



# SINGLE-PHASE SILICON BRIDGE RECTIFIER

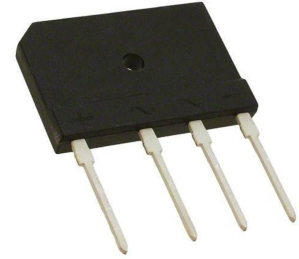
## GBJ5006 THRU GBJ5016

VOLTAGE RANGE 600 to 1600 Volts  
CURRENT 50.0 Ampere



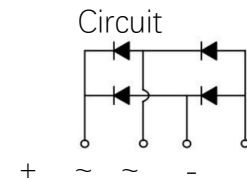
### Features

- Glass passivated die construction
- Reverse Voltage - 600 to 1600Volts
- Ideal for printed circuit boards
- High surge current capability
- High temperature soldering guaranteed:
- 265°C/10 seconds, 0.375" (9.5mm) lead length, 5lbs. (2.3kg) tension
- Plastic material has U/L flammability classification 94V-0



### Mechanical Data

- Case: Molded plastic case
- Terminals: Plated leads solderable per MIL-STD-750, Method 2026
- Polarity: Marked on Body
- Mounting position:Any
- specified.Single phase, half wave ,60Hz, resistive or inductive
- load.For capacitive load, derate current by 20%



### Bridge Type

TYPE	VRRM	VRSM
GBJ 5006	600V	700V
GBJ 5008	800V	900V
GBJ 5010	1000V	1100V
GBJ 5012	1200V	1300V
GBJ 5016	1600V	1700V

### Maximum Ratings and Thermal Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Conditions	Values	Units
I(AV)	Maximum average forward output rectified current $T_c = 100^\circ\text{C}$	50	A
IFSM	Peak forward surge current single half sine-wave superimposed on rated load (JEDEC Method)	500	A
$I^2t$	Rating for fusing ( $t < 10\text{ms}$ )	1037	A
Visol	a.c.50HZ;r.m.s.;1min	2500	V
R $\theta$ JC	Maximum thermal resistance per leg (1)	1.5	$^\circ\text{C}/\text{W}$
TOR	Mounting Torque (Recommended torque:0.5 N.m)	0.8	N.m
Tj, TSTG	Operating Junction and storage temperature range	-55 to+150	$^\circ\text{C}$
Weight	Approximate Weight	7	g

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

Symbol	Conditions	Values	Units
VF	Maximum Instantaneous Forward Voltage per leg IFM =25A	1.1	V
IR	Maximum DC reverse current at rated DC blocking voltage per leg $T_A = 25^\circ\text{C}$ $T_A = 125^\circ\text{C}$	5.0 500	$\mu\text{A}$

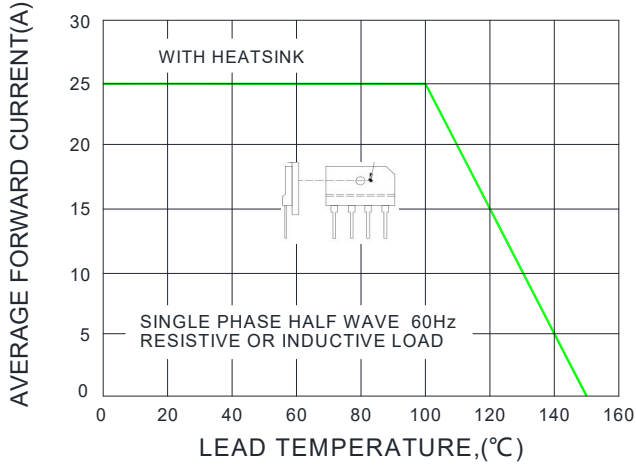
Notes:

1. Junction to case with heatsink.
2. Recommended mounting position is to bolt down on heatsink with silicone thermal compound for maximum heat transfer with #6 screw.

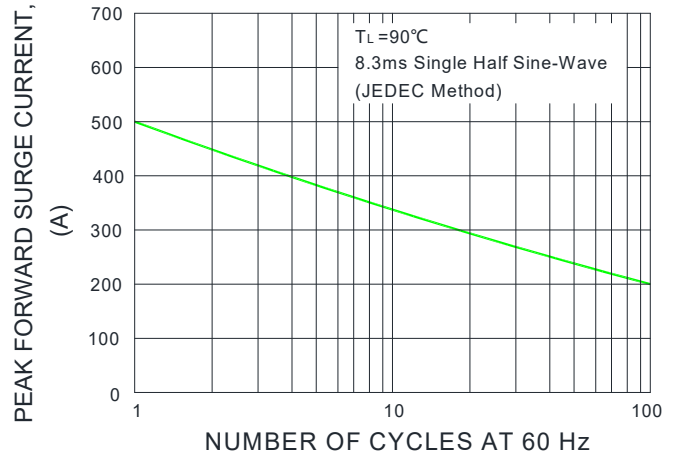


Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)

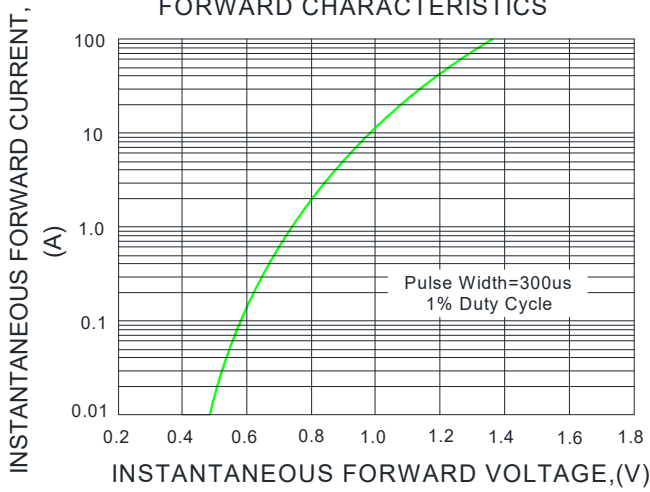
F1G.1-FORWARD CURRENT DERATING CURVE



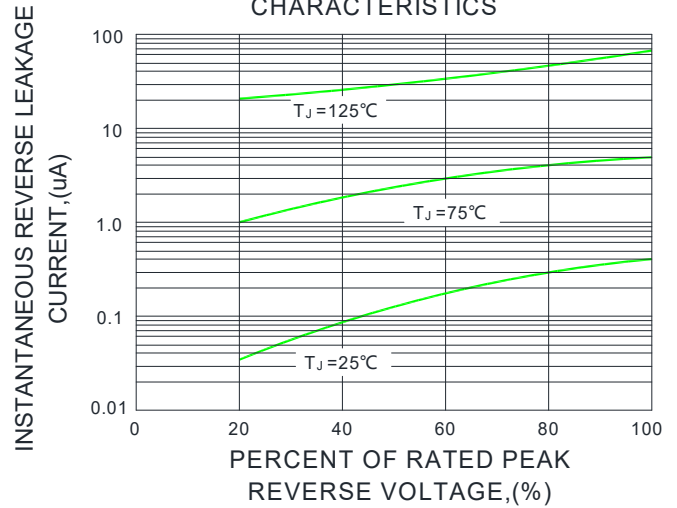
F1G.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



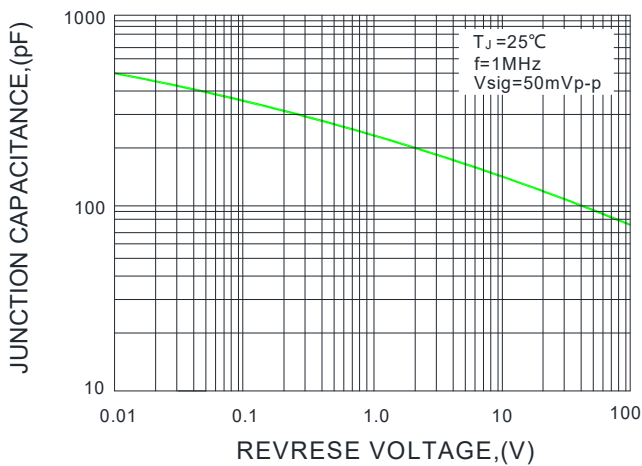
F1G.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



F1G.4-TYPICAL REVERSE CHARACTERISTICS



F1G.5-TYPICAL JUNCTION CAPACITANCE



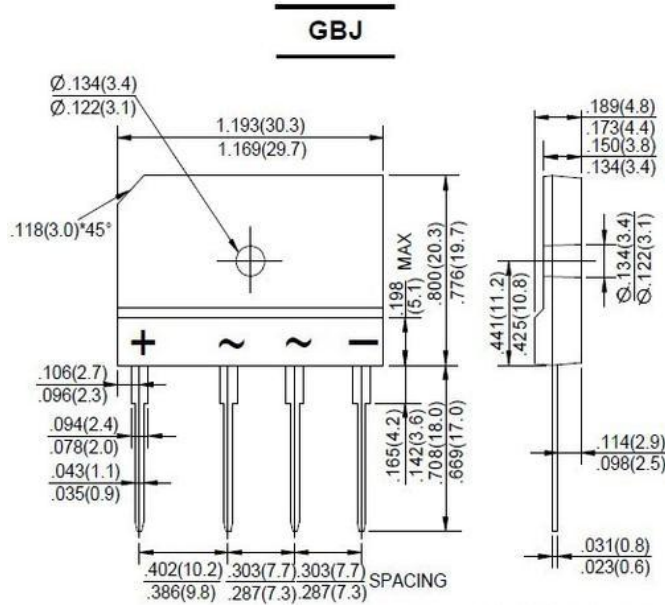


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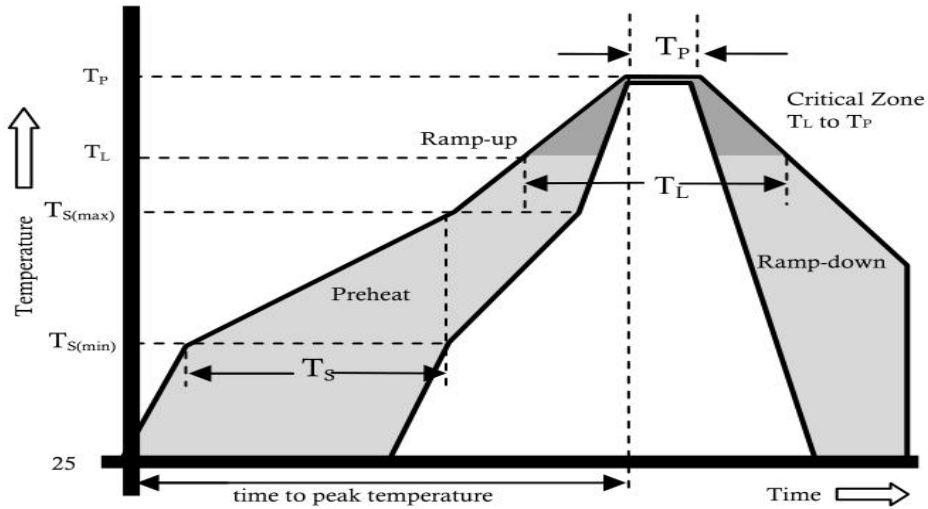
Package Outline Dimensions in inches (millimeters)



Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
GBJ	B1	Approximate 3.96	20	1000	2000	TUBE

Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp( $T_L$ ) to peak)		3°C/sec. Max.
$T_{S(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature ( $T_L$ )(Liquidus)	+217°C
	Temperature ( $T_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+(260+0/-5)°C
Time within 5°C of actual Peak Temp ( $T_P$ )		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp ( $T_P$ )		8 min. Max.
Do not exceed		+260°C

Disclaimer



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