICS CURVES

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

Fig1. Forward Current Derating Curve

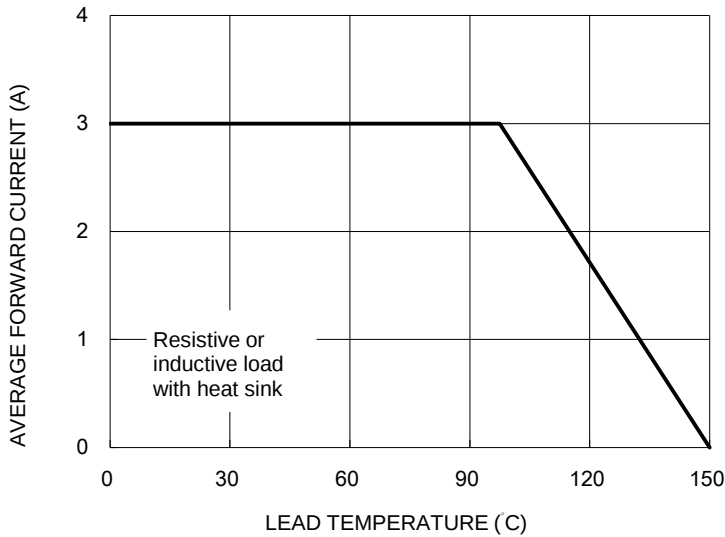


Fig2. Typical Junction Capacitance

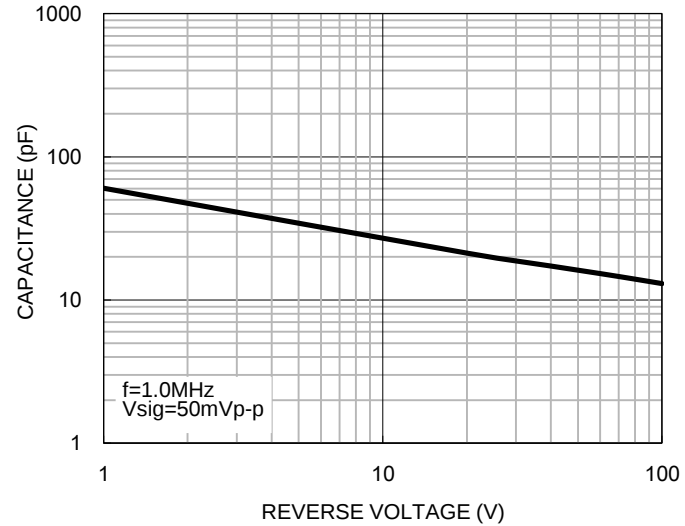


Fig3. Typical Reverse Characteristics

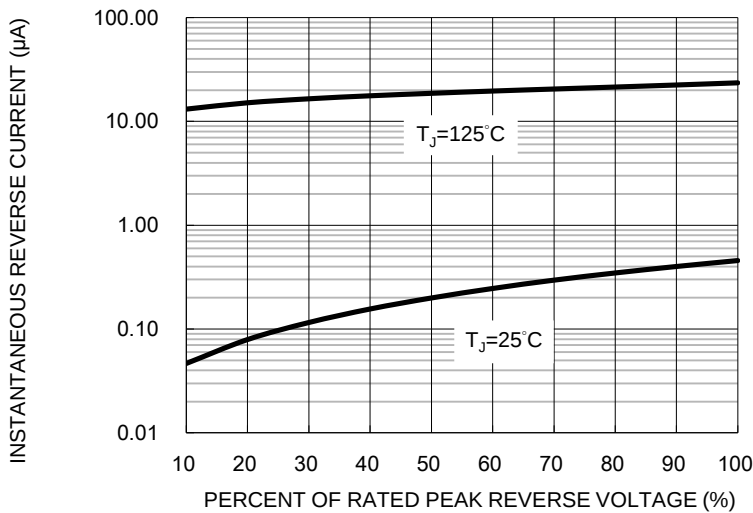
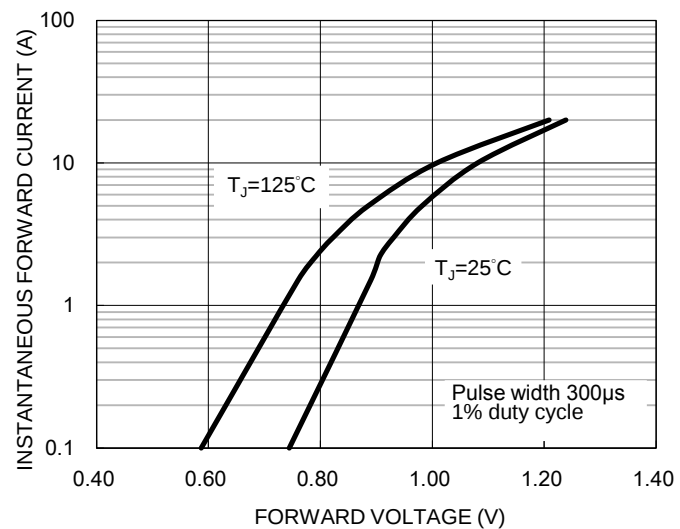
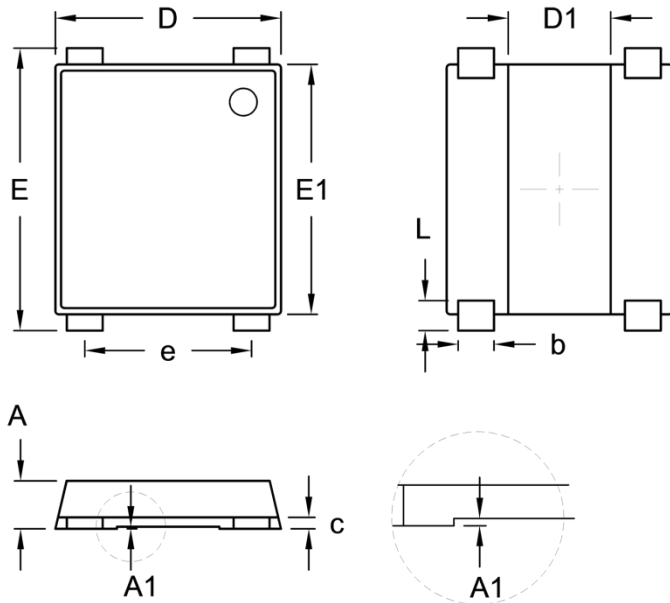


Fig4. Typical Forward Characteristics



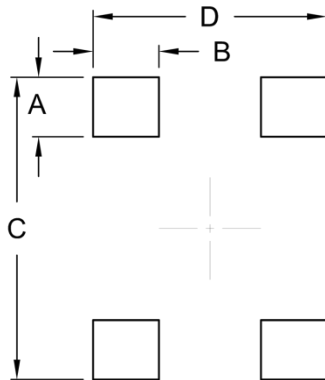
PACKAGE OUTLINE DIMENSIONS (Unit: Millimeters)

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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale