

## 2.2A, 400V-1000V Glass Passivated Bridge Rectifiers

### FEATURES

- Glass passivated junction
- Ideal for automated placement
- Reliable low cost construction utilizing molded plastic technique
- High surge current capability
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

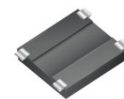
### APPLICATIONS

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

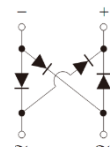
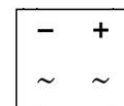
### MECHANICAL DATA

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

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	2.2	A
$V_{RRM}$	400-1000	V
$I_{FSM}$	90	A
$V_F$ at $I_F=1.1A$	0.92	V
$T_{JMAX}$	150	°C
Package	YBS	
Configuration	Quad	



YBS



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

PARAMETER	SYMBOL	YBS 2204G	YBS 2205G	YBS 2206G	YBS 2207G	UNIT
Marking code on the device		YBS2204G	YBS2205G	YBS2206G	YBS2207G	
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	$I_{F(AV)}$	2.2				A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	90				A
$I^2t$ value (of a surge on-state current)	$I^2t$	33				A <sup>2</sup> 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>LIMIT</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	40	$^{\circ}\text{C/W}$
Junction-to-ambient thermal resistance	$R_{\theta JA}$	50	$^{\circ}\text{C/W}$
Junction-to-case thermal resistance	$R_{\theta JC}$	28	$^{\circ}\text{C/W}$

**Thermal Performance Note:** Units mounted on recommended PCB (16mm x 16mm Cu 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 <sup>(1)</sup>	$I_F = 1.1\text{A}, T_J = 25^{\circ}\text{C}$	$V_F$	0.86	0.92	V
	$I_F = 2.2\text{A}, T_J = 25^{\circ}\text{C}$		0.91	0.97	V
	$I_F = 1.1\text{A}, T_J = 125^{\circ}\text{C}$		0.73	0.9	V
	$I_F = 2.2\text{A}, T_J = 125^{\circ}\text{C}$		0.78	0.95	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^{\circ}\text{C}$	$I_R$	0.2	5	$\mu\text{A}$
	$T_J = 125^{\circ}\text{C}$		35	100	$\mu\text{A}$
Total capacitance	1 MHz, $V_R = 4.0\text{V}$	$C_t$	70	90	$\rho\text{F}$
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$	$t_{rr}$	2400	4000	ns

**Notes:**

1. Pulse test with  $PW = 0.3\text{ ms}$
2. Pulse test with  $PW = 30\text{ ms}$

<b>ORDERING INFORMATION</b>				
<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>PACKAGE</b>	<b>PACKING</b>
YBS22xxG <sup>(1, 2)</sup>	RA	G	YBS	3,000 / 13" Plastic reel

**Notes:**

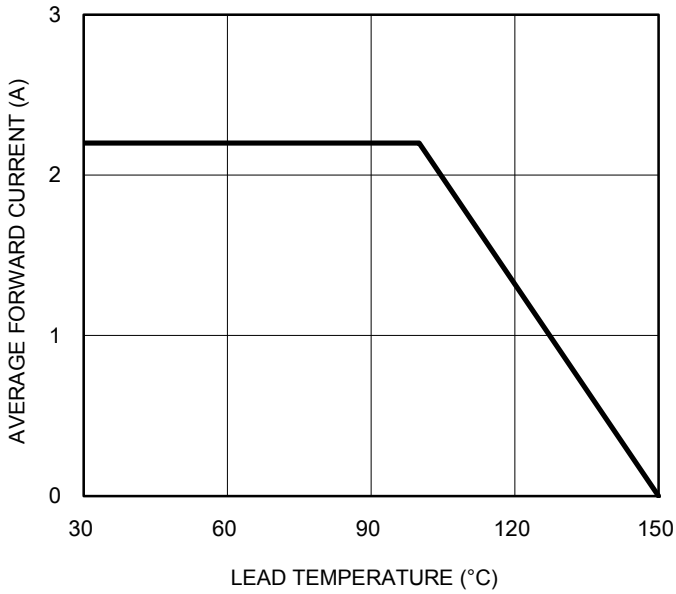
1. "xx" defines voltage from 400V (YBS2204G) to 1000V (YBS2207G)
2. Whole series with green compound

<b>EXAMPLE</b>				
<b>PREFERRED P/N</b>	<b>PART NO.</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
YBS2207G RAG	YBS2207G	RA	G	Green compound

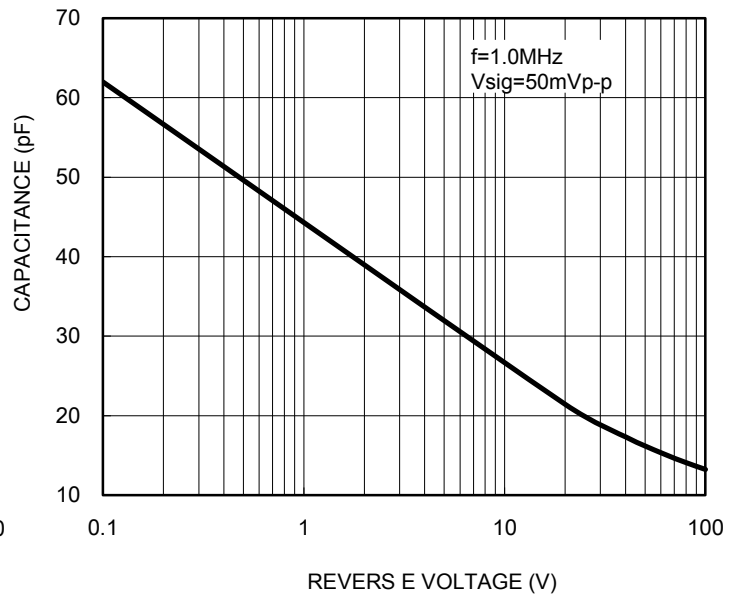
**CHARACTERISTICS CURVES**

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

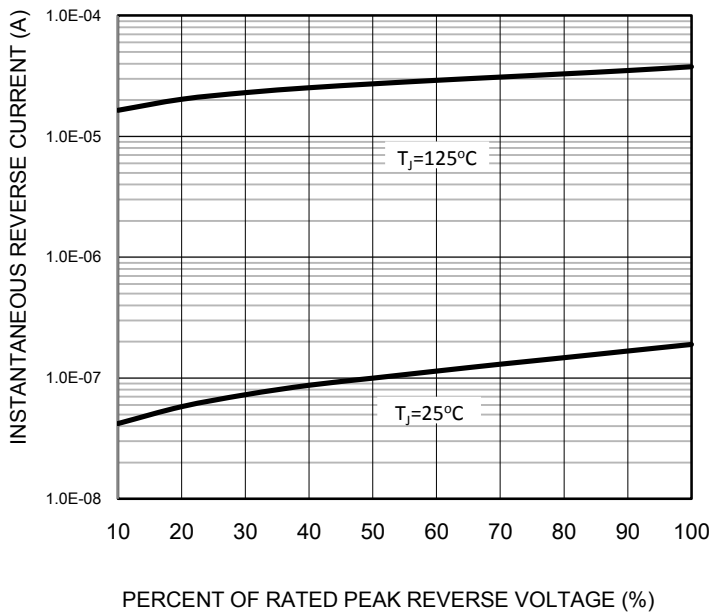
**Forward Current Derating Curve**



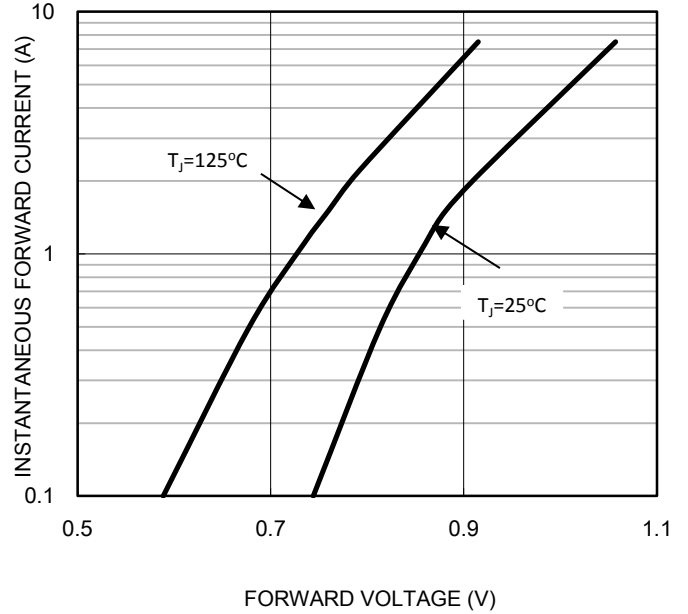
**Total Capacitance Characteristics**



**Typical Reverse Characteristics**

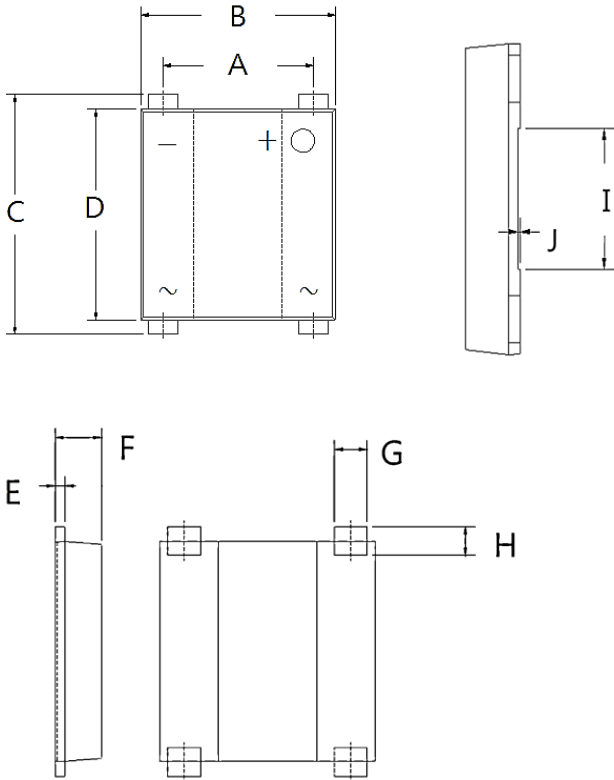


**Typical Forward Characteristics**



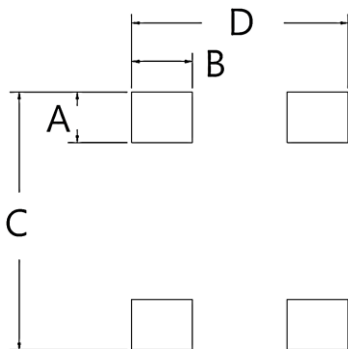
**PACKAGE OUTLINE DIMENSIONS**

YBS



DIM	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	5.00	5.20	0.197	0.205
B	6.50	6.70	0.256	0.264
C	7.90	8.60	0.311	0.339
D	7.20	7.40	0.283	0.291
E	0.27	0.40	0.011	0.016
F	1.30	1.50	0.051	0.059
G	0.95	1.15	0.037	0.045
H	0.70	1.05	0.028	0.041
I	2.90	3.10	0.114	0.122
J	0.04	0.08	0.002	0.003

**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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