

# DATA SHEET

## CP600 ~ CP6010

**SINGLE-PHASE SILICON BRIDGE-P.C. MTG 3A , HEAT-SINK MTG 6A**

**VOLTAGE 50 to 1000 Volts CURRENT - P.C. MTG 3A , HEAT-SINK MTG 6A**



**Recognized File # E111753**

### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O .
- Surge Overload Ratings to 125 Amperes.
- Low forward voltage, and reverse leakage.
- Small size , simple installation.
- Reliable low cost construction utilizing molded plastic technique.

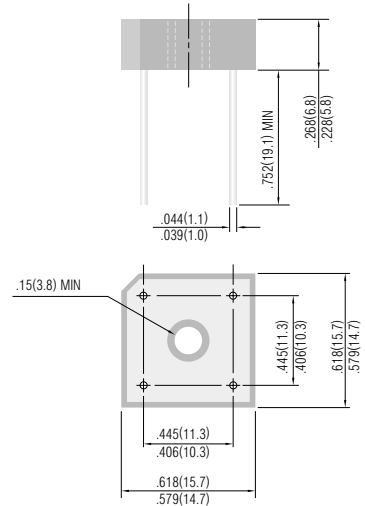
### MECHANICAL DATA

Mounting Position: Any

Weight: 0.2 ounce, 5.6 gram

Terminals: Lead solderable per MIL-STD-202 Method 208

Mounting Torque: 5 in. lb. max.



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase , half wave ,60Hz, resistive or inductive load.

For capacitive load , derate current by 20%.

|                                                                                                                              | CP600       | CP601 | CP602 | CP604 | CP606 | CP608 | CP6010 | UNITS                |
|------------------------------------------------------------------------------------------------------------------------------|-------------|-------|-------|-------|-------|-------|--------|----------------------|
| Maximum Recurrent Peak Reverse Voltage                                                                                       | 50          | 100   | 200   | 400   | 600   | 800   | 1000   | V                    |
| Maximum RMS Bridge input Voltage                                                                                             | 35          | 70    | 140   | 280   | 420   | 560   | 700    | V                    |
| Maximum DC Blocking Voltage                                                                                                  | 50          | 100   | 200   | 400   | 600   | 600   | 1000   | V                    |
| Maximum Average Forward Current at $T_C=50^{\circ}\text{C}$<br>See Fig 2 at $T_A=25^{\circ}\text{C}$                         | 6<br>3      |       |       |       |       |       |        | A                    |
| Peak Forward Surge Current ,8.3ms<br>single half sine-wave superimposed on rated load                                        | 125         |       |       |       |       |       |        | A                    |
| Maximum Forward Voltage per Bridge Element<br>Specified Current at 3.0A DC & 25°C. See Fig 3                                 | 1.1         |       |       |       |       |       |        | V                    |
| Maximum Reverse Leakage at Rated DC Blocking<br>Voltage per element. at 25°C<br>See Fig 4 at 100°C                           | 10.0<br>1.0 |       |       |       |       |       |        | $\mu\text{A}$<br>mA  |
| $I^2t$ Rating for fusing ( $t < 8.35 \text{ ms}$ )                                                                           | 127         |       |       |       |       |       |        | $\text{A}^2\text{S}$ |
| Typical junction capacitance per leg (NOTE 4) $C_J$                                                                          | 186         |       |       |       |       |       |        | pF                   |
| Typical Thermal resistance per leg ( NOTE 3) $R_{\theta JA}$<br>Typical Thermal resistance per leg ( NOTE 2) $R_{\theta JC}$ | 22.0<br>7.3 |       |       |       |       |       |        | $^{\circ}\text{C/W}$ |
| Operating Temperature Range $T_J$                                                                                            | -55 to +125 |       |       |       |       |       |        | $^{\circ}\text{C}$   |
| Storage Temperature Range $T_A$                                                                                              | -55 to +150 |       |       |       |       |       |        | $^{\circ}\text{C}$   |

#### NOTES:

1. Bolt down on heat-sink with silicon thermal compound between bridge and mounting surface for maximum heat transfer with #6 screw.
2. Unit mounted on 5.0 X 6.0 X 0.11" thick ( 14 X 15 X 0.3 cm ) AL. plate.
3. Unit mounted on P.C.B at 0.395"(9.5mm) lead length with 0.5 X 0.5" ( 12 X 12 mm ) copper pads.
4. Measured at 1.0MHZ and applied reverse voltage of 4.0 volts.

## RATING AND CHARACTERISTIC CURVES

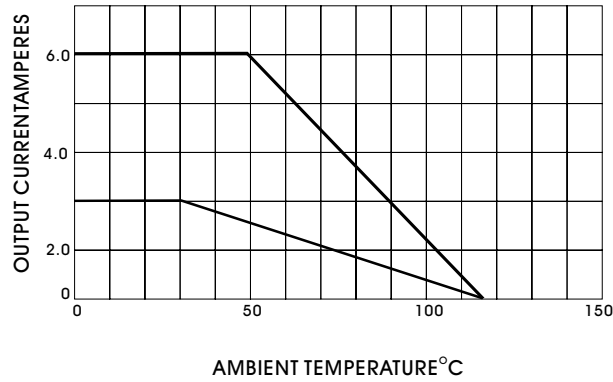


Fig. 1 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

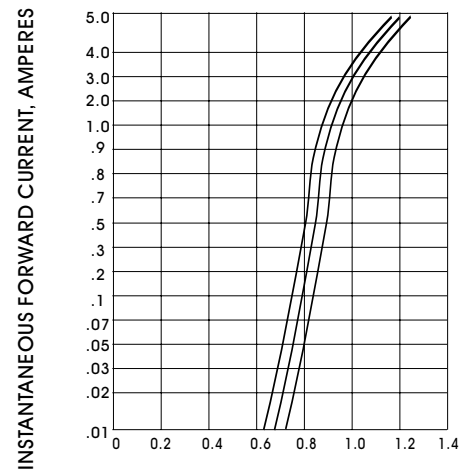


Fig. 2 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS (25°C)

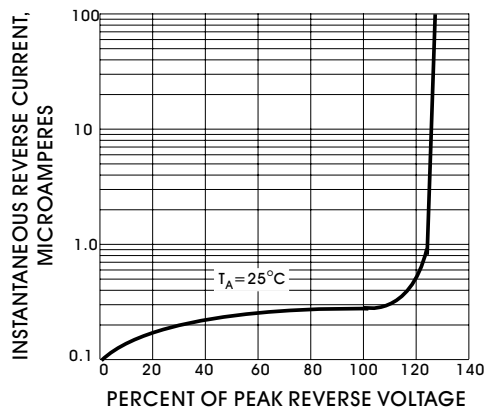


Fig. 3 - TYPICAL PEAK REVERSE CHARACTERISTICS

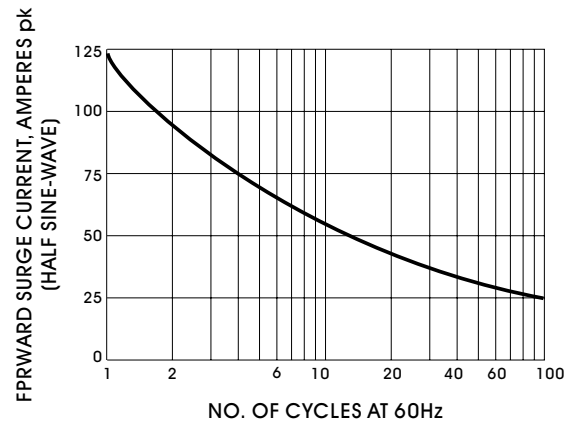


Fig. 4 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT