

15A, 25A, 35A, 50V - 1000V Standard Bridge Rectifier

FEATURES

- Glass passivated chip junction
- Integrally molded heatsink provide very low thermal resistance for maximum heat dissipation
- Typical I_R less than $0.2\mu A$
- High surge current capability
- UL Recognized File # E-326243
- RoHS Compliant

APPLICATIONS

- Switching mode power supply (SMPS)
- AC to DC converter

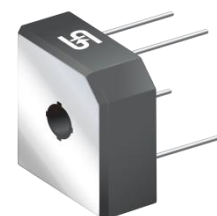
MECHANICAL DATA

- Case: GBPC
GBPC-W: Wire structure
GBPC40-M: Terminal cathode parallel to anode
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Mounting torque: 20 in-lbs maximum
- Polarity: As marked
- Weight: 16.95g (approximately)

| KEY PARAMETERS | | |
|----------------|------------|------|
| PARAMETER | VALUE | UNIT |
| I_F | 15, 25, 35 | A |
| V_{RRM} | 50 - 1000 | V |
| I_{FSM} | 300, 400 | A |
| T_{JMAX} | 150 | °C |
| Package | GBPC | |
| Configuration | Quad | |



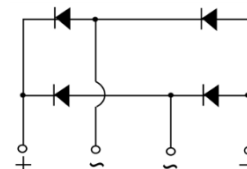
GBPC



GBPC-W



GBPC-M



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ C$ unless otherwise noted)

| PARAMETER | SYMBOL | GBPC15, 25, 35 | | | | | | | UNIT |
|--|--------------|----------------|-----|-----|-----|-----|-----|------|--------|
| | | 005 | 01 | 02 | 04 | 06 | 08 | 10 | |
| Repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Forward current | GBPC15 | 15 | | | | | | | A |
| | GBPC25 | 25 | | | | | | | A |
| | GBPC35 | 35 | | | | | | | A |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load | GBPC15 | 300 | | | | | | | A |
| | GBPC25 | 400 | | | | | | | A |
| | GBPC35 | 400 | | | | | | | A |
| Rating for fusing ($t < 8.3ms$) | GBPC15 | 373 | | | | | | | A^2s |
| | GBPC25 | 664 | | | | | | | A^2s |
| | GBPC35 | 664 | | | | | | | A^2s |
| Junction temperature | T_J | - 55 to +150 | | | | | | | °C |
| Storage temperature | T_{STG} | - 55 to +150 | | | | | | | °C |

| THERMAL PERFORMANCE | | | |
|-------------------------------------|-----------------|------------|-------------|
| PARAMETER | SYMBOL | TYP | UNIT |
| Junction-to-case thermal resistance | $R_{\theta JC}$ | 1.5 | °C/W |

| ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | |
|---|--------|--|---------------|------------|------------|---------------|
| PARAMETER | | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
| Forward voltage per diode ⁽¹⁾ | GBPC15 | $I_F = 7.5\text{A}, T_J = 25^\circ\text{C}$ | V_F | - | 1.1 | V |
| | GBPC25 | $I_F = 12.5\text{A}, T_J = 25^\circ\text{C}$ | | - | 1.1 | V |
| | GBPC35 | $I_F = 17.5\text{A}, T_J = 25^\circ\text{C}$ | | - | 1.1 | V |
| Reverse current @ rated V_R per diode ⁽²⁾ | | $T_J = 25^\circ\text{C}$ | I_R | - | 5 | μA |

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

| ORDERING INFORMATION | | |
|------------------------------------|----------------|----------------|
| ORDERING CODE⁽¹⁾ | PACKAGE | PACKING |
| GBPC*x | GBPC | 50 / Tray |
| GBPC*xM | GBPC-M | 50 / Tray |
| GBPC*xW | GBPC-W | 50 / Tray |

Notes:

1. "*" defines current from 15A (GBPC15x/GBPC15xM/GBPC15xW) to 35A (GBPC35x/GBPC35xM/GBPC35xW), "x" defines voltage from 50V(GBPC*005/GBPC*005M/GBPC*005W) to 1000V(GBPC*10/GBPC*10M/GBPC*10W)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

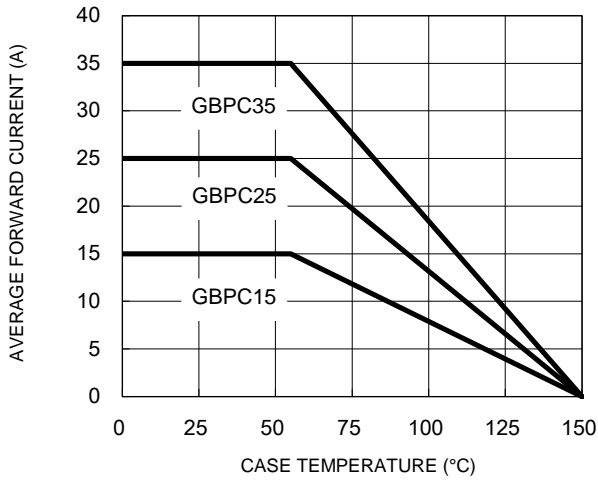


Fig.2 Typical Junction Capacitance

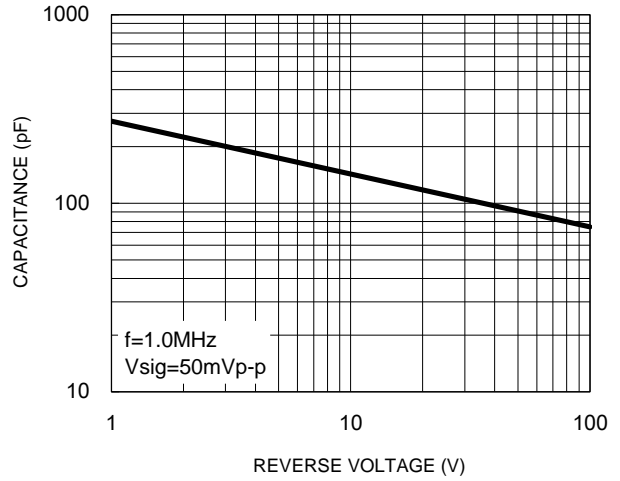


Fig.3 Typical Reverse Characteristics

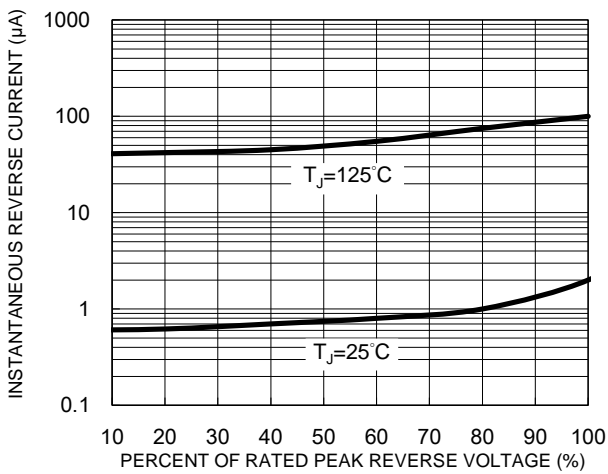


Fig.4 Typical Forward Characteristics

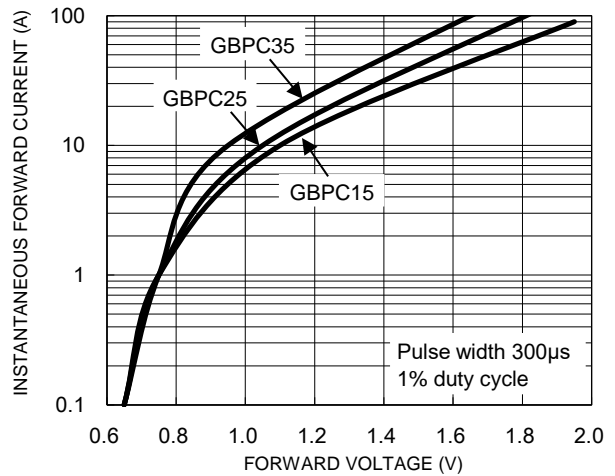
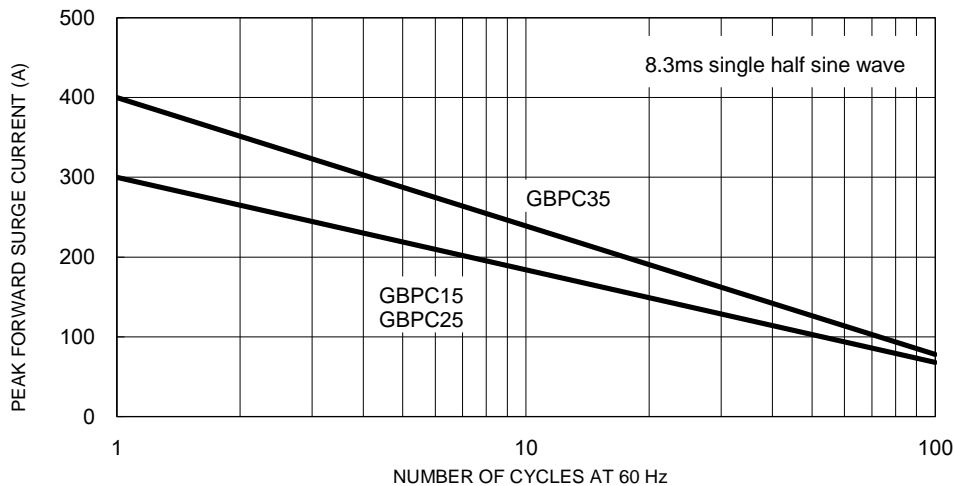
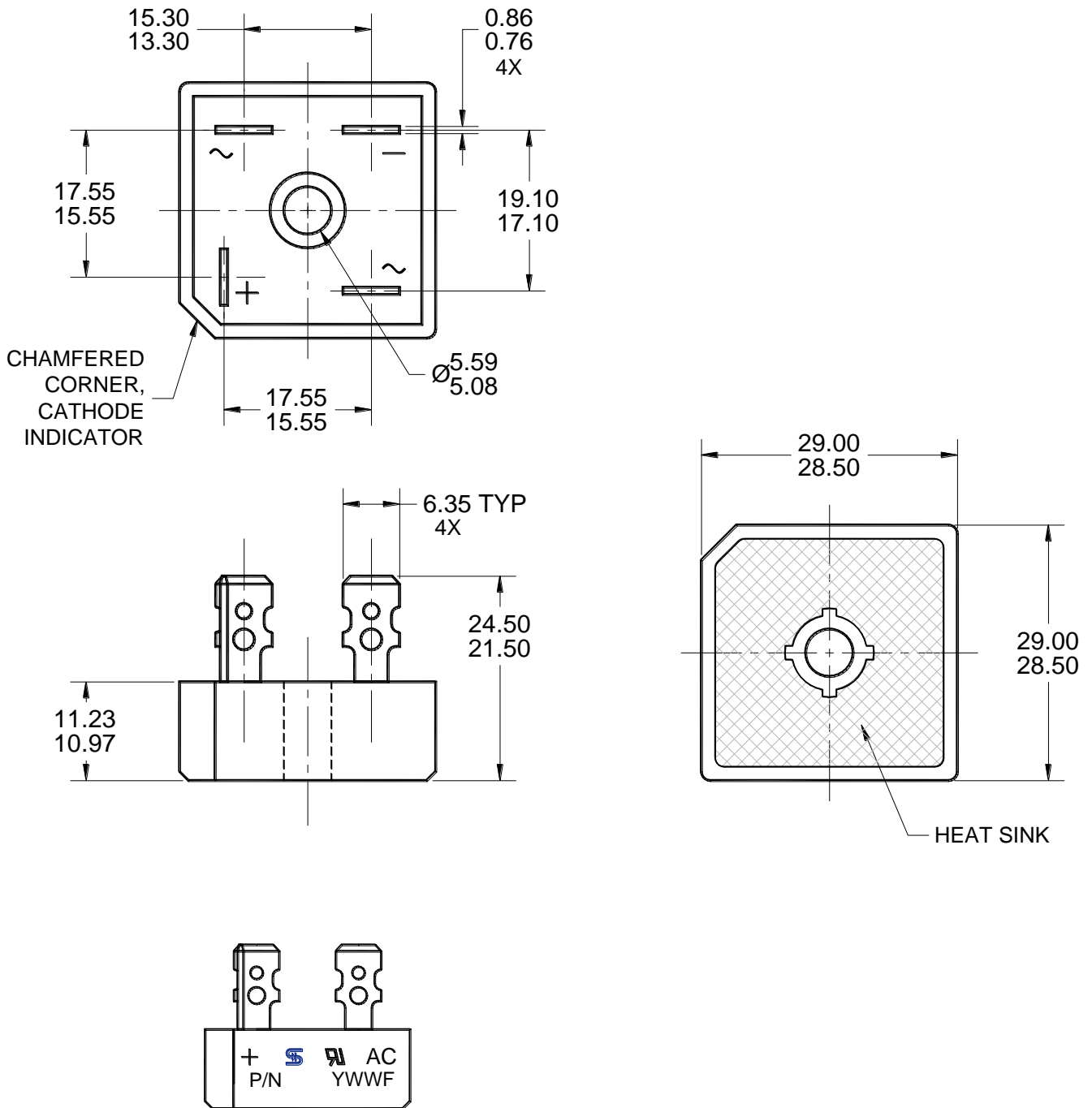


Fig.5 Maximum Non-Repetitive Forward Surge Current



PACKAGE OUTLINE DIMENSIONS

GBPC



MARKING DIAGRAM

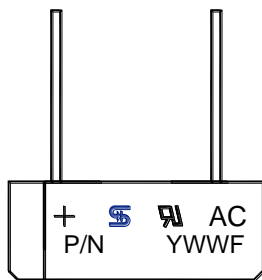
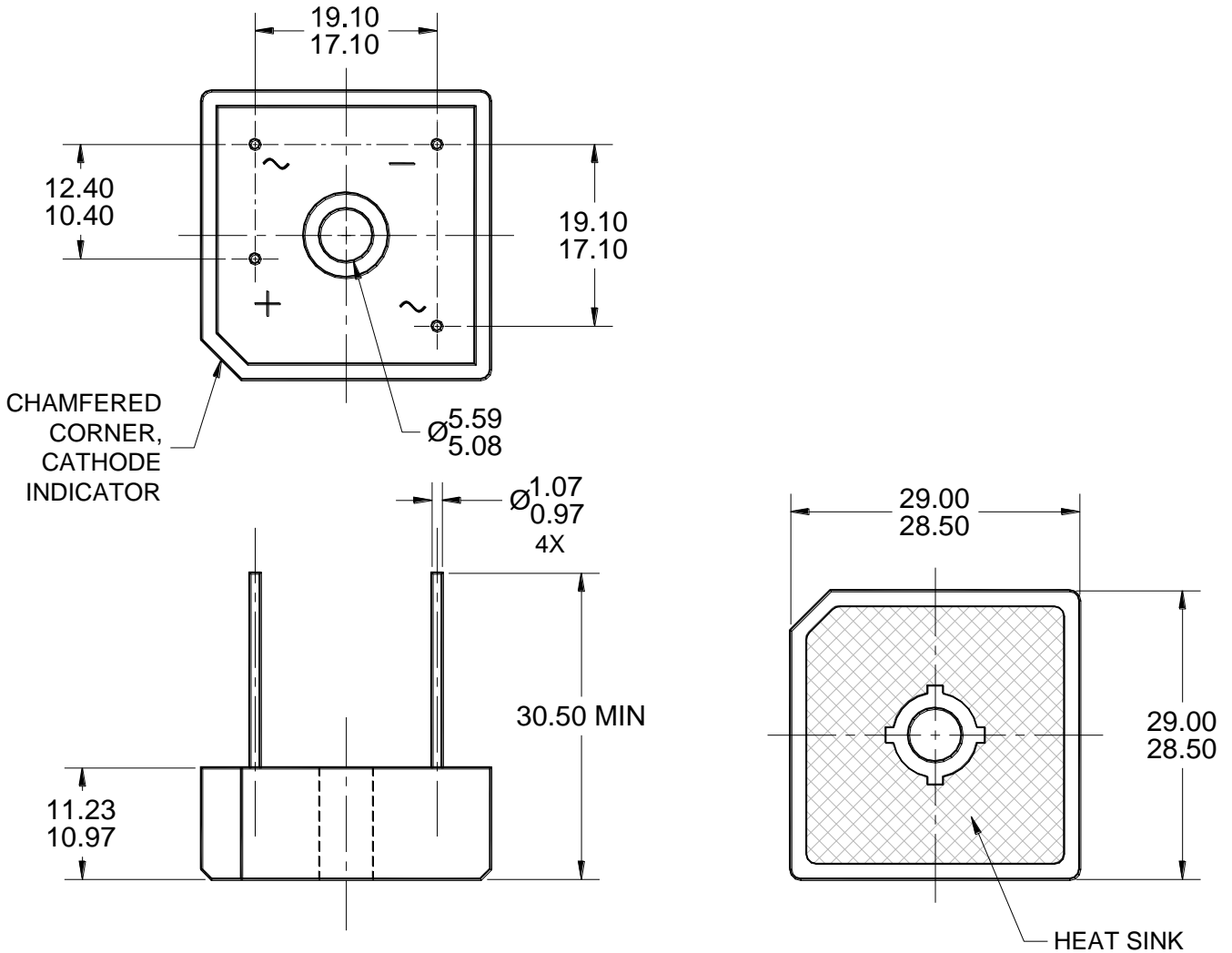
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 YWW = DATE CODE
 F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

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2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. DWG NO. REF: HQ2SD07-GBPC-054 REV A.

PACKAGE OUTLINE DIMENSIONS

GBPC-W



MARKING DIAGRAM

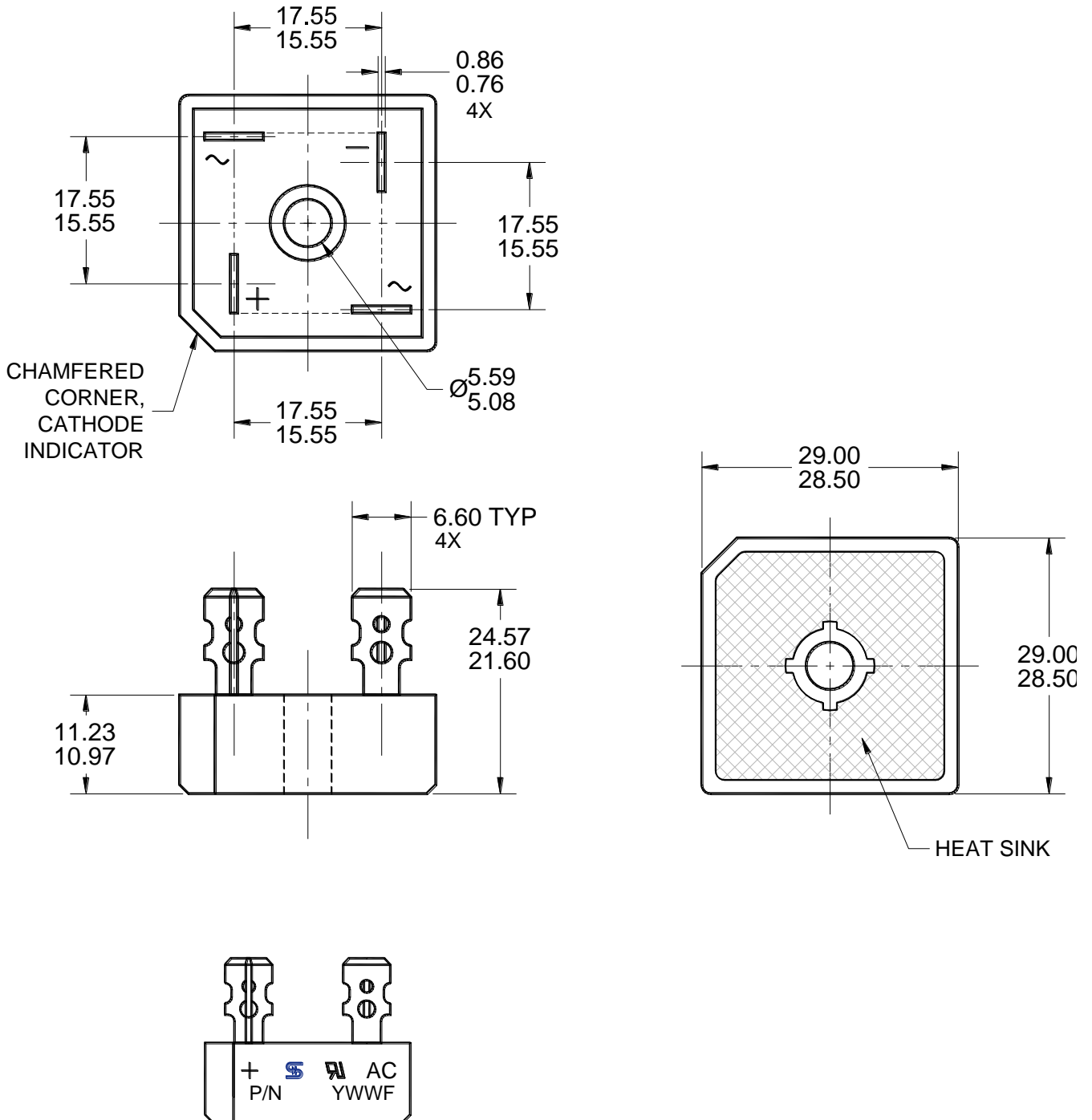
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PACKAGE OUTLINE DIMENSIONS

GBPC-M



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