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

FEATURES

- Ideal for printed circuit board
- High case dielectric strength of 1500 V_{RMS}
- 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

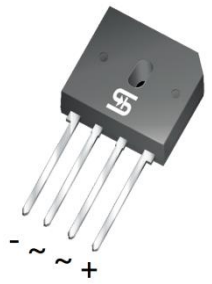
- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

MECHANICAL DATA

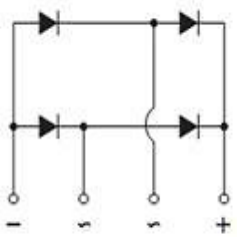
- Case: GBU
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Part no. with suffix “H” means AEC-Q101 qualified
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: As marked
- Weight: 4 g (approximately)

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

Pb-Free RoHS COMPLIANT



GBU



ABSOLUTE MAXIMUM RATINGS (T_A = 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_{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
Maximum DC blocking voltage		V_{DC}	50	100	200	400	600	800	1000	V
Forward current		$I_{F(AV)}$	4							A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode)	T_J=25°C	I_{FSM}	150							A
	T_J=125°C		80							

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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°C	I_{FSM}	280							A
	T_J=125°C		260							
Rating of fusing (t<8.3ms)		I^2t	93							A^2s
Junction temperature		T_J	- 55 to +150							°C
Storage temperature		T_{STG}	- 55 to +150							°C

THERMAL PERFORMANCE			
PARAMETER	**SYMBOL**	**LIMIT**	**UNIT**
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	20	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	4	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)						
PARAMETER		**CONDITIONS**	**SYMBOL**	**TYP**	**MAX**	**UNIT**
Forward voltage per diode [1]		I_F =2A, T_J=25°C	V_F	-	1.0	V
		I_F =4A, T_J=25°C		-	1.1	V
Reverse current @ rated V_R per diode [2]		T_J = 25°C	I_R	-	5	μA
		T_J =125°C		-	500	μA
Junction capacitance	GBU401 GBU402 GBU403 GBU404	1 MHz, V_R=4.0V	C_J	100	-	pF
	GBU405 GBU406 GBU407			45	-	pF

Notes:

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

ORDERING INFORMATION

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX(*)	PACKAGE	PACKING
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

EXAMPLE P/N

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

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

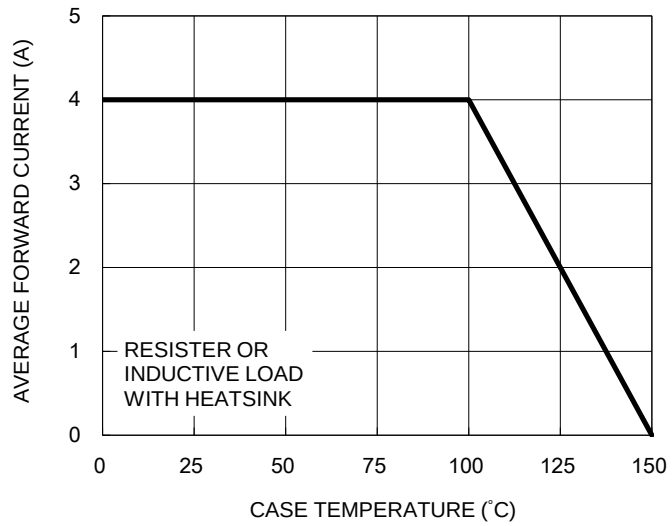


Fig.2 Typical Junction Capacitance

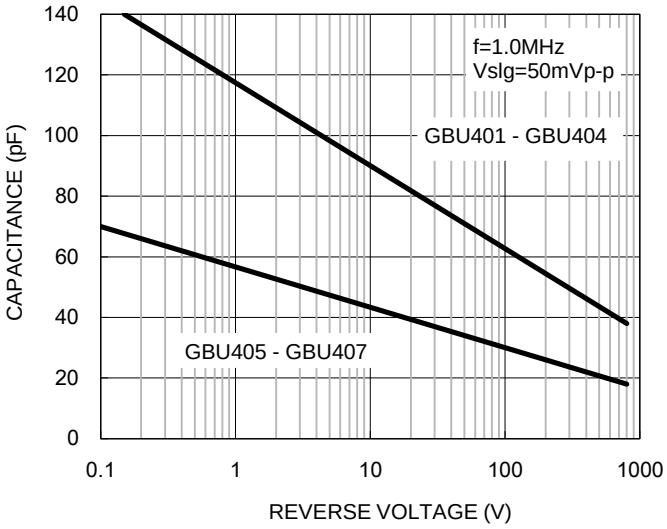


Fig.3 Typical Reverse Characteristics

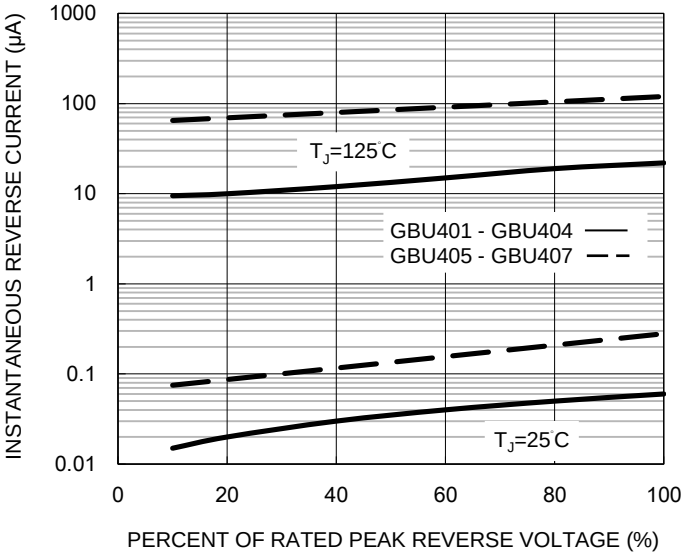
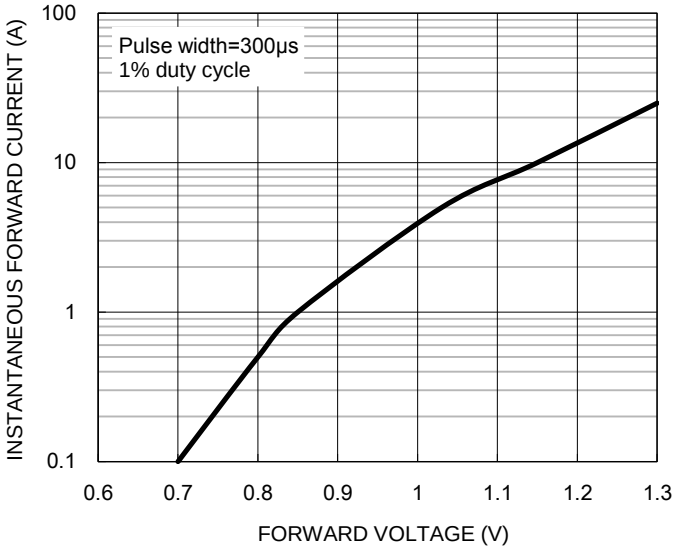


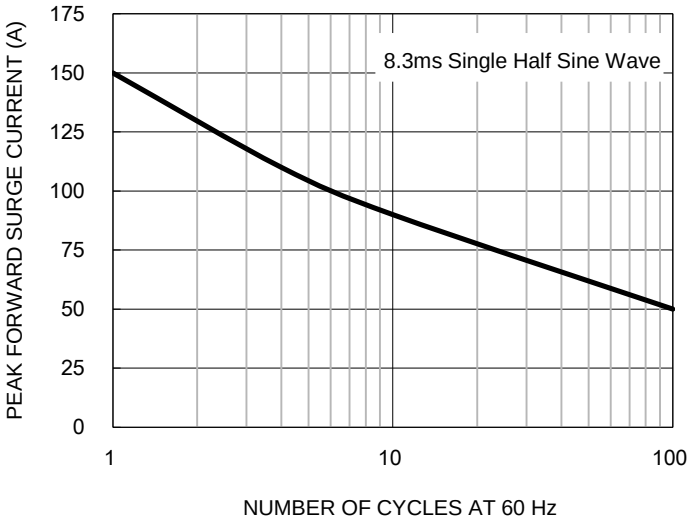
Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

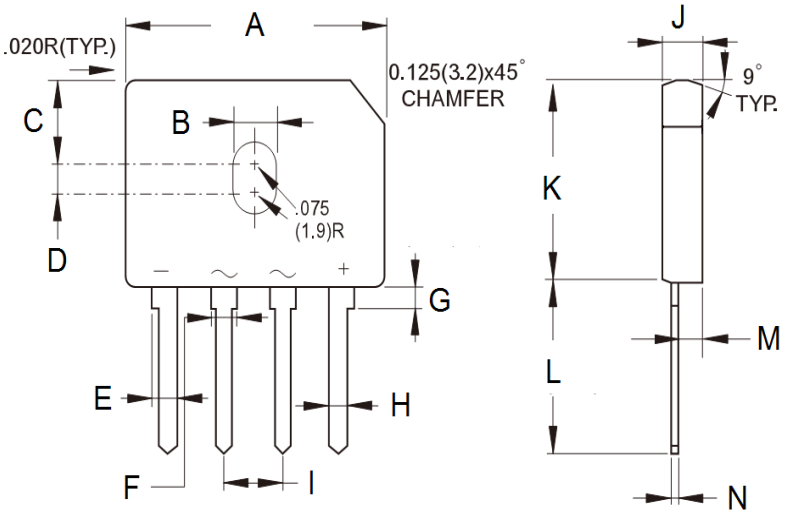
(T_A = 25°C unless otherwise noted)

Fig.5 Maximum Non-repetitive Forward Surge Current



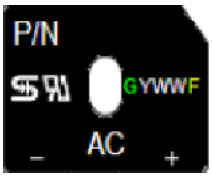
PACKAGE OUTLINE DIMENSIONS

GBU



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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