

GBPC3510-E4/51 Datasheet



DiGi Electronics Part Number	GB
Manufacturer	Vis
Manufacturer Product Number	GB
Description	BR
Detailed Description	Bri

GBPC3510-E4/51-DG
Vishay General Semiconductor - Diodes Division
GBPC3510-E4/51
BRIDGE RECT 1PHASE 1KV 35A GBPC
Bridge Rectifier Single Phase Standard 1 kV QC Term inal GBPC

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Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
GBPC3510-E4/51	Vishay General Semiconductor - Diodes Division
Series:	Product Status:
-	Active
Diode Type:	Technology:
Single Phase	Standard
Voltage - Peak Reverse (Max):	Current - Average Rectified (lo):
1 kV	35 A
Voltage - Forward (Vf) (Max) @ lf:	Current - Reverse Leakage @ Vr:
1.1 V @ 17.5 A	5 µA @ 1000 V
Operating Temperature	
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Mounting Type: QC Terminal
-55°C ~ 150°C (TJ)	QC Terminal
-55°C ~ 150°C (TJ) Package / Case:	QC Terminal Supplier Device Package:
-55°C ~ 150°C (TJ) Package / Case: 4-Square, GBPC	QC Terminal Supplier Device Package:

Environmental & Export classification

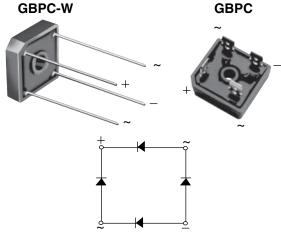
RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	Not Applicable
REACH Status:	ECCN:
REACH Affected	EAR99
HTSUS:	
8541.10.0080	

GBPC12, GBPC15, GBPC25, GBPC35



Vishay General Semiconductor

Glass Passivated Single-Phase Bridge Rectifier



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS						
I _{F(AV)}	12 A, 15 A, 25 A, 35 A					
V _{RRM}	50 V to 1000 V					
I _{FSM}	200 A, 300 A, 300 A, 400 A					
I _R	5 μΑ					
V _F at I _F	1.1 V					
T _J max.	150 °C					
Package	GBPC, GBPC-W					
Circuit configuration	Quad					

FEATURES

- UL recognition file number E54214
- Universal 3-way terminals: snap-on, wire wrap-around, or PCB mounting
- Typical I_R less than 0.3 μ A
- High surge current capability
- · Low thermal resistance
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for power supply, home appliances, office equipment, industrial automation applications.

MECHANICAL DATA

Case: GBPC, GBPC-W

Molding compound meets UL 94 V-0 flammability rating Base P/N-E4 - RoHS-compliant, commercial grade

Terminals: Nickel plated on faston lugs or silver plated on wire leads, solderable per J-STD-002 and JESD 22-B102. Suffix letter "W" added to indicate wire leads (e.g. GBPC12005W).

Polarity: As marked, positive lead by beveled corner

Mounting Torque: 20 inches-lbs. max.

PARAMETER		SYMBOL	GBPC12, 15, 25, 35									
		STMBUL	005	01	02	04	06	08	10	UNIT		
Maximum repetitive peak reverse voltage		V _{RRM}	50	100	200	400	600	800	1000	V		
Maximum RMS voltage		V _{RMS}	35	70	140	280	420	560	700	V		
Maximum DC blocking voltage		V _{DC}	50	100	200	400	600	800	1000	V		
	GBPC12					12						
Maximum average forward rectified output current (Fig. 1)	GBPC15					15				•		
	GBPC25	– I _{F (AV)} –	25							A		
	GBPC35					35						
	GBPC12					200						
Peak forward surge current single	GBPC15	– I _{FSM}	300						A			
sine-wave superimposed on rated load	GBPC25		300									
	GBPC35					400						
GBPC12						160						
Rating (non-repetitive, for t greater than	GBPC15	l ² t	375							A ² s		
1 ms and less than 8.3 ms) for fusing	GBPC25	1-1	375									
	GBPC35		660									
RMS isolation voltage from case to leads		V _{ISO}	2500						V			
Operating junction storage temperature ra	ange	T _J , T _{STG}	-55 to +150							°C		

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Document Number: 88612

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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)											
PARAMETER TEST CONDITIONS		TEST	CVMDOI	GBPC12, 15, 25, 35							
		STMBUL	SYMBOL 005	01	02	04	06	08	10	UNIT	
	GBPC12	I _F = 6.0 A									
Maximum instantaneous	GBPC15	I _F = 7.5 A	V _F							v	
forward drop per diode	GBPC25	I _F = 12.5 A		V _F 1.1					v		
	GBPC35	I _F = 17.5 A									
Maximum reverse DC current at rated		T _A = 25 °C					5.0				
DC blocking voltage per dic	ode	T _A = 125 °C	IR				500				μA
Typical junction capacitance	e per diode	4 V, 1 MHz	CJ				160				pF

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)										
PABAMETER		SYMBOL			GBPC	;12, 15,	25, 35			UNIT
PARAMETER		STINIDUL	005	01	02	04	06	08	10	UNIT
Typical thermal registeres	GBPC12 to GBPC25	R _{eJC} ⁽¹⁾				1.9				°C/W
Typical thermal resistance	Typical thermal resistance GBPC35					1.4				C/W

Notes

(1) With heatsink

⁽²⁾ Bolt down on heatsink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #10 screw

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
GBPC1206-E4/51	15.79	51	100	Paper box		
GBPC1506-E4/51	15.79	51	100	Paper box		
GBPC2506-E4/51	15.79	51	100	Paper box		
GBPC3506-E4/51	15.79	51	100	Paper box		
GBPC1206W-E4/51	13.8	51	100	Paper box		
GBPC1506W-E4/51	13.8	51	100	Paper box		
GBPC2506W-E4/51	13.8	51	100	Paper box		
GBPC3506W-E4/51	13.8	51	100	Paper box		



GBPC12, GBPC15, GBPC25, GBPC35

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

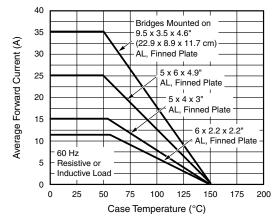


Fig. 1 - Maximum Output Rectified Current

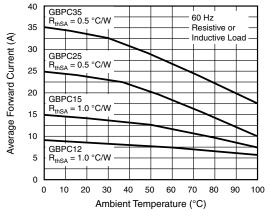


Fig. 2 - Maximum Output Rectified Current

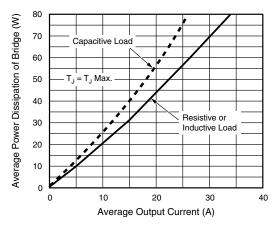


Fig. 3 - Maximum Power Dissipation

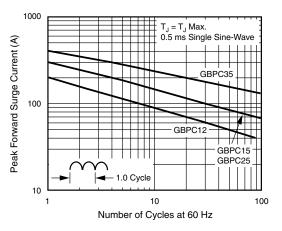


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

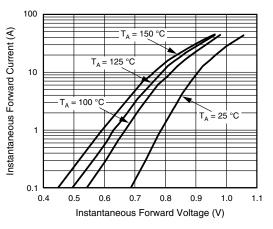


Fig. 5 - Typical Instantaneous Forward Characteristics Per Diode

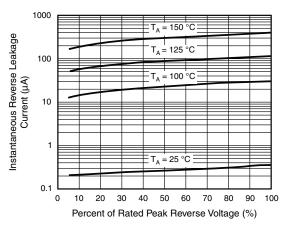


Fig. 6 - Typical Reverse Leakage Characteristics Per Diode

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GBPC12, GBPC15, GBPC25, GBPC35

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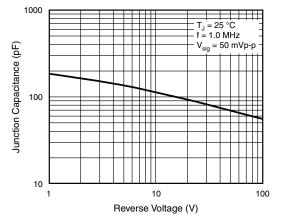


Fig. 7 - Typical Junction Capacitance Per Diode

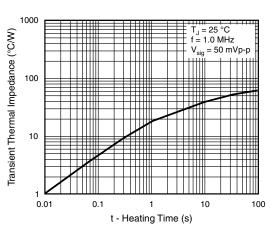
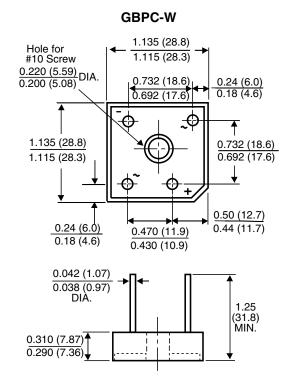


Fig. 8 - Typical Transient Thermal Impedance Per Diode





1.135 (28.8) Hole for 1.115 (28.3) #10 Screw <u>0.220 (5.59)</u>DIA. 0.672 (17.1) 0.200 (5.08) 0.632 (16.1) AC 0.672 (17.1) 0.582 (14.8) 0.632 (16.1) 0.542 (13.8) 1.135 (28.8) 1.115 (28.3) ᡟ 0.034 (0.86) 0.030 (0.76) 0.732 (18.6) 0.692 (17.6) 0.094 (2.4) DIA. 0.25 (6.35) 0.034 (0.86) 0.030 (0.76) Ð Ð 0.840 (21.3) Ð Ð 0.740 (18.8) 0.310 (7.87) 0.290 (7.36)

GBPC



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