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October 2013

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.

1

Suffix "W"

• Wire Lead Structure

Suffix "M"

• Terminal Location Face to Face









GBPC-W



Ordering Informations

Part Number	Marking	Package	Packing Method
GBPC12005	GBPC12005		
GBPC1201	GBPC1201		
GBPC1202	GBPC1202		
GBPC1204	GBPC1204		
GBPC1206	GBPC1206		
GBPC1208	GBPC1208		
GBPC1210	GBPC1210		
GBPC15005	GBPC15005		
GBPC1501	GBPC1501		
GBPC1502	GBPC1502		
GBPC1504	GBPC1504		
GBPC1506	GBPC1506		
GBPC1508	GBPC1508		
GBPC1510	GBPC1510	CDDC 41	
GBPC25005	GBPC25005	GBPC 4L	
GBPC2501	GBPC2501		
GBPC2502	GBPC2502		
GBPC2504	GBPC2504		
GBPC2506	GBPC2506		
GBPC2508	GBPC2508		Dulle
GBPC2510	GBPC2510		Bulk
GBPC35005	GBPC35005		
GBPC3501	GBPC3501		
GBPC3502	GBPC3502		
GBPC3504	GBPC3504		
GBPC3506	GBPC3506	1	
GBPC3508	GBPC3508		
GBPC3510	GBPC3510		
GBPC1201W	GBPC1201W		
GBPC1202W	GBPC1202W		
GBPC1204W	GBPC1204W		
GBPC1206W	GBPC1206W		
GBPC1208W	GBPC1208W		
GBPC1210W	GBPC1210W	CPDC W 4I	
GBPC15005W	GBPC15005W	GBPC-W 4L	
GBPC1501W	GBPC1501W		
GBPC1502W	GBPC1502W		
GBPC1504W	GBPC1504W		
GBPC1506W	GBPC1506W		
GBPC1508W	GBPC1508W		

Ordering Informations (continued)

Part Number	Marking	Package	Packing Method
GBPC1510W	GBPC1510W		
GBPC25005W	GBPC25005W		
GBPC2501W	GBPC2501W		
GBPC2502W	GBPC2502W		
GBPC2504W	GBPC2504W		
GBPC2506W	GBPC2506W		
GBPC2508W	GBPC2508W		
GBPC2510W	GBPC2510W	GBPC-W 4L	Bulk
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 $T_A = 25$ °C unless otherwise noted.

Cumbal	Parameter		Value							Unito
Symbol			005	01	02	04	06	08	10	Units
V_{RRM}	Maximum Repetitive Reverse Volt	age	50	100	200	400	600	800	1000	V
V _{RMS}	Maximum RMS Bridge Input Volta	ge	35	70	140	280	420	560	700	V
V_{R}	DC Reverse Voltage (Rated V _R)		50	100	200	400	600	800	1000	V
		GBPC12	12							
	Average Rectified Forward	GBPC15	15					A		
I _{F(AV)}	Current at T _C = 55°C	GBPC25	25							
		GBPC35	35							
I _{FSM}	Non-Repetitive Peak Forward GBPC12, Surge Current 15, 25		300					Α		
	8.3ms Single Half-Sine-Wave GBP0		400					Α		
T _{STG}	Storage Temperature Range		-55 to +150					°C		
TJ	Operating Junction Temperature		-55 to +150					°C		

Note:

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

Thermal Characteristics

Values are at $T_A = 25^{\circ}C$ 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	°C/W

Note:

2. With Heatsink.

Electrical Characteristics

Values are at $T_A = 25$ °C unless otherwise noted.

Symbol	Parameter	Test Co	Test Conditions Value		Units
		6.0 A	GBPC12		V
V	Forward Voltage Drop, per bridge	7.5 A	GBPC15	1.1 (Max)	
V _F		12.5 A	GBPC25		
		17.5 A	GBPC35		
/1-	Reverse Current, per element at Rated V _R	$T_A = 25^{\circ}C$		25°C 5.0 (Max)	
I _R	Reverse Current, per element at Nated VR	$T_A = 125^{\circ}$	0	500 (Max)	μΑ
l ² t	Rating for Fusing t < 8.35 ms	GBPC12,	15, 25	375	A ² Sec
1 (Rating for Fusing (< 6.55 ms	GBPC35		660	A ² Sec
_	Total Capacitance, per leg	e, per leg GBPC12, 15, 25		180	pF
C _T	$V_R = 4.0 \text{ V}$ f = 1.0 MHz	GBPC35		200	pF

Typical Performance Characteristics

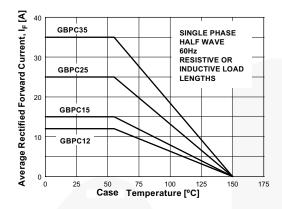


Figure 1. Forward Current Derating Curve

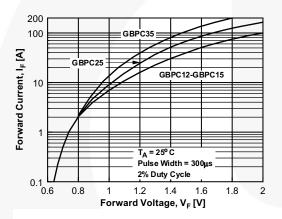


Figure 3. Forward Voltage Characteristics

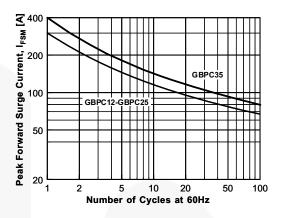


Figure 2. Non-Repetitive Surge Current

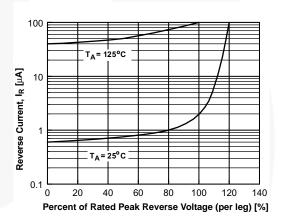
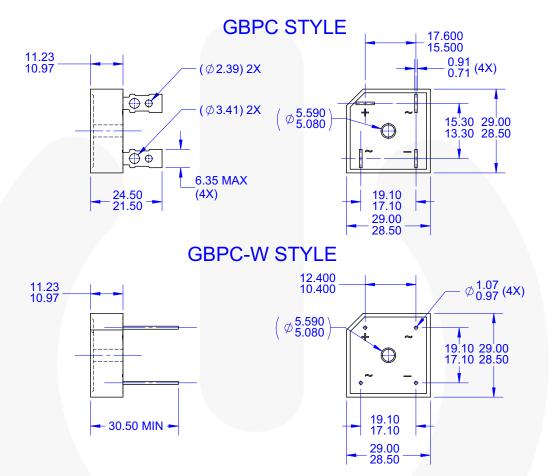


Figure 4. Reverse Current vs. Reverse Voltage

Physical Dimension

GBPC



NOTES:

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

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

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Definition of Terms		
Datasheet Identification	Product Status	Definition
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