

## Features

- Glass Passivated Die Construction
- Rating to 1,000V PRV
- Low Reverse Leakage Current
- Surge Overload Rating to 150A Peak
- Ideal for Printed Circuit Board Applications
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**

## Mechanical Data

- Case: GBL
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Matte Tin Finish. Solderable per MIL-STD 202, Method 208
- Polarity: Marked on Body See "Marking Information" Below
- Marking: Date Code and Type Number
- Weight: 2.52 grams (Approximate)

## Ordering Information (Note 3)

Part Number	Qualification	Case	Packaging
GBL410	Commercial	GBL	20/Tube

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See <http://www.diodes.com> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. For packaging details, go to our website at <http://www.diodes.com>.

## Marking Information

GBL



GBL410 = Product Type Marking Code  
 = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 7 = 2017)  
 WW = Week Code (01 – 53)

**Maximum Ratings and Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit	
Peak Repetitive Reverse Voltage	$V_{RRM}$	1,000	V	
Working Peak Reverse Voltage	$V_{RWM}$			
DC Blocking Voltage	$V_R$			
RMS Reverse Voltage	$V_{R(RMS)}$	700	V	
Average Forward Rectified Current (Note 4)	With Heatsink	4.0	A	
	Without Heatsink	2.4		
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	$I_{FSM}$	150	A	
Forward Voltage (Per Element)	@ $I_F = 2.0\text{A}$	$V_{FM}$	1.0	V
Peak Reverse Current at Rated DC Blocking Voltage	@ $T_J = +25^\circ\text{C}$	$I_R$	5	$\mu\text{A}$
	@ $T_J = +125^\circ\text{C}$		500	
$I^2t$ Rating for Fusing (Note 5)	$I^2t$	93	$\text{A}^2\text{s}$	
Typical Total Capacitance per Element (Note 6)	$C_T$	35	pF	
Typical Thermal Resistance Junction to Case (Note 4)	$R_{\theta JC}$	4.2	$^\circ\text{C/W}$	
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	4.0	$^\circ\text{C/W}$	
Typical Thermal Resistance Junction to Ambient (Note 4)	$R_{\theta JA}$	10	$^\circ\text{C/W}$	
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$	

- Notes:
4. Unit mounted on 50x50x1.6mm Cu plate heatsink.
  5. Non-repetitive, for  $t > 3.0\text{ms}$  and  $< 8.3\text{ms}$ .
  6. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

FIG.1 - FORWARD CURRENT DERATING CURVE

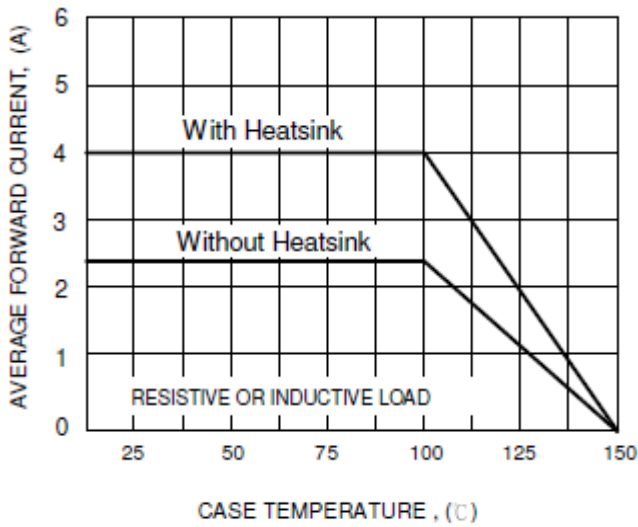


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

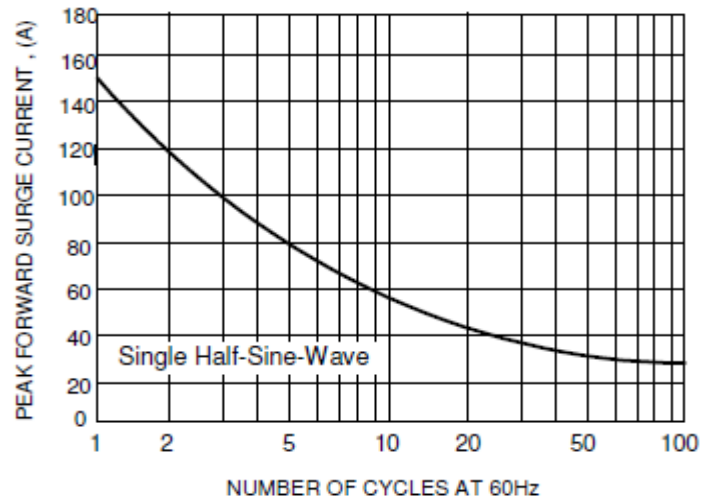


FIG.3 - TYPICAL FORWARD CHARACTERISTICS

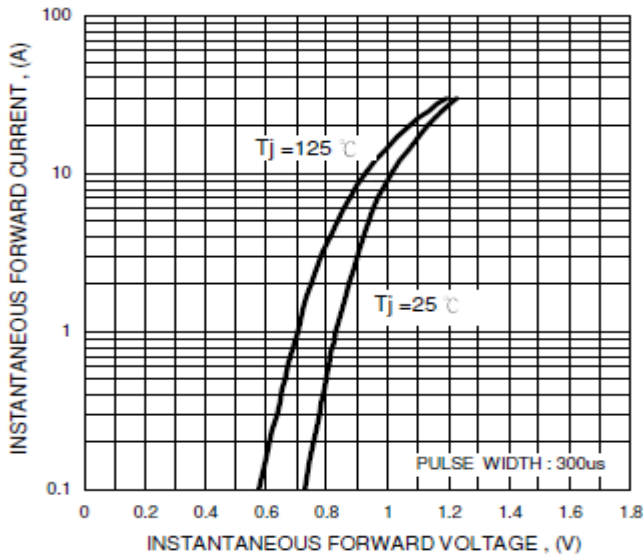


FIG.4 - TYPICAL REVERSE CHARACTERISTICS

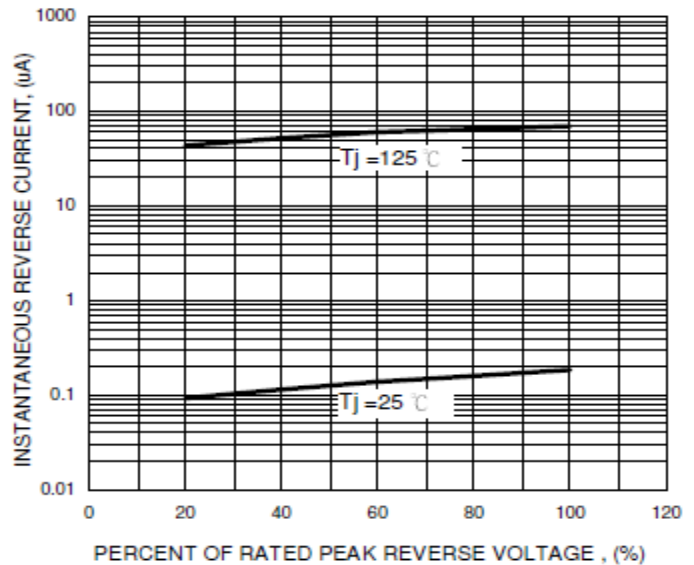


FIG.5 - TYPICAL JUNCTION CAPACITANCE

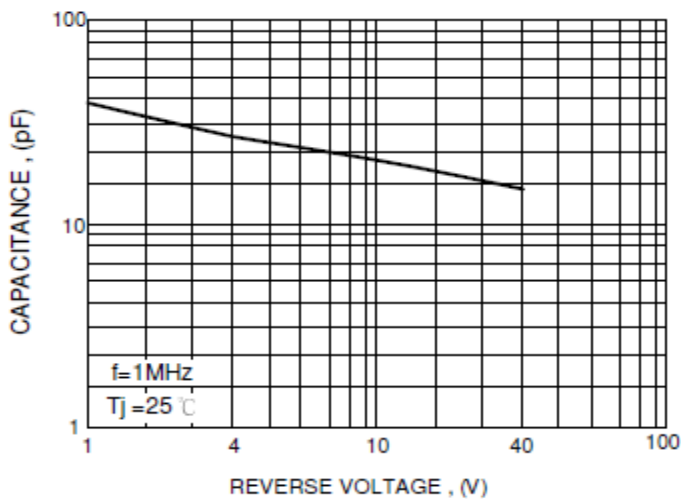
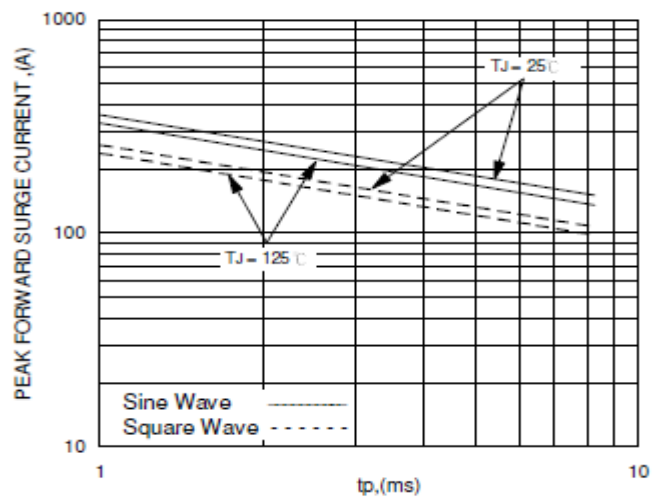


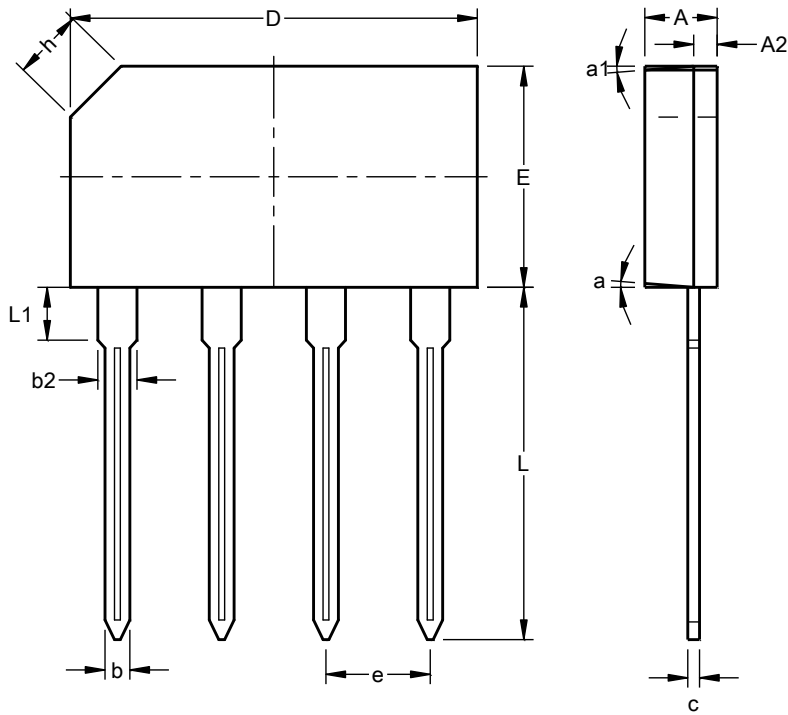
FIG.6 - NON-REPETITIVE SURGE CURRENT



**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**GBL**



GBL			
Dim	Min	Max	Typ
A	3.30	3.70	--
A2	0.80	1.20	--
b	1.02	1.27	--
b2	1.95	2.35	--
c	0.40	0.60	--
D	20.20	20.80	--
E	10.70	11.30	--
e	4.83	5.33	--
h	--	--	0.35
L	17.50	18.00	--
L1	2.30	2.70	--
a	--	5°	--
a1	--	5°	--
All Dimensions in mm			

NEW PRODUCT

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