

Low V_F Single-Phase Bridge Rectifier

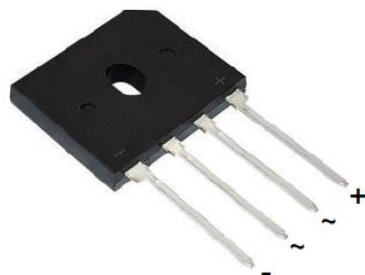
1. Description

This has been optimized for low reverse leakage at high temperature. The proprietary barrier technology allows for reliable operation up to 150 °C junction temperature.

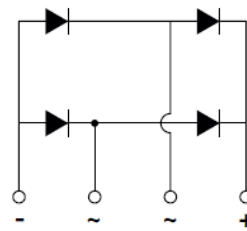
These devices are well suited for high efficiency switched mode power supplies, UPS, converters, output rectification, solar inverter, data center.

2. Features

- Higher efficiency
- Low Forward Voltage Drop
- Softest, fast switching capability
- Reliable High Temperature Operation
- 150°C Operating Junction Temperature
- Lead Free Finish, RoHS Compliant
- Green Molding Compound (No Br, Sb).



GBU



3. Maximum Ratings $T_C = 25^\circ\text{C}$ unless otherwise noted

Parameter	Symbol	Value	Units
DC Blocking Voltage	V_{RM}	600	V
Working Peak Reverse Voltage	V_{RWM}		
Peak Repetitive Reverse Voltage	V_{RRM}		
Average Rectified Forward Current	With heatsink	15	A
	Without heatsink	3.5	A
Peak Forward Surge Current - 1/2 60hz	I_{FSM}	200	A
i^2t value $T_C=25^\circ\text{C}$, $t_p=8.3\text{ms}$	$\int i^2 dt$	166	A^2s
Typical Junction Capacitance at 1MHz, $V_R=4\text{V}$	C_J	100	pF
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

4. Thermal Characteristics

Parameter	Symbol	Typ.	Max.	Units
Thermal Resistance, Junction to Case ②	$R_{\theta JC}$	1.3	---	$^\circ\text{C} / \text{W}$
Thermal Resistance, Junction to Ambient ②	$R_{\theta JA}$	---	6	
Soldering Temperature, wave soldering only allowed at leads (1.6mm from case for 10s)	T_{solder}		260	$^\circ\text{C}$

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5. Electrical Characteristics $T_C = 25^\circ\text{C}$ unless otherwise noted

Parameter	Test Conditions		Symbol	Min.	Typ.	Max.	Units
Breakdown Voltage ①	$I_R = 0.5\text{mA}$	$T_J = 25^\circ\text{C}$	V_B	600	-----	-----	V
Instantaneous Forward Voltage ①	$I_F = 7.5\text{A}$	$T_J = 25^\circ\text{C}$	V_F	-----	0.86	0.90	Volts
Instantaneous Reverse Current ①	At V_{RM}	$T_J = 25^\circ\text{C}$	IR	-----	-----	10	μA
		$T_J = 125^\circ\text{C}$		-----	-----	1	mA

Notes:

1. Pulse Test: Pulse width $\leq 300\mu\text{s}$, Duty cycle $\leq 2\%$.
2. Thermal Resistance Junction to case and lead, device mounted on 200 x 200 x 20 mm copper plate.

6. Curves Characteristics

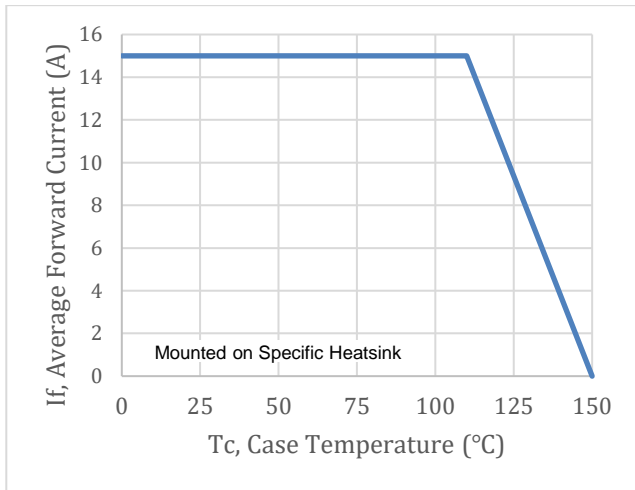


Figure 1: Forward Current Derating Curve

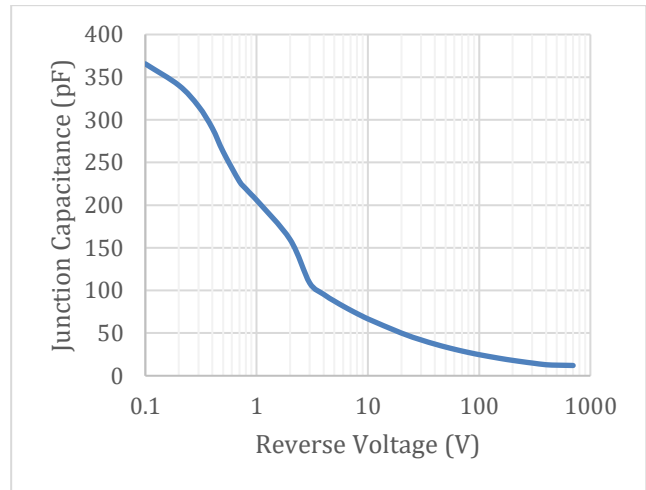


Figure 2: Typical Junction Capacitance

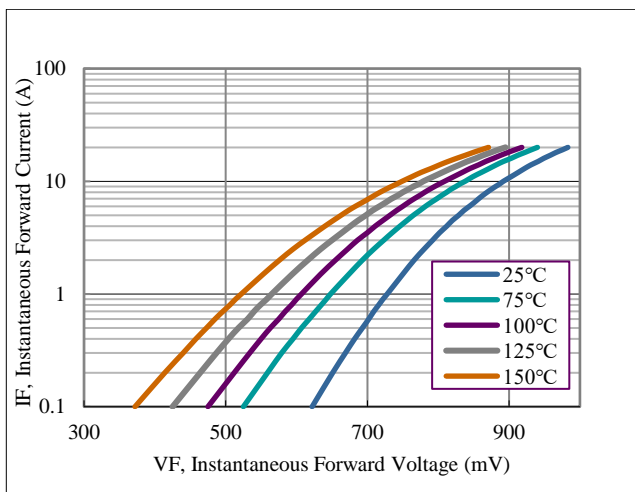


Figure 3: Typical Instantaneous Forward Voltage

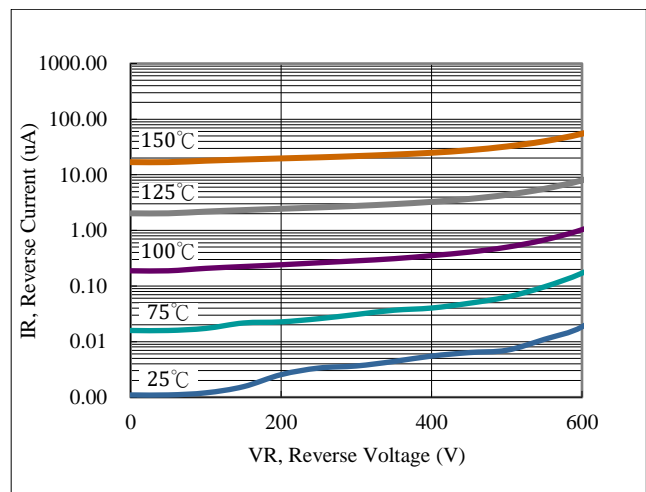
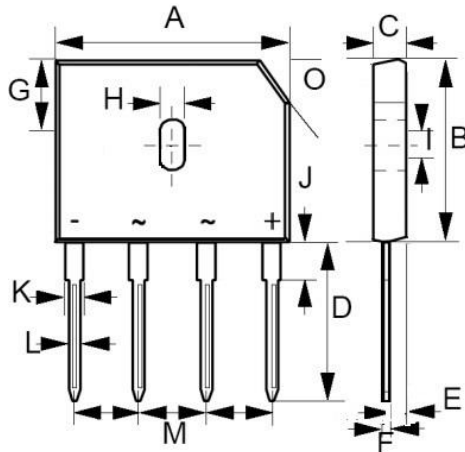


Figure 4: Typical Reverse Current

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7. Package Dimensions

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DIM	Min.	Max.
A	21.60	22.30
B	18.30	19.10
C	3.30	3.70
D	17.40	18.30
E	1.90	2.70
F	0.40	0.64
G	7.40	7.90
H	3.50	4.10
I	1.60	2.20
J	1.50	2.70
K	2.00	2.50
L	0.90	1.30
M	4.83	5.33
O	3.2 * 45°	
All dimensions in millimeter		

Note:

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