

ANTREX Electronics

Electronic Components Sourcing Information

Product Reference Information

Part Number: GBPC6005-E4/51

Manufacturer: Vishay General Semiconductor - Diodes Division

Package: 4-Square, GBPC-6

Availability: Please confirm with sales

Product Page:

<https://antrexco.com/product/details/vishay-general-semiconductor-diodes-division/gbpc6005-e4-51.html>

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New & Original Components

Supplier verification and packaging condition review

CoC / RoHS / REACH documents available on request

Secure sourcing support for OEM / EMS projects

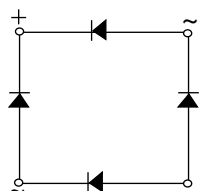
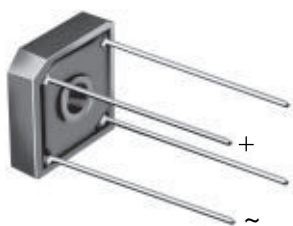
Note:

This PDF includes an ANTREX product reference cover page.

The original manufacturer datasheet follows from the next page.



Glass Passivated Single-Phase Bridge Rectifier



Case Style GBPC6

FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- Typical I_R less than 0.5 μ A
- High surge current capability
- High case dielectric strength 1500 V_{RMS}
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



LINKS TO ADDITIONAL RESOURCES



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: GBPC6

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

Terminals: silver plated leads, solderable per J-STD-002 and JESD22-B102

Polarity: as marked, positive lead by beveled corner

Mounting Torque: 10 cm·kg (8.8 in·lbs) maximum

Recommended Torque: 5.7 cm·kg (5 in·lbs) maximum

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	6 A
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
I_{FSM}	175 A
I_R	5 μ A
V_F at $I_F = 3.0$ A	1.0 V
T_J max.	150 °C
Package	GBPC6
Circuit configuration	Quad

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	GBPC 6005	GBPC 601	GBPC 602	GBPC 604	GBPC 606	GBPC 608	GBPC 610	UNIT
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS bridge input 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
Maximum average forward rectified output current at T _C = 50 °C (1)(2) T _A = 40 °C (3)	I _{F(AV)}	6.0 3.0							A
Peak forward surge current single sine-wave superimposed on rated load	I _{FSM}	175							A
Rating for fusing (t = 8.3 ms)	I ² t	127							A ² s
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150							°C

Notes

- (1) Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #6 screw
- (2) Unit mounted on 5.5" x 6.0" x 0.11" thick (14 cm x 15 cm x 0.3 cm) aluminum plate
- (3) Unit mounted on PCB at 0.375" (9.5 mm) lead length with 0.5" x 0.5" (12 mm x 12 mm) copper pads

**ELECTRICAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITIONS	GBPC 6005	GBPC 601	GBPC 602	GBPC 604	GBPC 606	GBPC 608	GBPC 610	UNIT
Maximum instantaneous forward voltage drop per diode	V _F	3.0 A	1.0							V
Maximum DC reverse current at rated DC blocking voltage per diode	I _R	T _A = 25 °C	5.0							μA
		T _A = 125 °C	500							
Typical junction capacitance per diode	C _J	4.0 V, 1 MHz	186				90			pF

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	GBPC 6005	GBPC 601	GBPC 602	GBPC 604	GBPC 606	GBPC 608	GBPC 610	UNIT
Typical thermal resistance ⁽¹⁾	R _{θJA}	22							°C/W
	R _{θJC}	7.3							

Notes

- (1) Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #6 screw
(2) Unit mounted on 5.5" x 6.0" x 0.11" thick (14 cm x 15 cm x 0.3 cm) aluminum plate
(3) Unit mounted on PCB at 0.375" (9.5 mm) lead length with 0.5" x 0.5" (12 mm x 12 mm) copper pads

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
GBPC606-E4/51	3.2	51	100	Paper box

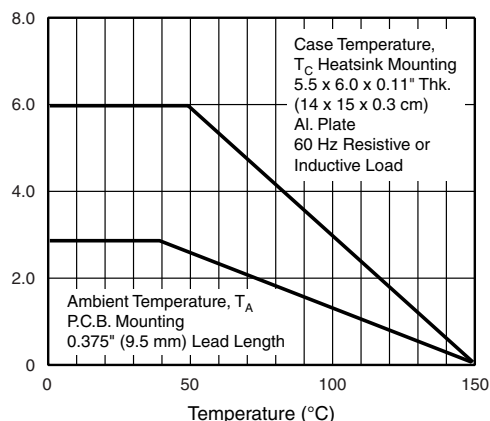
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Derating Curve Output Rectified Current

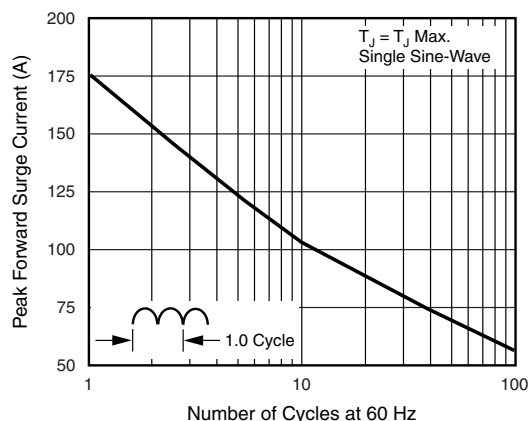


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

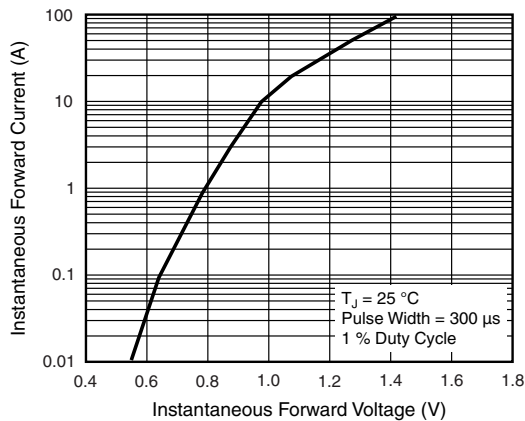


Fig. 3 - Typical Forward Characteristics Per Diode

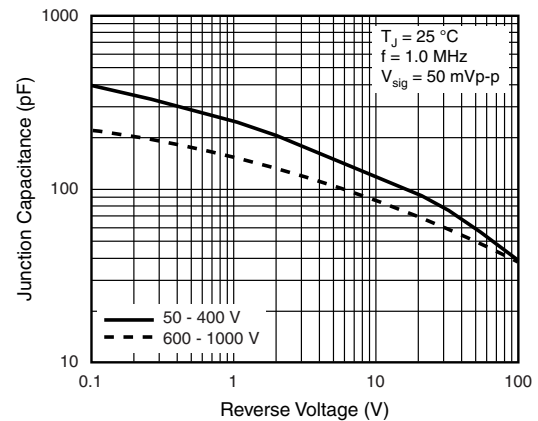


Fig. 5 - Typical Junction Capacitance Per Diode

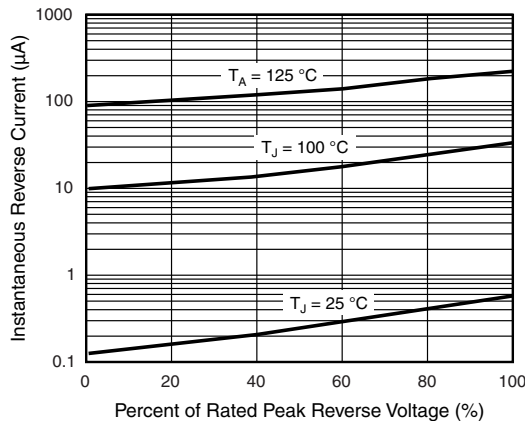


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

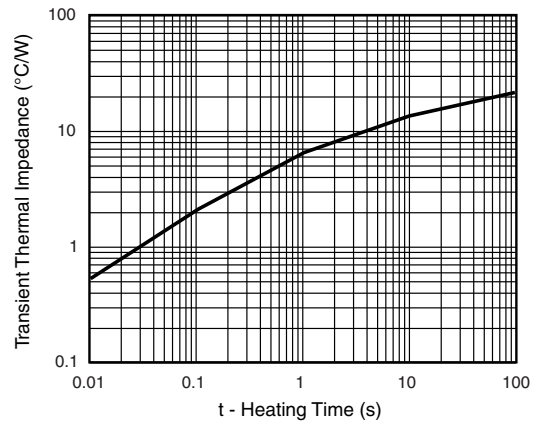
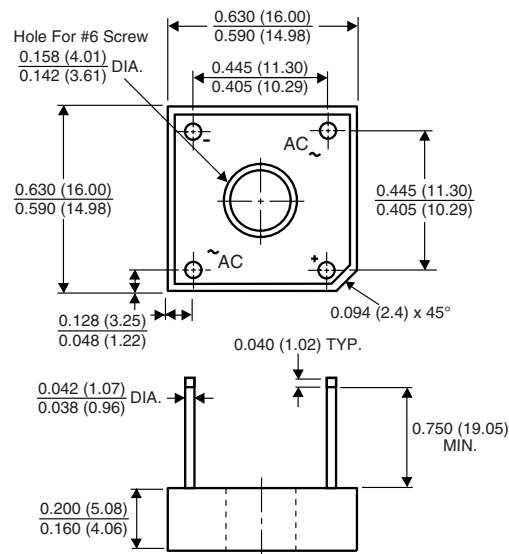


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Style GBPC6



Polarity shown on side of case: Positive lead by beveled corner



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