

## 25A, 400V - 1000V Glass Passivated Single-Phase Bridge Rectifier

### FEATURES

- Ideal for printed circuit board
- High surge current capability
- Low forward drop enhance the efficiency
- UL Recognized File # E-326243
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC

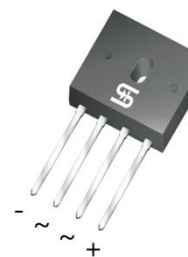
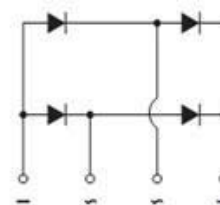
### APPLICATIONS

- General purpose single phase bridge rectifier
- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

### MECHANICAL DATA

- Case: GBU
- Molding compound: UL flammability classification rating 94V-0
- Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Mounting torque: 0.56 Nm max
- Polarity: As marked
- Weight: 4g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	25	A
$V_{RRM}$	400 - 1000	V
$I_{FSM}$	300	A
$T_{JMAX}$	150	°C
Package	GBU	
Configuration	Quad	


**GBU**


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

PARAMETER	SYMBOL	GBU2504	GBU2505	GBU2506	GBU2507	UNIT
Marking code on the device		GBU2504	GBU2505	GBU2506	GBU2507	
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	$I_{F(AV)}$	25				A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	300				A
$I^2t$ value (of a surge on-state current)	$I^2t$	373				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>TYP</b>	<b>UNIT</b>
Junction-to-lead thermal resistance	$R_{\theta JL}$	6	$^{\circ}C/W$
Junction-to-ambient thermal resistance	$R_{\theta JA}$	22	$^{\circ}C/W$
Junction-to-case thermal resistance	$R_{\theta JC}$	7	$^{\circ}C/W$

**Thermal Performance Note:** Mounted on Heat sink Size of 4"x6"x0.25" Al -Plate.

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^{\circ}C$ unless otherwise noted)					
<b>PARAMETER</b>	<b>CONDITIONS</b>	<b>SYMBOL</b>	<b>TYP</b>	<b>MAX</b>	<b>UNIT</b>
Forward voltage per diode <sup>(1)</sup>	$I_F = 12.5A, T_J = 25^{\circ}C$	$V_F$	0.99	1.10	V
	$I_F = 25A, T_J = 25^{\circ}C$		1.08	1.20	V
	$I_F = 12.5A, T_J = 125^{\circ}C$		0.89	1.00	V
	$I_F = 25A, T_J = 125^{\circ}C$		1.03	1.15	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^{\circ}C$	$I_R$	-	10	$\mu A$
	$T_J = 125^{\circ}C$		-	500	$\mu A$
Junction capacitance	1 MHz, $V_R = 4.0V$	$C_J$	100	-	pF

**Note:**

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

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b> (Note 1,2)	<b>PACKAGE</b>	<b>PACKING</b>
GBU250x D2	GBU	20 / TUBE
GBU250x D2G	GBU	20 / TUBE

**Note 1:**

"x" defines voltage from 400V (GBU2504) to 1000V (GBU2507)

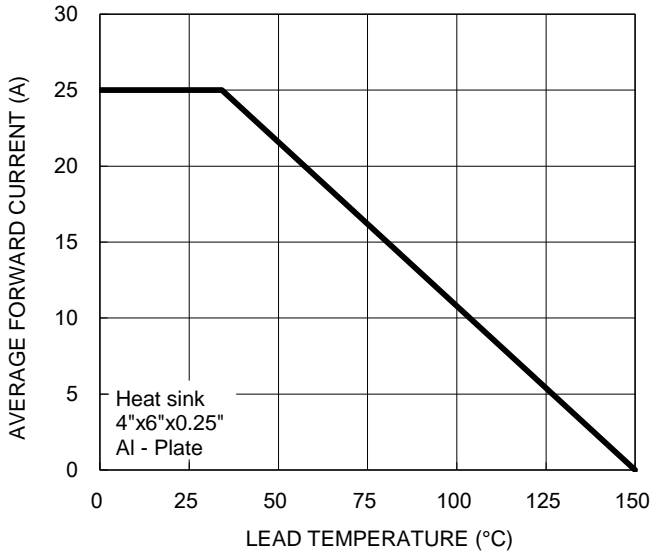
**Note 2:**

"G" means green compound (halogen free)

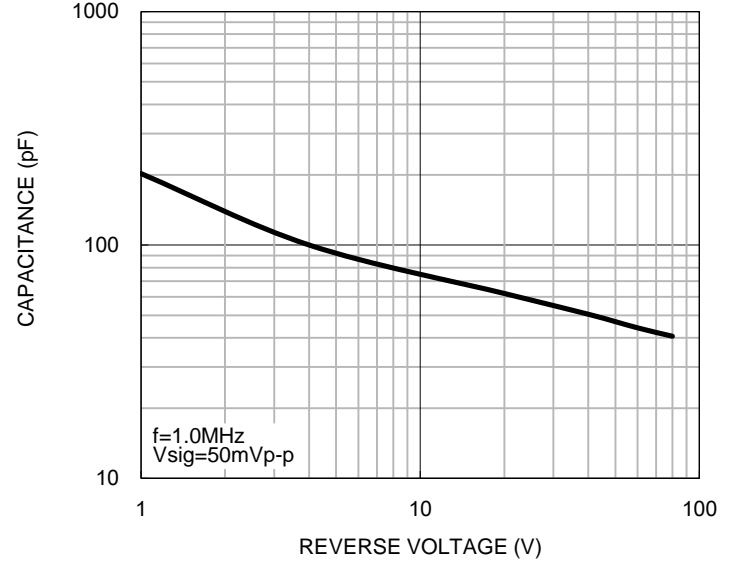
**CHARACTERISTICS CURVES**

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

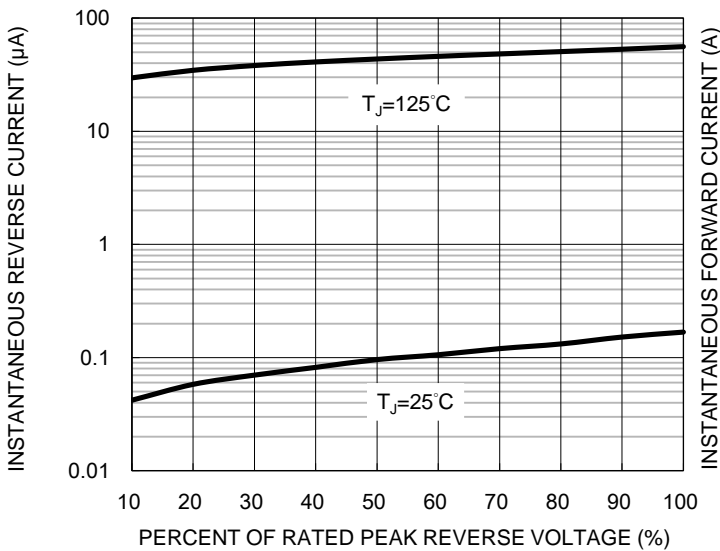
**Fig.1 Forward Current Derating Curve**



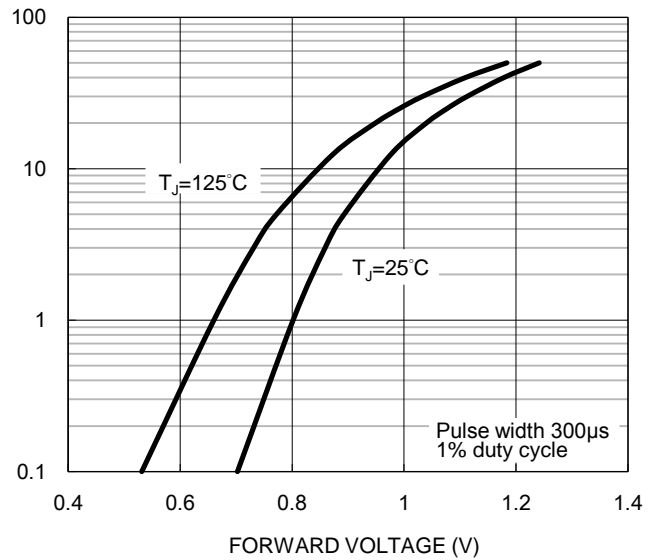
**Fig.2 Typical Junction Capacitance**

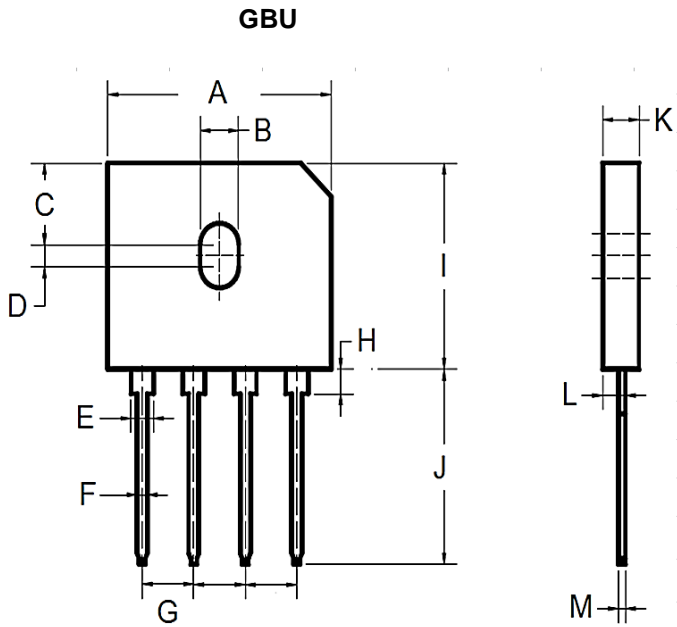


**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



**PACKAGE OUTLINE DIMENSIONS**


DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	21.80	22.30	0.858	0.878
B	3.50	4.10	0.138	0.161
C	7.40	7.90	0.291	0.311
D	1.65	2.16	0.065	0.085
E	2.06	2.54	0.081	0.100
F	1.02	1.27	0.040	0.050
G	4.83	5.33	0.190	0.210
H	1.91	2.54	0.075	0.100
I	18.30	18.80	0.720	0.740
J	17.50	18.00	0.689	0.709
K	3.30	3.56	0.130	0.140
L	2.40	2.66	0.094	0.105
M	0.46	0.56	0.018	0.022

**MARKING DIAGRAM**


- P/N = Marking code
- G = Green compound
- YWW = Date Code
- F = Factory Code

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