

## 4A, 50V - 1000V Standard Bridge Rectifier

### FEATURES

- AEC-Q101 qualified available
- Ideal for printed circuit board
- High case dielectric strength of 1500V<sub>RMS</sub>
- High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

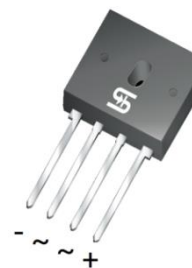
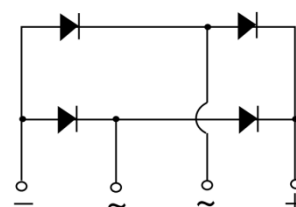
### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application

### MECHANICAL DATA

- Case: GBU
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: As marked
- Weight: 4.00g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	4	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	150	A
$T_{J\ MAX}$	150	°C
Package	GBU	
Configuration	Quad	


**GBU**


### 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
Marking code on the device		GBU 401	GBU 402	GBU 403	GBU 404	GBU 405	GBU 406	GBU 407	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Forward current	$I_F$	4							A
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load	$T_J = 25^\circ\text{C}$	150							A
	$T_J = 125^\circ\text{C}$	80							A
Surge peak forward current, 1.0ms single half sine-wave superimposed on rated load	$T_J = 25^\circ\text{C}$	280							A
	$T_J = 125^\circ\text{C}$	260							A

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	GBU 401	GBU 402	GBU 403	GBU 404	GBU 405	GBU 406	GBU 407	UNIT
Rating for 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							$^\circ\text{C}$

<b>THERMAL PERFORMANCE</b>			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta\text{JA}}$	20	$^\circ\text{C}/\text{W}$
Junction-to-case thermal resistance	$R_{\theta\text{JC}}$	4	$^\circ\text{C}/\text{W}$

<b>ELECTRICAL SPECIFICATIONS</b> ( $T_A = 25^\circ\text{C}$ 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 per diode	1MHz, $V_R = 4.0\text{V}$	$C_J$	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>		
ORDERING CODE <sup>(1)(2)</sup>	PACKAGE	PACKING
GBU40x	GBU	20 / Tube
GBU40xH	GBU	20 / Tube

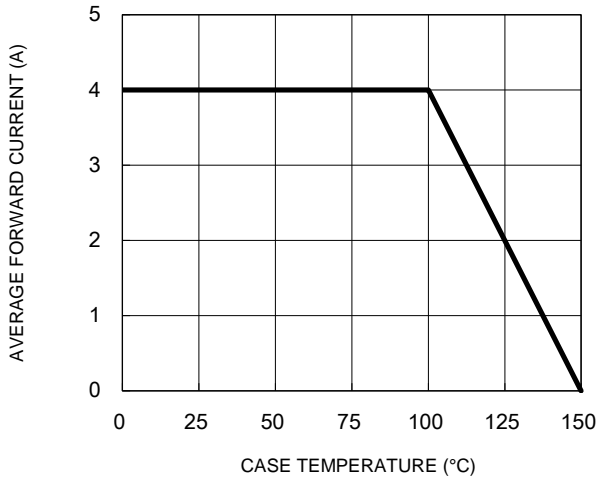
**Notes:**

1. "x" defines voltage from 50V(GBU401) to 1000V(GBU407)
2. "H" means AEC-Q101 qualified

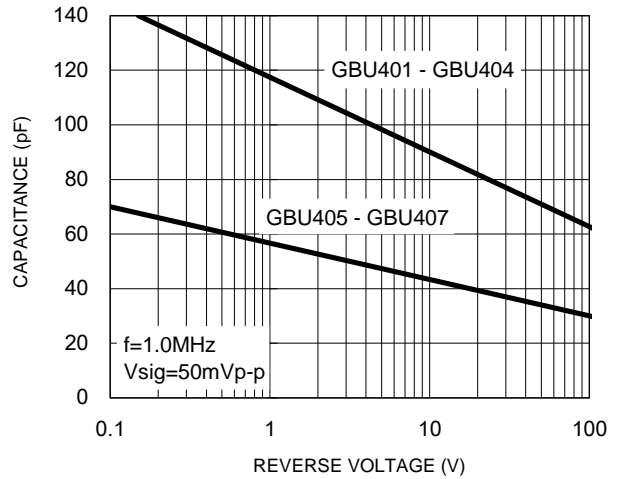
**CHARACTERISTICS CURVES**

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

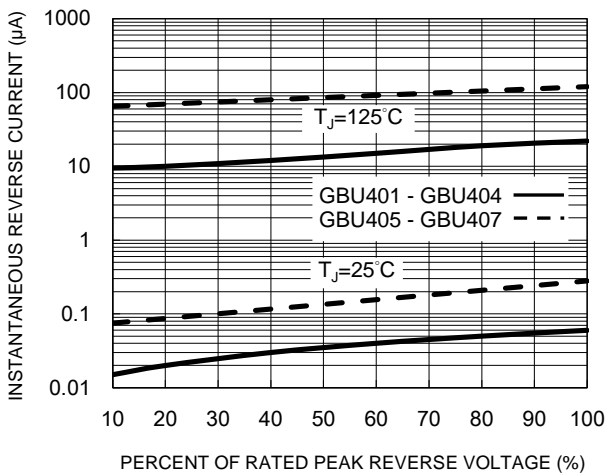
**Fig.1 Forward Current Derating Curve**



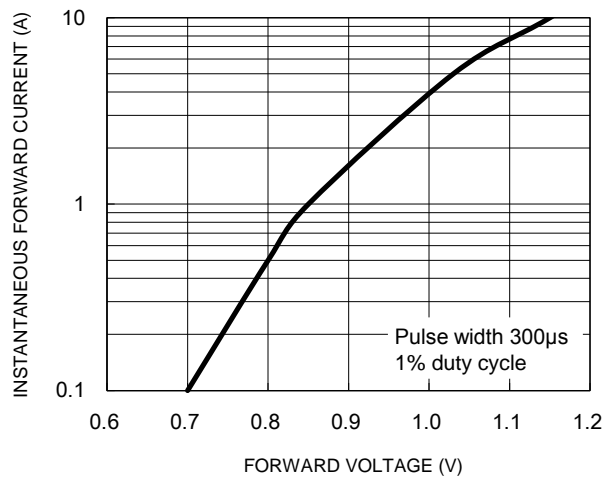
**Fig.2 Typical Junction Capacitance**



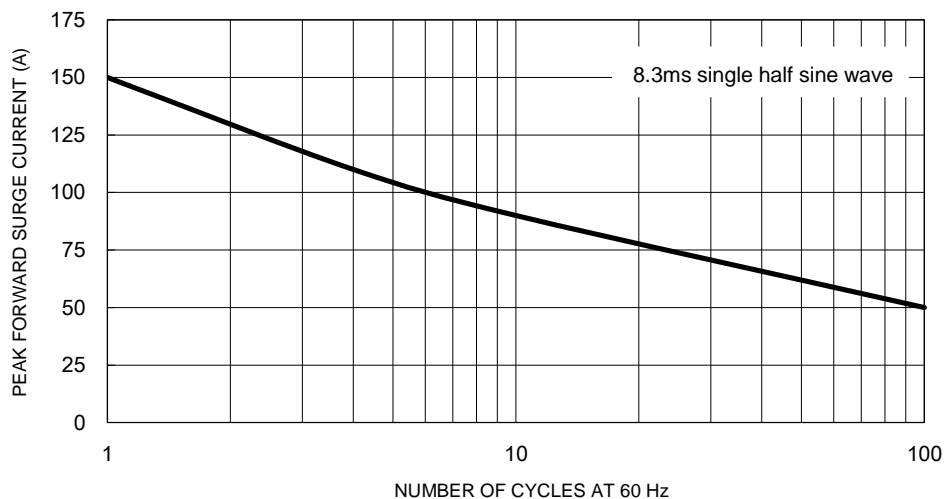
**Fig.3 Typical Reverse Characteristics**



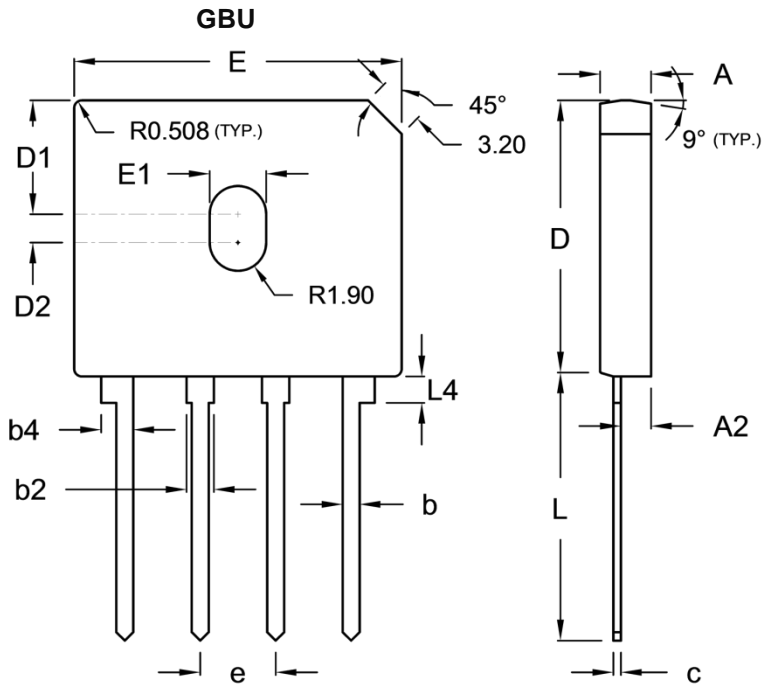
**Fig.4 Typical Forward Characteristics**



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



**PACKAGE OUTLINE DIMENSIONS**



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	3.30	3.56	0.130	0.140
A2	1.90	2.16	0.075	0.085
b	1.02	1.27	0.040	0.050
b2	1.65	2.03	0.065	0.080
b4	2.16	2.54	0.085	0.100
c	0.46	0.56	0.018	0.022
D	18.30	18.80	0.720	0.740
D1	7.40	7.90	0.291	0.311
D2	1.65	2.16	0.065	0.085
E	21.80	22.30	0.858	0.878
E1	3.50	4.10	0.138	0.161
e	4.83	5.33	0.190	0.210
L	17.50	18.00	0.689	0.709
L4	1.52	2.03	0.060	0.080

**MARKING DIAGRAM**



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