

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 $0.3\mu A$
- ◆ 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.

			GBPC12, 15, 25, 35								
			SYMBOLS	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	I _(AV)	12.0							Amps	
	GBPC15		15.0								
	GBPC25		25.0								
	GBPC35		35.0								
Peak forward surge current single sine-wave superimposed on rated load (JEDEC Method)	GBPC12	I _{FSM}	200.0							Amps	
	GBPC15		300.0								
	GBPC25		300.0								
	GBPC35		400.0								
Rating (non-repetitive, for t greater than 1ms and less than 8.3ms) for fusing	GBPC12	I ² t	160.0							A ² sec	
	GBPC15		375.0								
	GBPC25		375.0								
	GBPC35		660.0								
Maximum instantaneous forward voltage drop per leg at	GBPC12	V _F	I _F =6.0A							Volts	
	GBPC15		I _F =7.5A								
	GBPC25		I _F =12.5A								
	GBPC35		I _F =17.5A								
Maximum reverse DC current at rated DC blocking voltage per leg		T _A =25°C T _A =125°C	I _R	5.0							μA
				500.0							
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 _{θJC}	1.9							°C/W
				1.4							
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

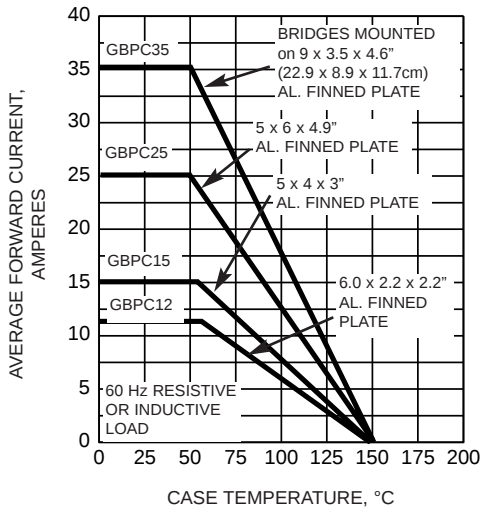


FIG. 2 - MAXIMUM OUTPUT RECTIFIED CURRENT

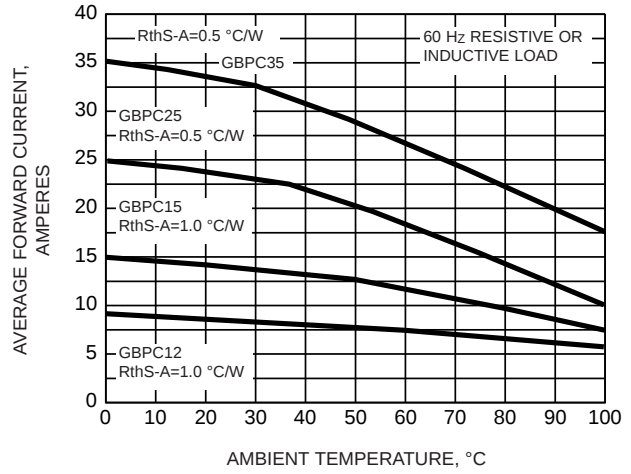


FIG. 3 - MAXIMUM POWER DISSIPATION

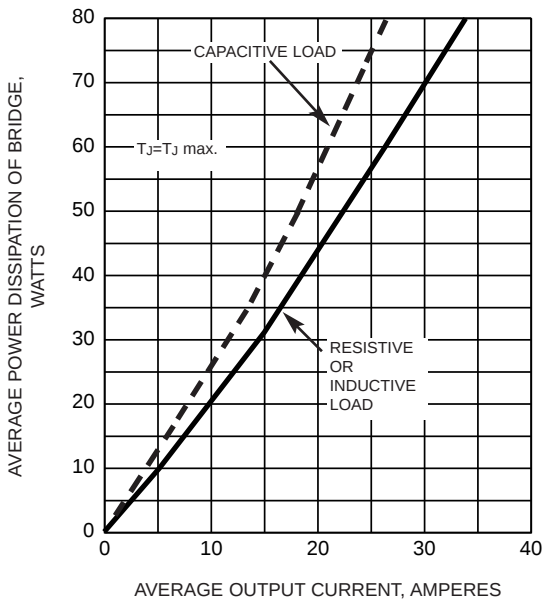
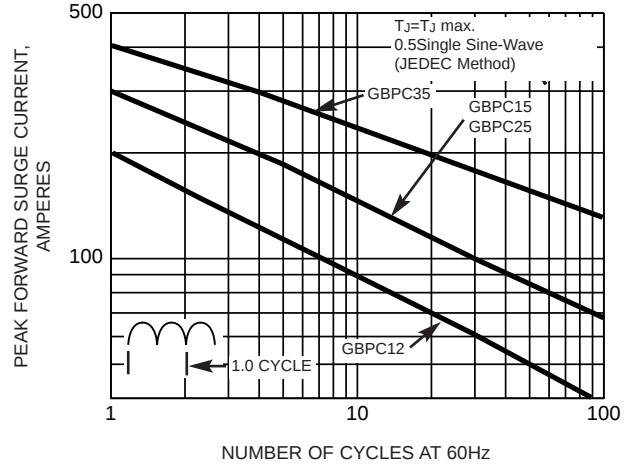


FIG. 4 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG



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

FIG. 5 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS PER LEG

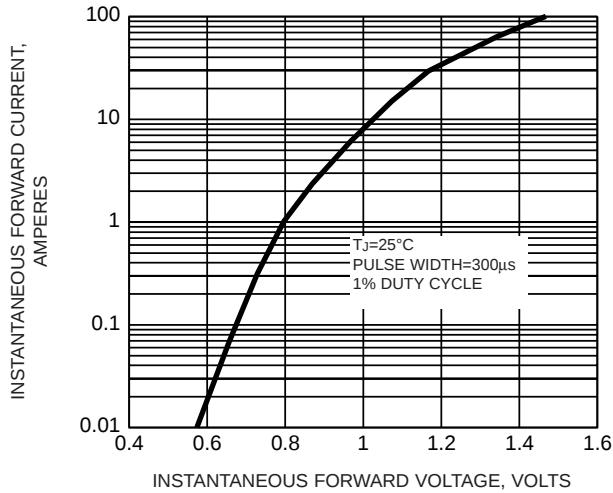


FIG. 6 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS PER LEG

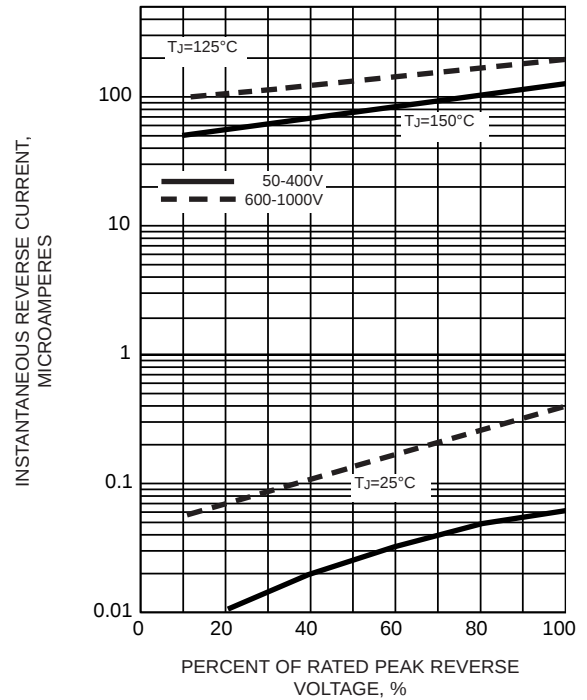


FIG. 7 - TYPICAL JUNCTION CAPACITANCE PER LEG

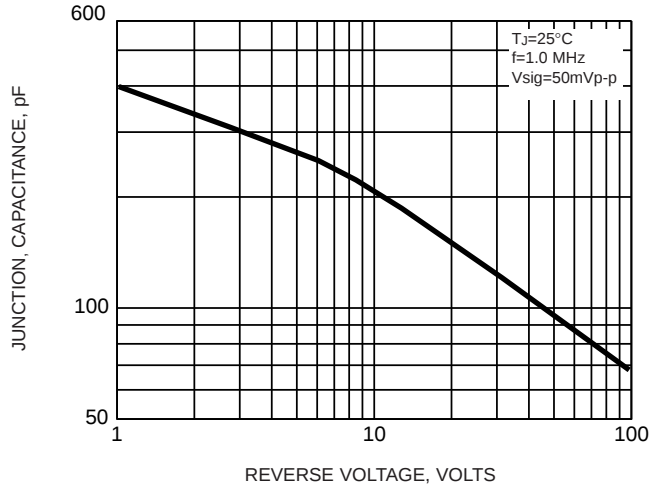


FIG. 8 - TYPICAL TRANSIENT THERMAL IMPEDANCE PER LEG

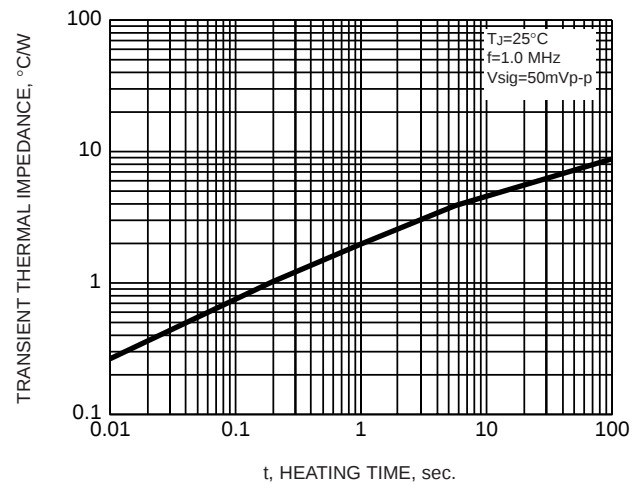


FIG. 9

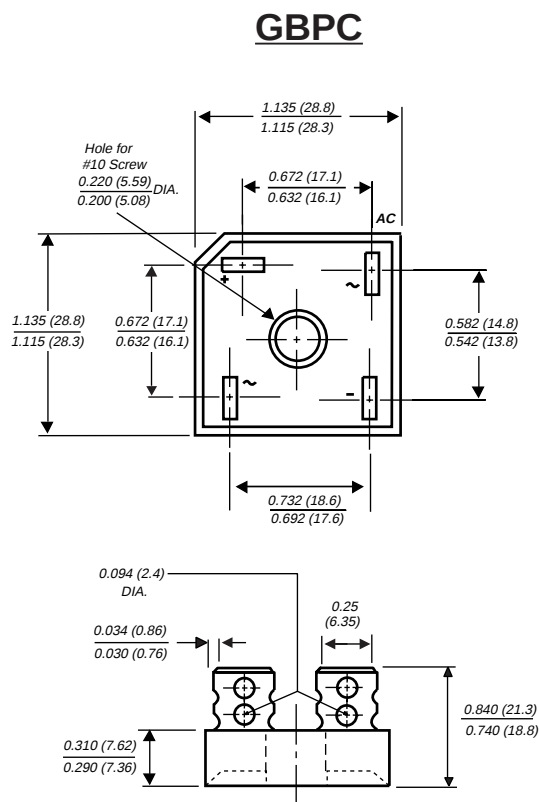
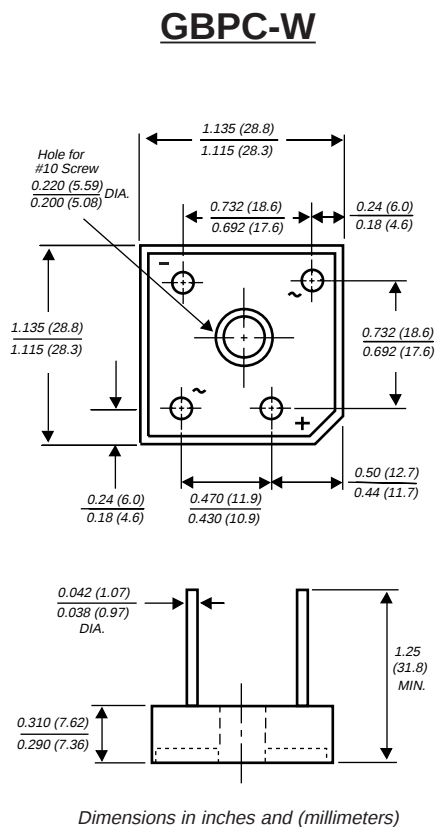


FIG. 10



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