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TAIWAN SEMICONDUCTOR

YBS3004G – YBS3007G

Taiwan Semiconductor

3A, 400V - 1000V Standard Bridge Rectifier

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Reliable low cost construction utilizing molded plastic technique
- High surge current capability
- 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

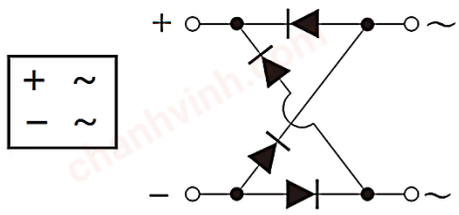
- Case: YBS
- Molding compound meets UL 94V-0 flammability rating
- Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 0.220g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	3	A
V_{RRM}	400 - 1000	V
I_{FSM}	110	A
$T_{J\ MAX}$	150	°C
Package	YBS	
Configuration	Quad	

Pb-Free RoHS COMPLIANT HALOGEN FREE



YBS



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER			SYMBOL	YBS 3004G	YBS 3005G	YBS 3006G	YBS 3007G	UNIT
Marking code on the device				YBS3004G	YBS3005G	YBS3006G	YBS3007G	
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	3				A
Surge peak forward current, single half sine-wave superimposed on rated load	t = 8.3ms	25°C	I_{FSM}	110				A
		125°C		88				A
	t = 1.0ms	25°C		220				A
		125°C		175				A
Rating for fusing (t<8.3ms)			I^2t	50.21				A^2s
Junction temperature			T_J	-55 to +150				°C
Storage temperature			T_{STG}	-55 to +150				°C

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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 PCB (16mm x 16mm Cu pad test board)

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode(1)	I_F = 1.5A, T_J = 25°C	V_F	0.89	1.02	V
	I_F = 3.0A, T_J = 25°C		0.93	1.10	V
	I_F = 1.5A, T_J = 125°C		0.76	0.90	V
	I_F = 3.0A, T_J = 125°C		0.82	1.00	V
Reverse current @ rated V_R per diode(2)	T_J = 25°C	I_R	-	5	μA
	T_J = 125°C		-	100	μA
Junction capacitance per diode	1MHz, V_R = 4.0V	C_J	33	-	pF

Notes:

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

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
YBS3xG	YBS	3,000 / Tape & Reel

Notes:

1. "x" defines voltage from 400V(YBS3004G) to 1000V(YBS3007G)

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CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

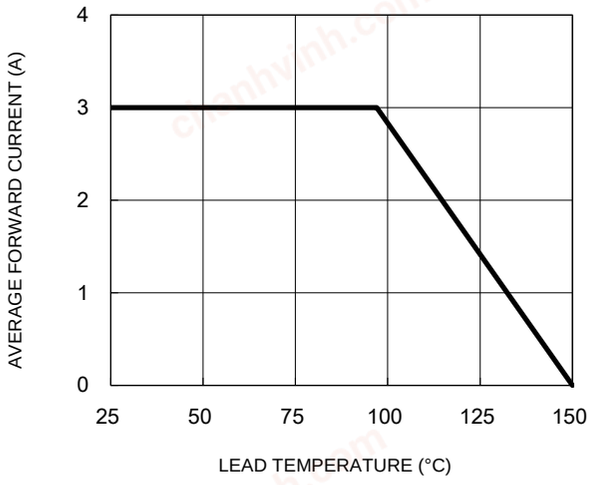


Fig.2 Typical Junction Capacitance

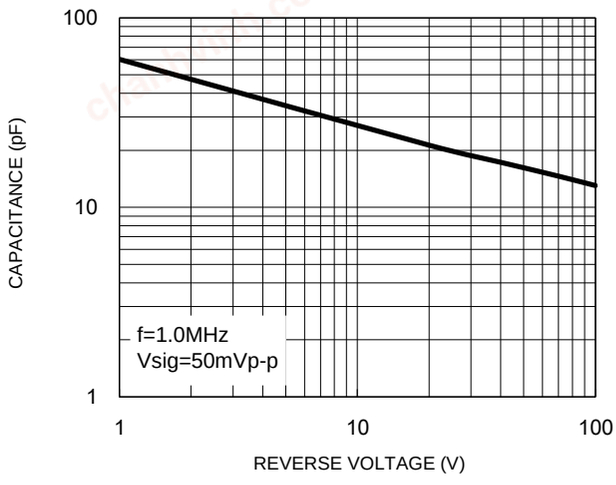


Fig.3 Typical Reverse Characteristics

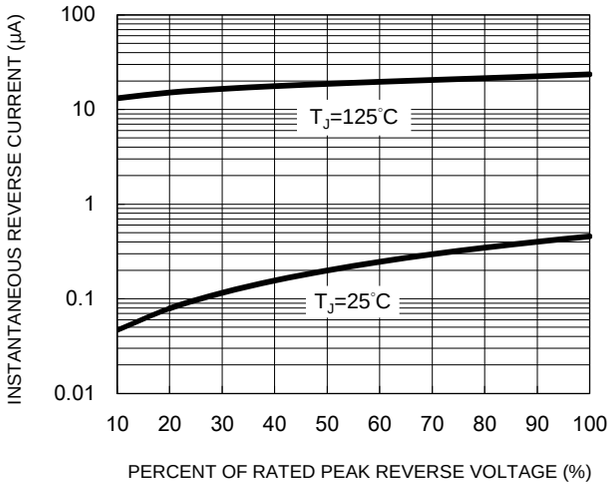
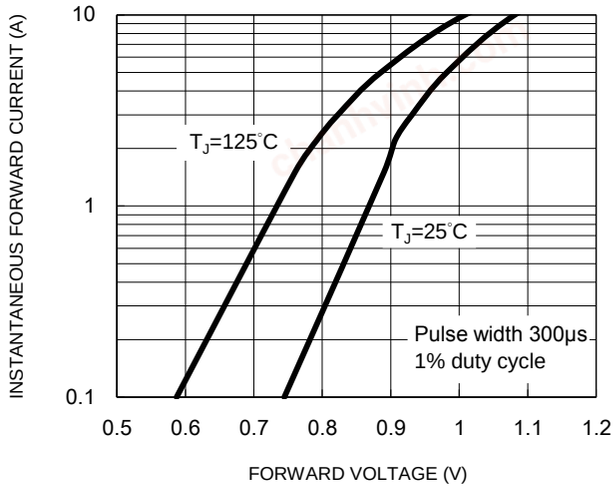


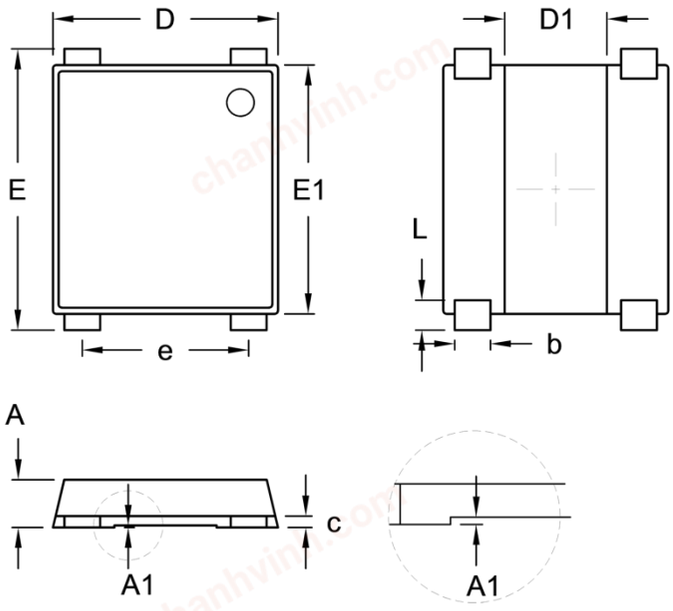
Fig.4 Typical Forward Characteristics



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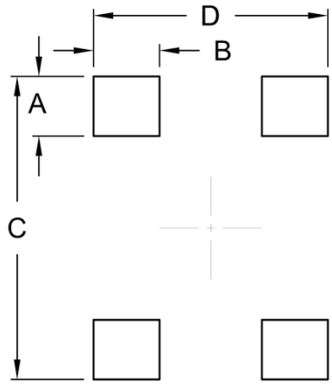
PACKAGE OUTLINE DIMENSIONS

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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