


## Single Phase Bridge (Power Modules), 25/35 A


**GBPC...A**

**GBPC...W**

### FEATURES

- Universal, 3 way terminals: push-on, wrap around or solder
- High thermal conductivity package, electrically insulated case
- Positive polarity symbol molded on the plastic case
- Center hole fixing
- Glass passivated diode chips
- Excellent power/volume ratio
- Nickel plated terminals solderable using lead (Pb)-free solder; Solder Alloy Sn/Ag/Cu (SAC305); Solder temperature 260 to 275 °C
- Wire lead version available
- UL E300359 approved 
- RoHS compliant
- Designed and qualified for industrial and consumer level



### PRODUCT SUMMARY

$I_o$	25/35 A
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### DESCRIPTION/APPLICATIONS

A range of extremely compact, encapsulated single phase bridge rectifiers offering efficient and reliable operation. They are intended for use in general purpose and instrumentation applications

### MAJOR RATINGS AND CHARACTERISTICS

SYMBOL	CHARACTERISTICS	GBPC25	GBPC35	UNITS
$I_o$		25	35	A
	$T_c$	60	55	°C
$I_{FSM}$	50 Hz	400	475	A
	60 Hz	420	500	
$I^2t$	50 Hz	790	1130	A <sup>2</sup> s
	60 Hz	725	1030	
$V_{RRM}$	Range	200 to 1200		V
$T_J$		- 55 to 150		°C

## ELECTRICAL SPECIFICATIONS

VOLTAGE RATINGS					
TYPE NUMBER	VOLTAGE CODE	$V_{RRM}$ , MAXIMUM REPETITIVE PEAK AC REVERSE VOLTAGE $T_J = T_J$ MAXIMUM V	$V_{RSM}$ , MAXIMUM NON-REPETITIVE PEAK AC REVERSE VOLTAGE $T_J = T_J$ MAXIMUM V	$I_{RRM}$ MAXIMUM AT RATED $V_{RRM}$ $T_J = T_J$ MAXIMUM mA	$I_{RRM}$ MAXIMUM DC REVERSE CURRENT AT $T_J = 125$ °C $\mu$ A
GBPC25/35..A <sup>(1)</sup> GBPC25/35..W	02	200	275	2	500
	04	400	500		
	06	600	725		
	08	800	900		
	10	1000	1100		
	12	1200	1300		

### Note

(1) See Ordering Information table at the end of datasheet

FORWARD CONDUCTION							
PARAMETER	SYMBOL	TEST CONDITIONS			GBPC25	GBPC35	UNITS
Maximum DC output current at case temperature	$I_O$	Resistive or inductive load			25	35	A
		Capacitive load			20	28	
					60	55	°C
Maximum peak, one-cycle non-repetitive forward current	$I_{FSM}$	t = 10 ms	No voltage reappplied	Initial $T_J = T_J$ maximum	400	475	A
		t = 8.3 ms			420	500	
		t = 10 ms	100 % $V_{RRM}$ reappplied		335	400	
		t = 8.3 ms			350	420	
Maximum $I^2t$ for fusing	$I^2t$	t = 10 ms	No voltage reappplied		790	1130	A <sup>2</sup> s
		t = 8.3 ms			725	1030	
		t = 10 ms	100 % $V_{RRM}$ reappplied		560	800	
		t = 8.3 ms			512	730	
Maximum $I^2\sqrt{t}$ for fusing	$I^2\sqrt{t}$	$I^2t$ for time $t_x = I^2\sqrt{t} \times \sqrt{t_x}$ ; $0.1 \leq t_x \leq 10$ ms, $V_{RRM} = 0$ V			7.9	11.3	kA <sup>2</sup> √s
Low level of threshold voltage	$V_{F(TO)1}$	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , $T_J$ maximum			0.76	0.77	V
High level of threshold voltage	$V_{F(TO)2}$	$(I > \pi \times I_{F(AV)})$ , $T_J$ maximum			0.89	0.92	
Low level forward slope resistance	$r_{f1}$	$(16.7\% \times \pi \times I_{F(AV)} < I < \pi \times I_{F(AV)})$ , $T_J$ maximum			8.2	4.852	mΩ
High level forward slope resistance	$r_{f2}$	$(I > \pi \times I_{F(AV)})$ , $T_J$ maximum			6.8	3.867	
Maximum forward voltage drop	$V_{FM}$	$T_J = 25$ °C, $I_{FM} = I_{Favg}$ (arm)			1.1		V
Maximum DC reverse current	$I_{RRM}$	$T_J = 25$ °C, per diode at $V_{RRM}$			5.0		$\mu$ A
RMS isolation voltage base plate	$V_{INS}$	f = 50 Hz, t = 1 s			2700		V



THERMAL AND MECHANICAL SPECIFICATIONS					
PARAMETER	SYMBOL	TEST CONDITIONS	GBPC25	GBPC35	UNITS
Junction and storage temperature range	$T_J, T_{Stg}$		- 55 to 150		°C
Maximum thermal resistance, junction to case per bridge	$R_{thJC}$	DC operation	1.7	1.4	K/W
Maximum thermal resistance, case to heatsink	$R_{thCS}$	Mounting surface, smooth, flat and greased	0.2		
Approximate weight			16		g
Mounting torque $\pm 10\%$		Bridge to heatsink	2.0		N · m (lbf · in)

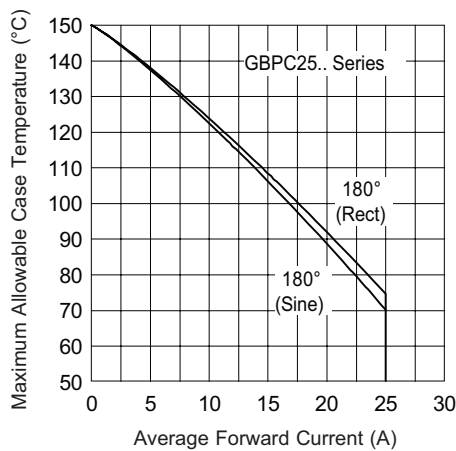


Fig. 1 - Current Ratings Characteristics

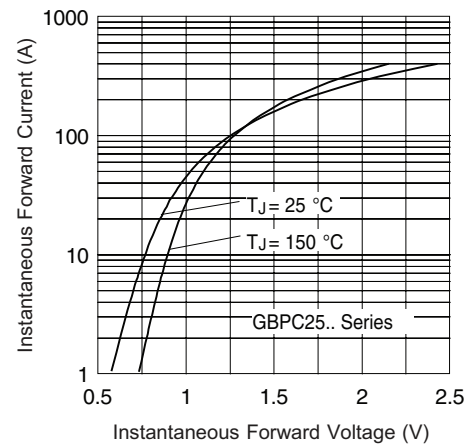


Fig. 2 - Forward Voltage Drop Characteristics

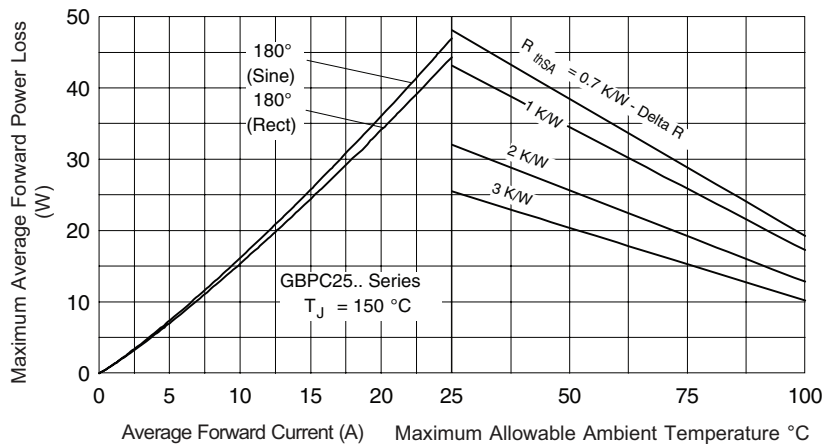


Fig. 3 - Total Power Loss Characteristics

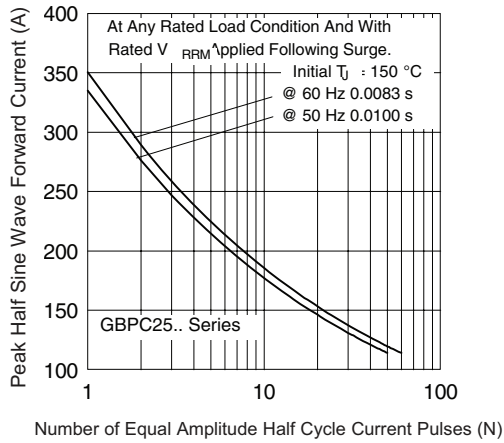


Fig. 4 - Maximum Non-Repetitive Surge Current

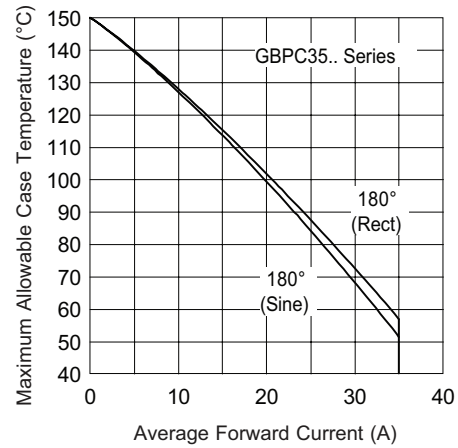


Fig. 6 - Current Ratings Characteristics

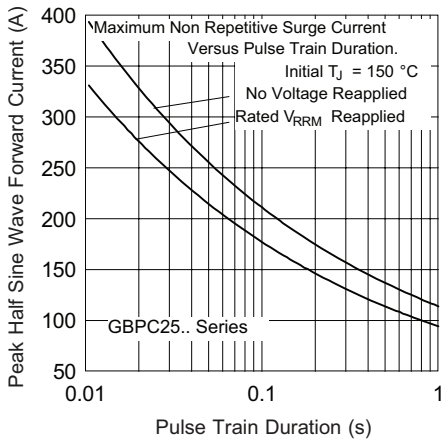


Fig. 5 - Maximum Non-Repetitive Surge Current

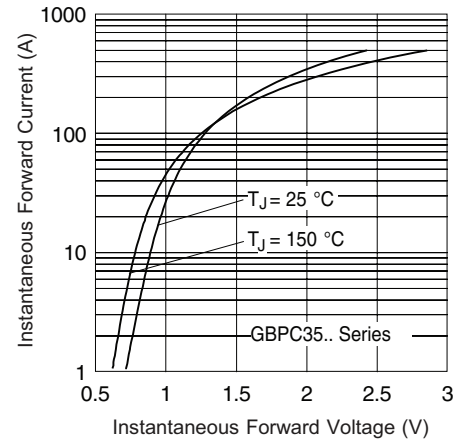


Fig. 7 - Forward Voltage Drop Characteristics

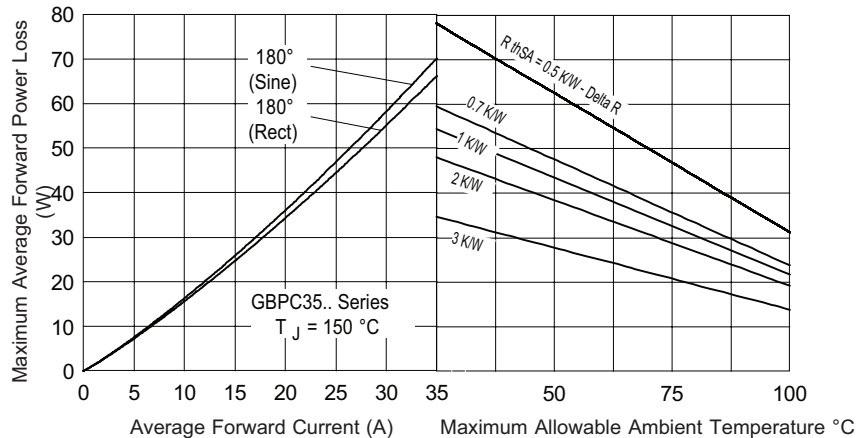


Fig. 8 - Total Power Loss Characteristics

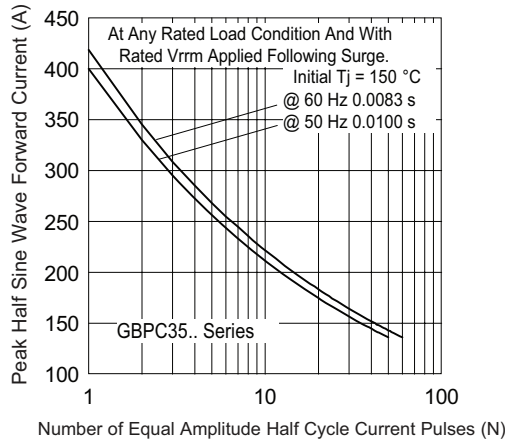


Fig. 9 - Maximum Non-Repetitive Surge Current

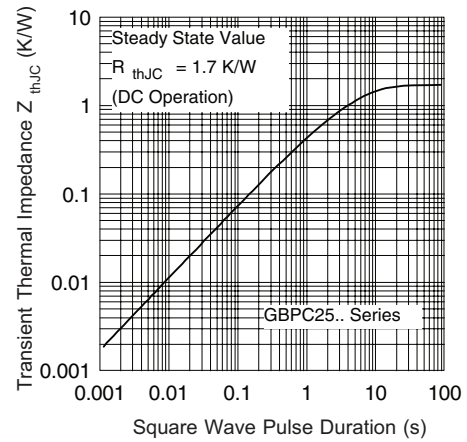
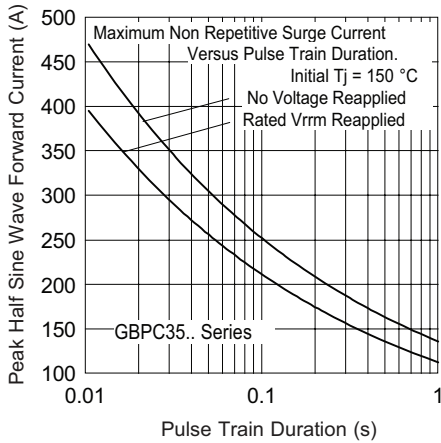
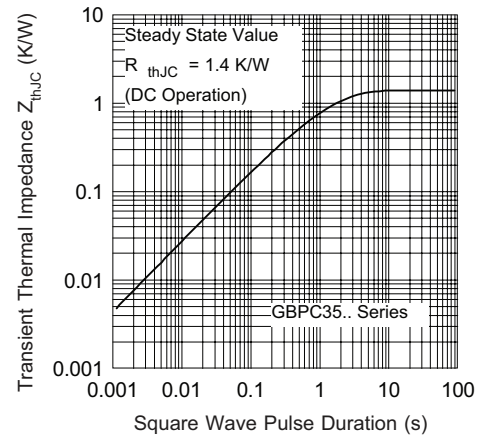

 Fig. 11 - Thermal Impedance  $Z_{thJC}$  Characteristic


Fig. 10 - Maximum Non-Repetitive Surge Current


 Fig. 12 - Thermal Impedance  $Z_{thJC}$  Characteristic

**ORDERING INFORMATION TABLE**

Device code	<b>GBPC</b>	<b>35</b>	<b>12</b>	<b>A</b>
	①	②	③	④

- ① - Circuit configuration:  
Single phase bridge coding
- ② - Current rating code 25 = 25 A (average)  
35 = 35 A (average)
- ③ - Voltage code x 100 =  $V_{RRM}$
- ④ - Diode bridge rectifier:
  - A = Standard fast-on terminal
  - W = Wire lead

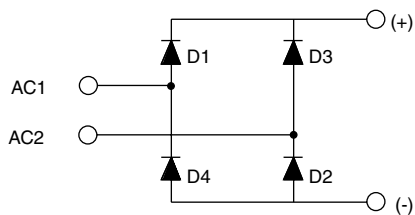
# GBPC.. Series

Vishay High Power Products

Single Phase Bridge  
(Power Modules), 25/35 A



## CIRCUIT CONFIGURATION

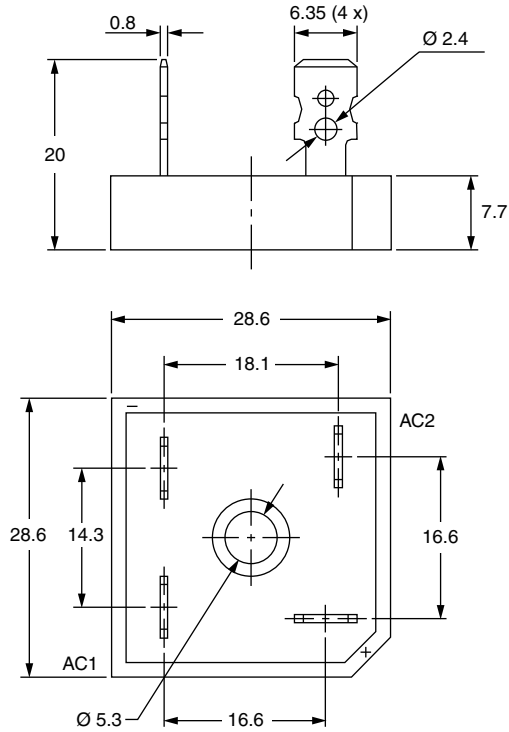


### LINKS TO RELATED DOCUMENTS

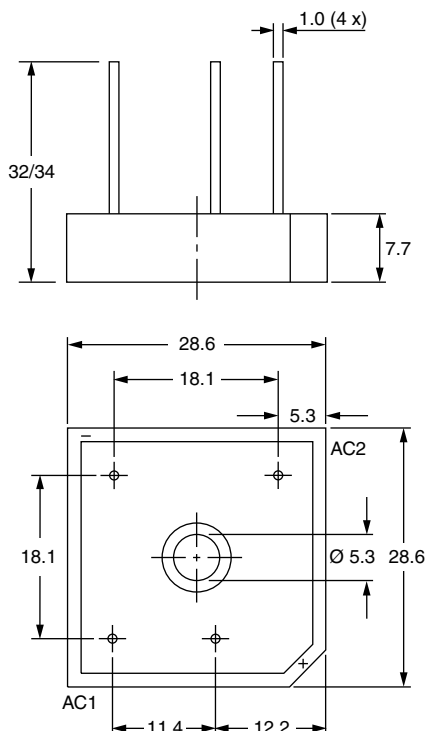
LINKS TO RELATED DOCUMENTS	
Dimensions	<a href="http://www.vishay.com/doc?95331">http://www.vishay.com/doc?95331</a>

## GBPC

### DIMENSIONS FOR GBPC...A in millimeters



### DIMENSIONS FOR GBPC...W in millimeters





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