

GBPC 12, 15, 25, 35 SERIES Bridge Rectifiers (Glass Passivated)

Features

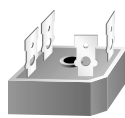
- Integrally molded heat-sink provided very low thermal resistance for maximum heat dissipation.
- Surge Overload Ratings from 300 A to 400 A.
- Isolated voltage from case to lead over 2500 V.
- UL certified, UL #E258596
- Terminals Finish Material - Silver (Solderable per MIL-STD-202, Method 208 for the wire type GBPC-W package)
 - Nickel for GBPC package.

Suffix “W”

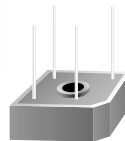
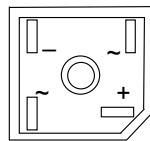
- Wire Lead Structure

Suffix “M”

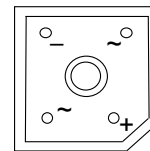
- Terminal Location Face to Face



GBPC



GBPC-W



Ordering Informations

Ordering Informations (continued)

Part Number	Marking	Package	Packing Method
GBPC1510W	GBPC1510W	GBPC-W 4L	Bulk
GBPC25005W	GBPC25005W		
GBPC2501W	GBPC2501W		
GBPC2502W	GBPC2502W		
GBPC2504W	GBPC2504W		
GBPC2506W	GBPC2506W		
GBPC2508W	GBPC2508W		
GBPC2510W	GBPC2510W		
GBPC35005W	GBPC35005W		
GBPC3501W	GBPC3501W		
GBPC3502W	GBPC3502W		
GBPC3504W	GBPC3504W		
GBPC3506W	GBPC3506W		
GBPC3508W	GBPC3508W		
GBPC3510W	GBPC3510W		

Absolute Maximum Ratings⁽¹⁾

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value							Units						
		005	01	02	04	06	08	10							
V_{RRM}	Maximum Repetitive Reverse Voltage	50	100	200	400	600	800	1000	V						
V_{RMS}	Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V						
V_R	DC Reverse Voltage (Rated V_R)	50	100	200	400	600	800	1000	V						
$I_{F(AV)}$	Average Rectified Forward Current at $T_C = 55^\circ\text{C}$	GBPC12	12						A						
		GBPC15	15												
		GBPC25	25												
		GBPC35	35												
I_{FSM}	Non-Repetitive Peak Forward Surge Current	GBPC12, 15, 25	300						A						
	8.3ms Single Half-Sine-Wave	GBPC35	400						A						
T_{STG}	Storage Temperature Range	-55 to +150							$^\circ\text{C}$						
T_J	Operating Junction Temperature	-55 to +150							$^\circ\text{C}$						

Note:

1. These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Value	Units
P_D	Power Dissipation	83.3	W
$R_{\theta JC}$	Thermal Resistance, Junction to Case ⁽²⁾	1.5	$^\circ\text{C/W}$

Note:

2. With Heatsink.

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

Symbol	Parameter	Test Conditions	Value	Units
V_F	Forward Voltage Drop, per bridge	6.0 A GBPC12	1.1 (Max)	V
		7.5 A GBPC15		
		12.5 A GBPC25		
		17.5 A GBPC35		
I_R	Reverse Current, per element at Rated V_R	$T_A = 25^\circ\text{C}$	5.0 (Max)	μA
		$T_A = 125^\circ\text{C}$	500 (Max)	μA
I^2t	Rating for Fusing $t < 8.35$ ms	GBPC12, 15, 25	375	A^2Sec
		GBPC35	660	A^2Sec
C_T	Total Capacitance, per leg $V_R = 4.0$ V $f = 1.0$ MHz	GBPC12, 15, 25	180	pF
		GBPC35	200	pF

Typical Performance Characteristics



Figure 1. Forward Current Derating Curve

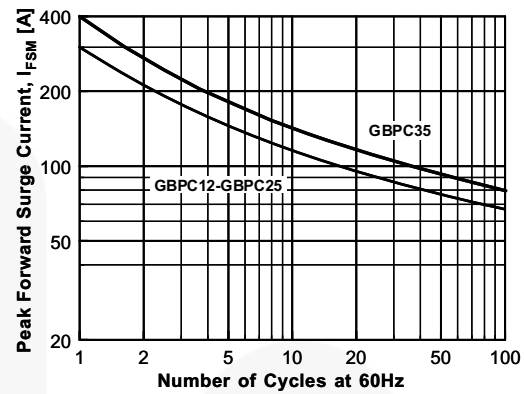


Figure 2. Non-Repetitive Surge Current



Figure 3. Forward Voltage Characteristics

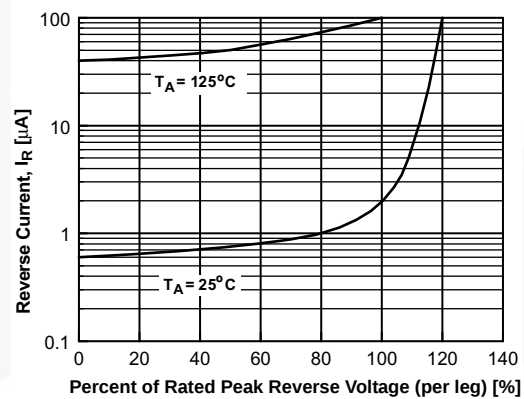
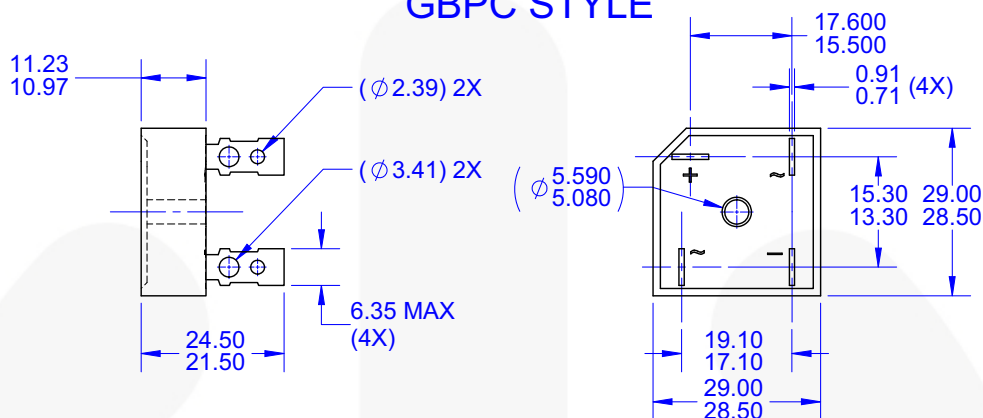


Figure 4. Reverse Current vs. Reverse Voltage

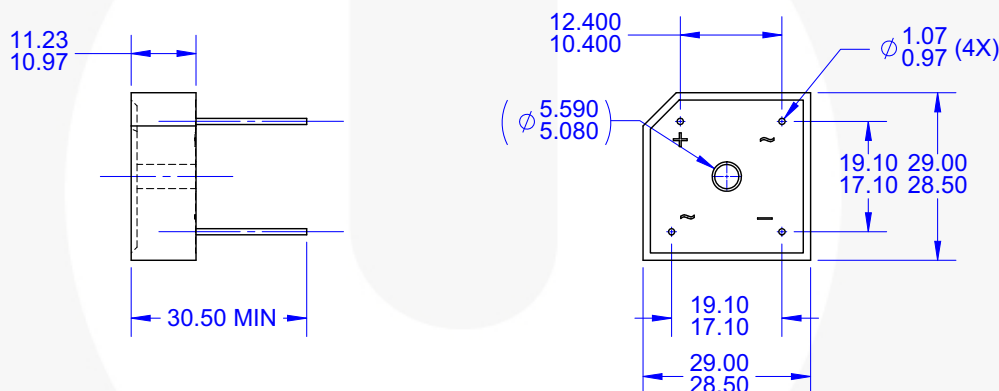
Physical Dimension

GBPC

GBPC STYLE



GBPC-W STYLE



NOTES:

- A. THIS PACKAGE DOES NOT CONFORM TO ANY STANDARDS.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- D. FAIRCHILD SEMICONDUCTOR
- E. DRAWING FILE NAME: MKT-GBPC04A REV3

Figure 5. 4-TERMINAL, COMBINATION GBPC AND GBPC-W (ACTIVE)

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