

## 4A, 50V - 1000V Glass Passivated Single-Phase Bridge Rectifier

### FEATURES

- Ideal for printed circuit board
- High case dielectric strength of 1500 V<sub>RMS</sub>
- High surge current capability
- UL Recognized File # E-326243
- 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

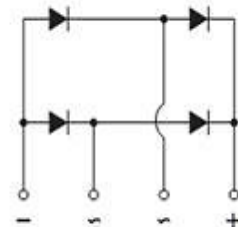
### MECHANICAL DATA

- Case: GBU
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Part no. with suffix "H" means AEC-Q101 qualified
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: As marked
- Weight: 4 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I <sub>F(AV)</sub>	4	A
V <sub>RRM</sub>	50 - 1000	V
I <sub>FSM</sub>	150	A
T <sub>J MAX</sub>	150	°C
Package	GBU	
Configuration	Quad	



GBU



### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)

PARAMETER	SYMBOL	GBU 401	GBU 402	GBU 403	GBU 404	GBU 405	GBU 406	GBU 407	UNIT
Marking code on the device		GBU 401	GBU 402	GBU 403	GBU 404	GBU 405	GBU 406	GBU 407	
Repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	V <sub>R(RMS)</sub>	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	V
Forward current	I <sub>F(AV)</sub>	4							A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode)	T <sub>J</sub> =25°C	150							A
	T <sub>J</sub> =125°C	80							

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

PARAMETER	SYMBOL	GBU 401	GBU 402	GBU 403	GBU 404	GBU 405	GBU 406	GBU 407	UNIT
Surge peak forward current, 1.0 ms single half sine-wave superimposed on rated load per diode	$T_J=25^\circ\text{C}$	280							A
	$T_J=125^\circ\text{C}$	260							
Rating of fusing ( $t < 8.3\text{ms}$ )	$I^2t$	93							$\text{A}^2\text{s}$
Junction temperature	$T_J$	- 55 to +150							$^\circ\text{C}$
Storage temperature	$T_{\text{STG}}$	- 55 to +150							$^\circ\text{C}$

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\text{EJA}}$	20	$^\circ\text{C}/\text{W}$
Junction-to-case thermal resistance	$R_{\text{EJC}}$	4	$^\circ\text{C}/\text{W}$

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode <sup>(1)</sup>	$I_F=2\text{A}, T_J=25^\circ\text{C}$	$V_F$	-	1.0	V
	$I_F=4\text{A}, T_J=25^\circ\text{C}$		-	1.1	V
Reverse current @ rated $V_R$ per diode <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
	$T_J=125^\circ\text{C}$		-	500	$\mu\text{A}$
Junction capacitance	1 MHz, $V_R=4.0\text{V}$	$C_J$	100	-	pF
			45	-	pF

**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>PART NO. SUFFIX</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX(*)</b>	<b>PACKAGE</b>	<b>PACKING</b>
GBU40x (Note 1)	H	C2	G	GBU	20 / Tube
		D2			20 / Tube
		X0			Forming

**Note:**

1. "x" defines voltage from 50V (GBU401) to 1000V (GBU407)

\*: Optional available

<b>EXAMPLE P/N</b>					
<b>EXAMPLE P/N</b>	<b>PART NO.</b>	<b>PART NO. SUFFIX</b>	<b>PACKING CODE</b>	<b>PACKING CODE SUFFIX</b>	<b>DESCRIPTION</b>
GBU406HC2G	GBU406	H	C2	G	AEC-Q101 qualified Green compound

**CHARACTERISTICS CURVES**

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

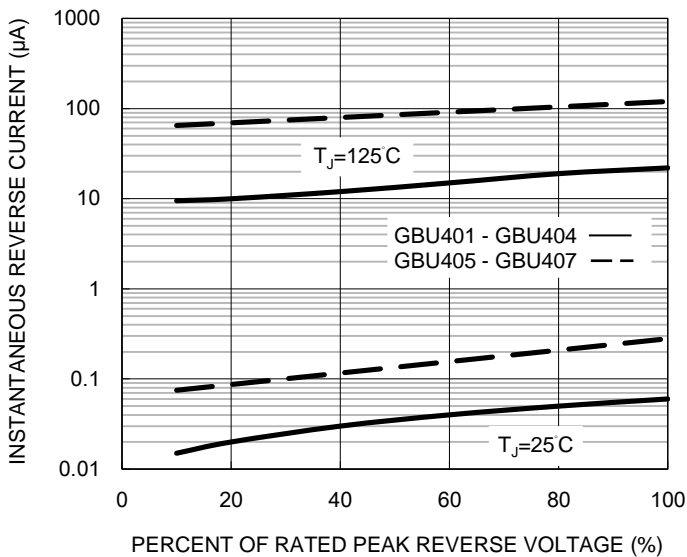
**Fig.1 Forward Current Derating Curve**



**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



**CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25°C unless otherwise noted)

**Fig.5 Maximum Non-repetitive Forward Surge Current**



**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	2.16	2.54	0.085	0.100
F	1.65	2.03	0.065	0.080
G	1.52	2.03	0.060	0.080
H	1.02	1.27	0.040	0.050
I	4.83	5.33	0.190	0.210
J	3.30	3.56	0.130	0.140
K	18.30	18.80	0.720	0.740
L	17.50	18.00	0.689	0.709
M	1.90	2.16	0.075	0.085
N	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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