

25A, 600V Low V_F Standard Bridge Rectifier

FEATURES

- Qualification reference AEC-Q101
- Ideal for printed circuit board
- Low forward voltage drop
- High surge current capability
- UL Recognized File # E-326243
- High case dielectric strength of 2000 V_{RMS}
- RoHS Compliant
- Halogen-free

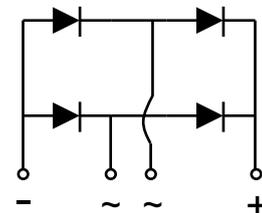
APPLICATIONS

- Switching mode power supply (SMPS)
- AC to DC
- On board charger

MECHANICAL DATA

- Case: GBU
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 4.17g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	25	A
V_{RRM}	600	V
I_{FSM}	390	A
$T_{J\ MAX}$	175	°C
Package	GBU	
Circuit Configuration	In-line	



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage	V_{RRM}	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	V
Forward current	I_F	25	A
Surge peak forward current, single half sine-wave superimposed on rated load per diode	$t = 8.3\text{ms}$	390	A
	$t = 1.0\text{ms}$	900	
Rating of fusing ($t < 8.3\text{ms}$)	I^2t	631	A^2s
Junction temperature	T_J	- 55 to +175	°C
Storage temperature	T_{STG}	- 55 to +175	°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance ⁽¹⁾	$R_{\theta JL}$	1.0	°C/W
Junction-to-ambient thermal resistance ⁽¹⁾	$R_{\theta JA}$	6.5	°C/W
Junction-to-case thermal resistance ⁽¹⁾	$R_{\theta JC}$	0.8	°C/W
Junction-to-ambient thermal resistance ⁽²⁾	$R_{\theta JA}$	22	°C/W

Thermal Performance Notes:

1. Mounted on Heat sink with 4" x 6" x 0.25" Al-Plate
2. Without Heat sink

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 12.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.88	0.92	V
	$I_F = 12.5\text{A}, T_J = 125^\circ\text{C}$		0.74	-	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	10	μA
	$T_J = 125^\circ\text{C}$		0.5	-	μA
Junction capacitance per diode	1MHz, $V_R = 4.0\text{V}$	C_J	236	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	1050	-	ns

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
GBUL25J	GBU	20 / Tube

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

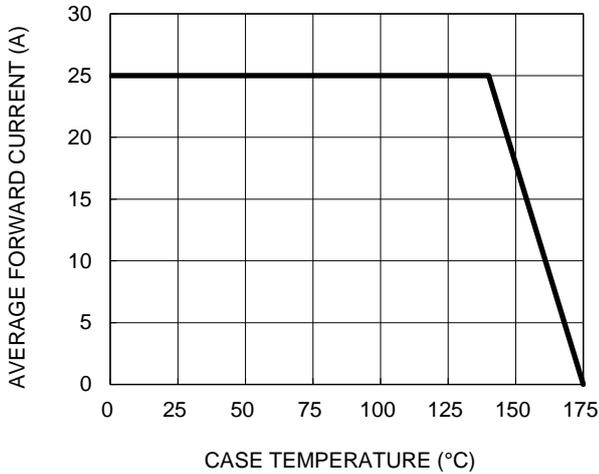


Fig.2 Typical Junction Capacitance

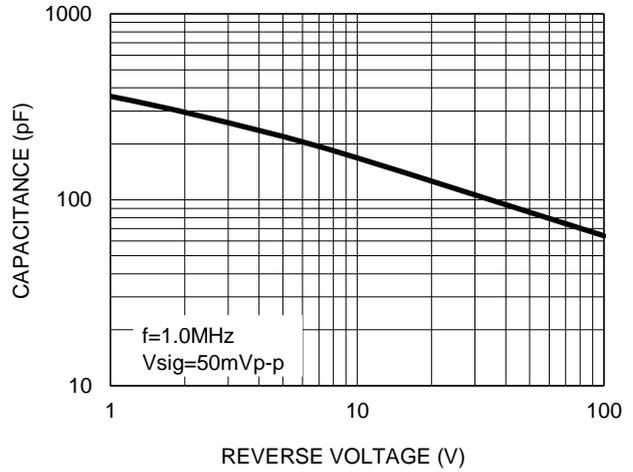


Fig.3 Typical Reverse Characteristics

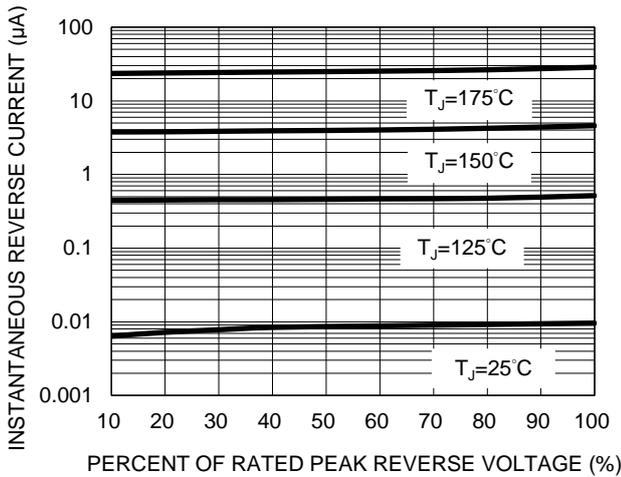


Fig.4 Typical Forward Characteristics

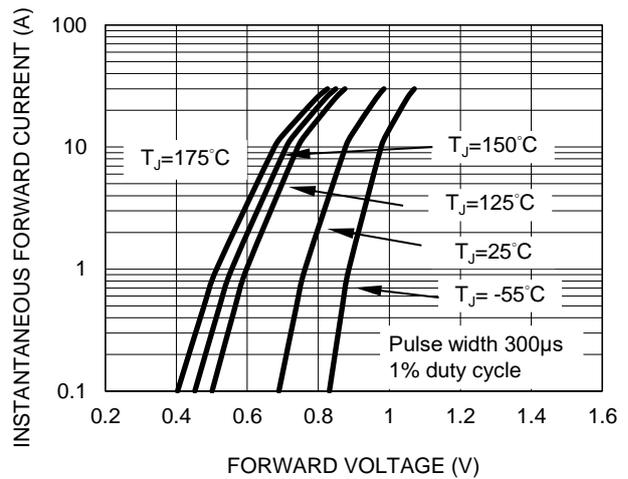
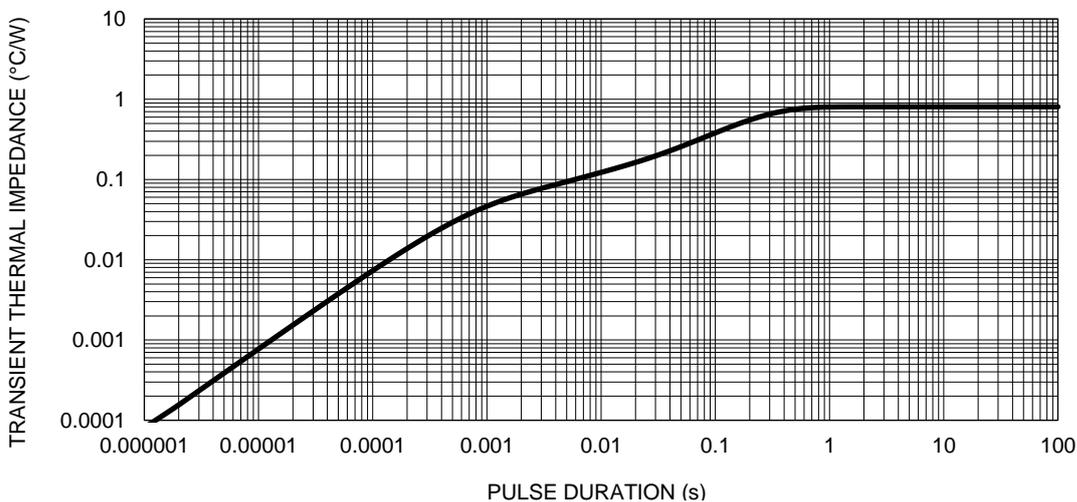
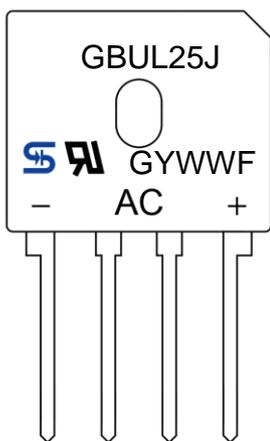
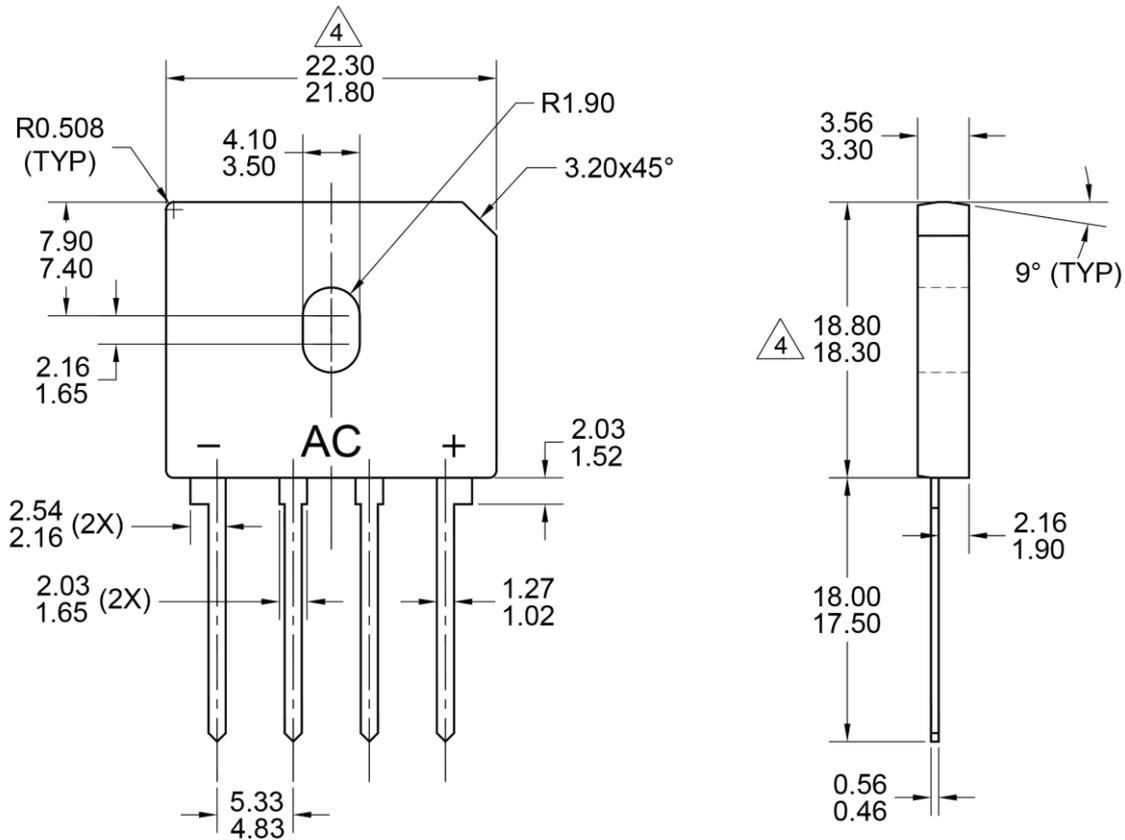


Fig.5 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS

GBU



MARKING DIAGRAM

G = GREEN COMPOUND
 YWW = DATE CODE
 F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. THERE IS NO EXISTING PACKAGE OUTLINE INDUSTRY STANDARD FOR THIS PACKAGE.
4. MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DWG NO. REF: HQ2SD07-GBU-068 REV A.

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