FAIRCHILD SEMICONDUCTOR™

Discrete POWER & Signal Technologies

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.



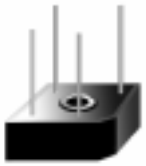
GBPC

Suffix "W"

Wire Lead Structure

Suffix "M"

Terminal Location Face to Face



GBPC-W

12, 15, 25, 35 Ampere Glass Passivated Bridge Rectifiers

Absolute Maximum Ratings*

T_A = 25°C unless otherwise noted

Symbol	Parameter		Value	Units
I_O	Average Rectified Current @ T_A = 55°C	GBPC12	12	A
		GBPC15	15	A
		GBPC25	25	A
		GBPC35	35	A
$i_{f(surge)}$	Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method)	GBPC12, 15, 25	300	A
		GBPC35	400	A
P_D	Total Device Dissipation		83.3	W
	Derate above 25°C		666	mW/°C
$R_{\theta JL}$	Thermal Resistance, Junction to Lead		1.5	°C/W
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.

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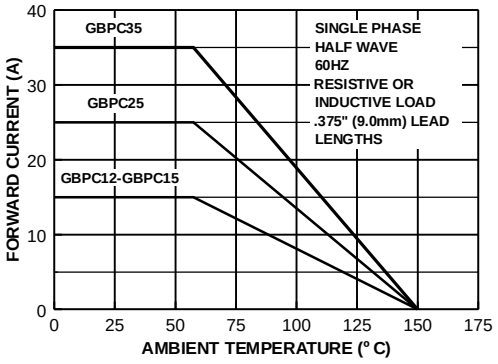
Glass Passivated Bridge Rectifiers
(continued)

Electrical Characteristics
T_A = 25°C unless otherwise noted

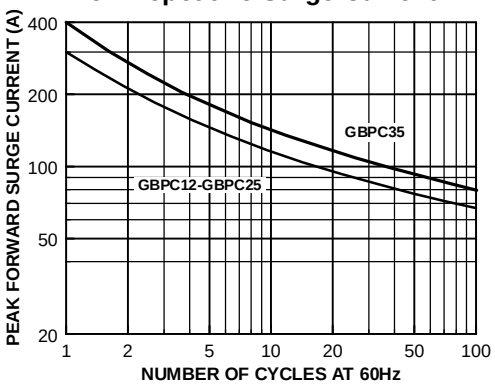
Parameter	Device							Units
	005	01	02	04	06	08	10	
Peak Repetitive Reverse Voltage	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	35	70	140	280	420	560	700	V
DC Reverse Voltage (Rated V_R)	50	100	200	400	600	800	1000	V
Maximum Reverse Leakage, total bridge @ rated V_R T_A = 25°C				5.0				µA
T_A = 125°C				500				µA
Maximum 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^2t rating for fusing **GBPC12,15,25** t < 8.3 ms **GBPC35**				375				A^2Sec
				660				A^2Sec
Typical Junction Capacitance, per leg V_R = 4.0V, **GBPC12,15,25** f = 1.0 MHz **GBPC35**				180				pF
				200				pF

Typical Characteristics

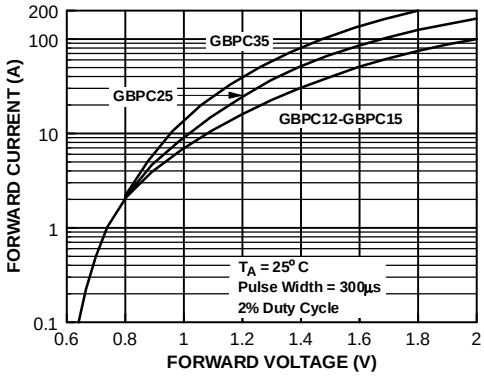
Forward Current Derating Curve



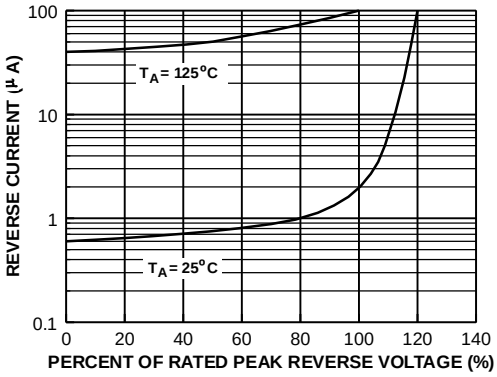
Non-Repetitive Surge Current



Forward Characteristics



Reverse Characteristics



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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.

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Definition of Terms

Datasheet Identification	Product Status	Definition
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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.