Bridge Rectifier

GBPC1506

600V / 15A

DATASHEET

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OEM – General Semiconductor

Source: General Semiconductor Databook 1998

GBPC12, 15, 25 AND 35 SERIES

GLASS PASSIVATED SINGLE-PHASE BRIDGE RECTIFIER

***Reverse Voltage** - 50 to 1000 Volts **Current Voltage** - 12.0 to 35.0 Amperes*

GBPC - W Wire leads

GBPC - Standard

FEATURES

- The plastic package has Underwriters Laboratory Flammability Classification 94V-0
- This series is UL recognized under component index, file number E54214
- Integrally molded heatsink provides very low thermal resistance for maximum heat dissipation
- Universal 3-way terminals; snap-on, wire wrap-around, or P.C.B. mounting
- High forward surge current capabilities
- Glass passivated chip junctions
- Typical I_R less than 0.3μA
- High temperature soldering guaranteed: 260°C/10 seconds at 5lbs. (2.3 kg) tension

MECHANICAL DATA

Case: Molded plastic with heatsink integrally mounted in the bridge encapsulation
Terminals: Either plated 0.25" (6.35mm). Faston lugs or plated copper leads 0.040" (1.02mm) diameter. Suffix letter "W" added to indicate leads (e.g. GBPC12005W).
Mounting Position: See NOTE 3
Polarity: Polarity symbols molded on body
Mounting Torque: 20 in. - lb. max. **Weight:** 0.53 ounce, 15 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

		SYMBOLS	GBPC12, 15, 25, 35 005	01	02	04	06	08	10	UNITS
Maximum repetitive peak reverse voltage		V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS voltage		V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC blocking voltage		V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum average forward rectified output current (SEE FIG.1)	GBPC12 GBPC15 GBPC25 GBPC35	$I_{(AV)}$	12.0 15.0 25.0 35.0							Amps
Peak forward surge current single sine-wave superimposed on rated load (JEDEC Method)	GBPC12 GBPC15 GBPC25 GBPC35	I_{FSM}	200.0 300.0 300.0 400.0							Amps
Rating (non-repetitive, for t greater than 1ms and less than 8.3ms) for fusing	GBPC12 GBPC15 GBPC25 GBPC35	I^2t	160.0 375.0 375.0 660.0							A^2sec
Maximum instantaneous forward voltage drop per leg at	GBPC12 I_F=6.0A GBPC15 I_F=7.5A GBPC25 I_F=12.5A GBPC35 I_F=17.5A	V_F	1.1							Volts
Maximum reverse DC current at rated DC blocking voltage per leg	T_A=25°C T_A=125°C	I_R	5.0 500.0							μA
RMS isolation voltage from case to leads		V_{ISO}	2500.0							Volts
Typical junction capacitance per leg (NOTE 1)		C_J	300.0							pF
Typical thermal resistance per leg (NOTE 2)	GBPC12-25 GBPC35	$R_{\theta JC}$	1.9 1.4							°C/W
Operating junction storage temperature range		T_J, T_{STG}	-55 to +150							°C

NOTES:
(1) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
(2) Thermal resistance from junction to case per leg
(3) Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer efficiency with #10 screw

RATINGS AND CHARACTERISTICS CURVES GBPC12, 15, 25 AND 35 SERIES

FIG. 1 - MAXIMUM OUTPUT RECTIFIED CURRENT

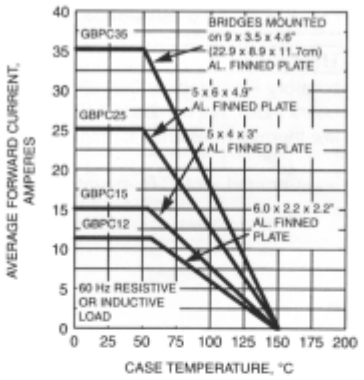


FIG. 2 - MAXIMUM OUTPUT RECTIFIED CURRENT

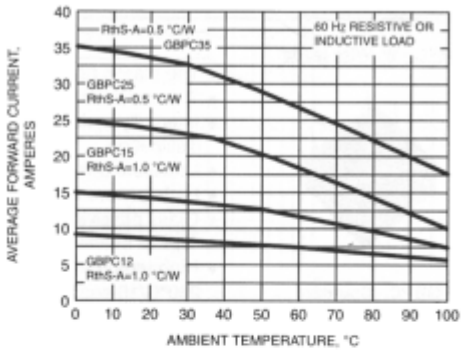


FIG. 3 - MAXIMUM POWER DISSIPATION

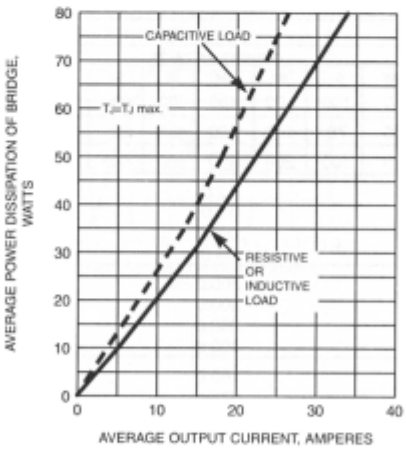
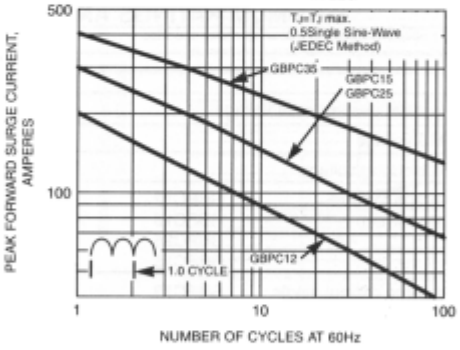


FIG. 4 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG



RATINGS AND CHARACTERISTICS CURVES GBPC12, 15, 25 AND 35 SERIES

FIG. 5 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

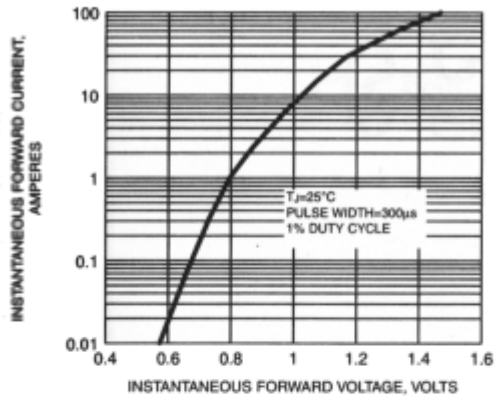


FIG. 6 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS PER LEG

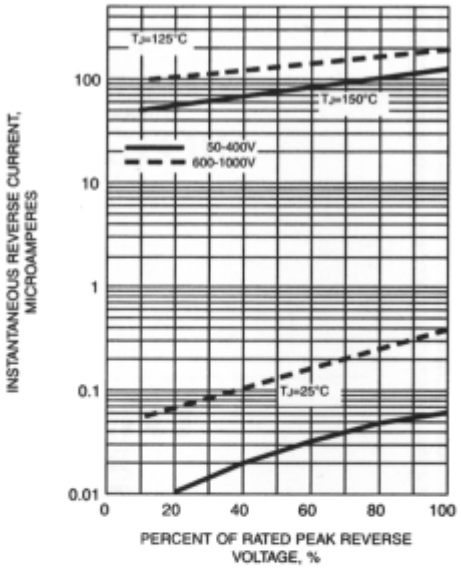


FIG. 7 - TYPICAL JUNCTION CAPACITANCE PER LEG

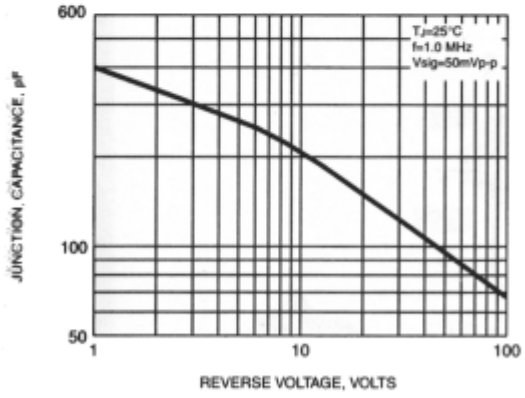


FIG. 8 - TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

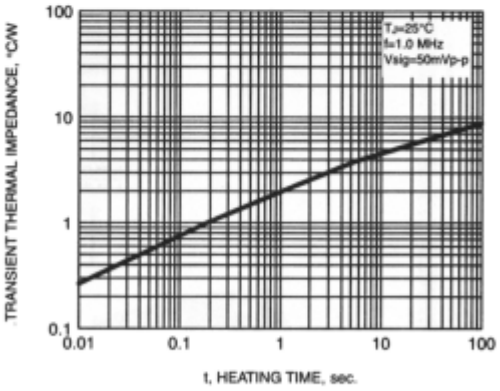


FIG. 9

GBPC

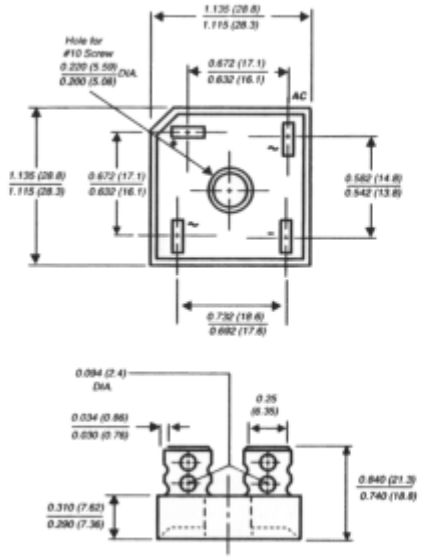
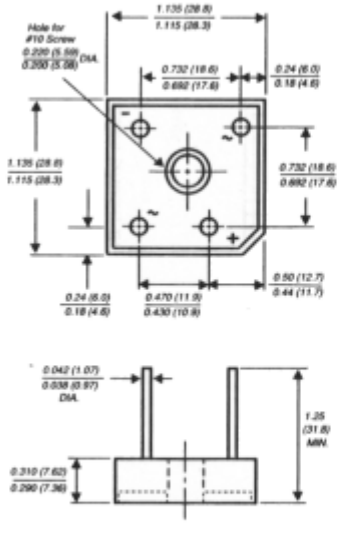


FIG. 10

GBPC-W



Dimensions in inches and (millimeters)

NOTES:
(1) Corrosion resistant terminals designed with 0.25" female quick connectors for wrap or snap-on
(2) A thin film of silicone thermal compound is recommended between the bridge case and mounting surface for improved thermal conduction