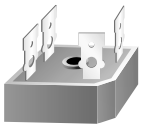
FAIRCHILD SEMICONDUCTOR®

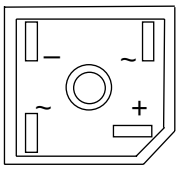
GBPC 12, 15, 25, 35 SERIES

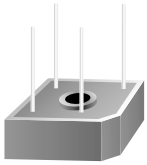
Features

- Integrally molded heatsink provided very low thermal resistance for maximum heat dissipation.
- Surge overload rartings from 300 amperes to 400 amperes.
- Isolated voltage from case to lead over 2500 volts.
- UL certified, UL #E96005.

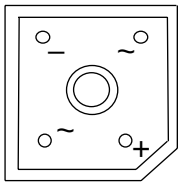


GBPC





GBPC-W



Suffix "W"

Wire Lead Structure

Suffix "M"

Terminal Location
Face to Face

Bridge Rectifiers (Glass Passivated)

Absolute Maximum Ratings*

T_A = 25°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 @ T_A = 55°C **GBPC12**	12							A
	GBPC15	15							A
	GBPC25	25							A
	GBPC35	35							A
I_{FSM}	Non-repetitive Peak Forward Surge Current **GBPC12, 15, 25** 8.3 ms Single Half-Sine-Wave	300							A
	GBPC35	400							A
T_{stg}	Storage Temperature Range	-55 to +150							°C
T_J	Operating Junction Temperature	-55 to +150							°C

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

Bridge Rectifiers (Glass Passivated)
(continued)

Thermal Characteristics

Symbol	Parameter	Value	Units
P_D	Power Dissipation	83.3	W
$R_{\theta JL}$	Thermal Resistance, Junction to Lead	1.5	°C/W

Electrical Characteristics
T_A = 25°C unless otherwise noted

Symbol	Parameter	Device	Units
V_F	Forward Voltage Drop, per bridge @ 6.0 A **GBPC12** @ 7.5 A **GBPC15** @ 12.5 A **GBPC25** @ 17.5 A **GBPC35**	1.1	V
I_R	Reverse Current, per leg @ rated V_R T_A = 25°C T_A = 125°C	5.0 500	µA µA
	I^2t rating for fusing t < 8.3 ms **GBPC12, 15, 25** **GBPC35**	375 660	A^2Sec A^2Sec
C_T	Total Capacitance, per leg V_R = 4.0 V, **GBPC12, 15, 25** f = 1.0 MHz **GBPC35**	180 200	pF pF

Typical Characteristics

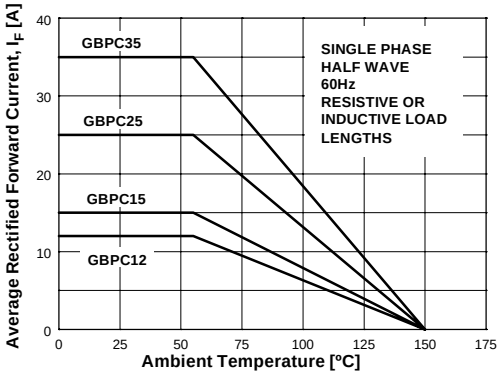


Figure 1. Forward Current Derating Curve

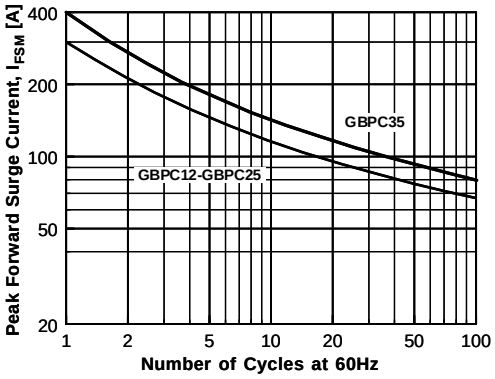


Figure 2. Non-Repetitive Surge Current

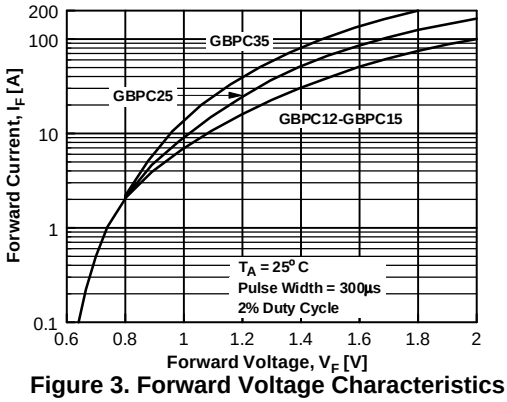


Figure 3. Forward Voltage Characteristics

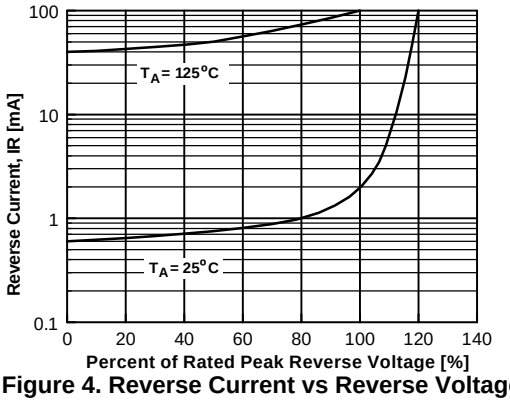


Figure 4. Reverse Current vs Reverse Voltage

TRADEMARKS

The following are registered and unregistered trademarks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

ACEx™	FAST ®	OPTOLOGIC™	SMART START™	VCX™
Bottomless™	FASTr™	OPTOPLANAR™	STAR*POWER™	
CoolFET™	FRFET™	PACMAN™	Stealth™	
CROSSVOLT™	GlobalOptoisolator™	POP™	SuperSOT™-3	
DenseTrench™	GTO™	Power247™	SuperSOT™-6	
DOME™	HiSeC™	PowerTrench®	SuperSOT™-8	
EcoSPARK™	ISOPLANAR™	QFET™	SyncFET™	
E^2CMOS™	LittleFET™	QS™	TinyLogic™	
EnSigna™	MicroFET™	QT Optoelectronics™	TruTranslation™	
FACT™	MicroPak™	Quiet Series™	UHC™	
FACT Quiet Series™	MICROWIRE™	SILENT SWITCHER®	UltraFET®	

STAR*POWER is used under license

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.
As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, or (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.

2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
Obsolete	Not In Production	This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.