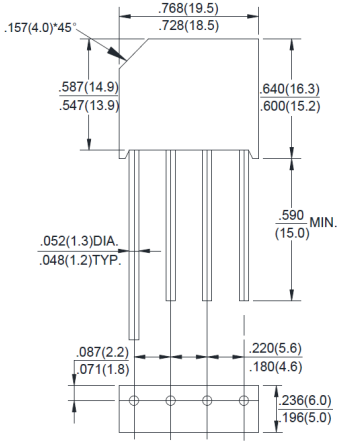
Hottech® Semiconductor

# RS501 THRU RS507

**SINGLE-PHASE SILICON BRIDGE Reverse Voltage -** 65 to 1000 Volts
**Forward Current -** 5.0 Amperes

## Features

- Plastic material used carries Underwriters Laboratory recognition 94V-0
- High surge current capability
- Ideal for printed circuit board
- Typical $I_R$ less than 1 μ A
- Built-in printed board stand offs
- High temperature soldering guaranteed: 250℃ for 5 seconds



Dimensions in inches and (milimeters)

## Mechanical Data

- **Case:** Reliable low cost construction utilizing molded plastic technique
- **Terminals:** Leads solderable per MIL-STD-202, method 208
- **Mounting Position:** Any
- **Weight:** 0.92 ounce, 25.3 grams

## Maximum Ratings and Electrical Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified. resistive or inductive load at 50Hz or 60Hz.

| | Symbols | RS501 | RS502 | RS503 | RS504 | RS505 | RS506 | RS507 | Units |
|---|---|---|---|---|---|---|---|---|---|
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 65 | 125 | 200 | 400 | 600 | 800 | 1000 | Volts |
| Maximum RMS input voltage R + C-Load | $V_{RMS}$ | 40 | 80 | 125 | 250 | 380 | 500 | 630 | Volts |
| Maximum DC blocking voltage [1] | $V_{DC}$ | 65 | 125 | 200 | 400 | 600 | 800 | 1000 | Volts |
| Maximum non-repetitive peak reverse voltage [1] | $V_{RSM}$ | 100 | 190 | 300 | 600 | 900 | 1200 | 1500 | Volts |
| Maximum average forward output current $I_{FAVM}$ natural cooling,<br>$T_A$=45℃<br>C-Load<br>R+L-Load<br>on chassis=31in², 200cm²; $T_A$=45℃<br>C-Load<br>R+L-Load | $I_{(AV)}$ | 3.3<br>4.0<br><br>5.0<br>6.0 | | | | | | | Amps |
| Maximum repetitive peak forward surge current | $I_{FRM}$ | 30.0 | | | | | | | APK |
| Peak surge forward current single sine-wave on rated load<br>$T_J$=25℃<br>$T_J$=150℃ | $I_{FSM}$ | 250<br>200 | | | | | | | APK |
| I²t Rating for fusing (t>8.3mS)<br>$T_J$=25℃<br>$T_J$=150℃ | I²t | 312<br>200 | | | | | | | A²S<br>A²S |
| Minimum series resistance at $V_{RMS}$ | R | 0.15 | 0.3 | 0.6 | 1.2 | 1.8 | | | OHM |
| Maximum reservoir capacitor | C | 10000 | 5000 | 5000 | 2500 | 1000 | | | μ F |
| Maximum reverse current at rated repetitive peak voltage<br>$T_J$=25℃<br>$T_J$=150℃ | $I_R$ | 10<br>6.0 | | | | | | | μ A<br>mA |
| Maximum instantaneous forward voltage drop per element at 5.0A | $V_F$ | 1.1 | | | | | | | VPK |
| Operating and storage temperature range | $T_J$, $T_{STG}$ | -55 to +150 | | | | | | | ℃ |

**Note:**

(1) Valid for each bridge element

## RATINGS AND CHARACTERISTIC CURVES

FIG. 1 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

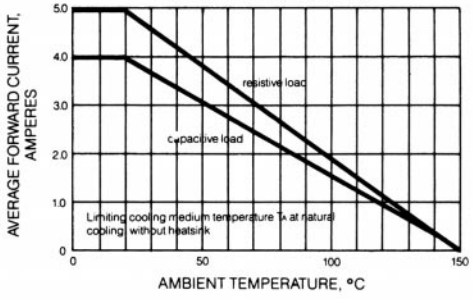



FIG. 2 — DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

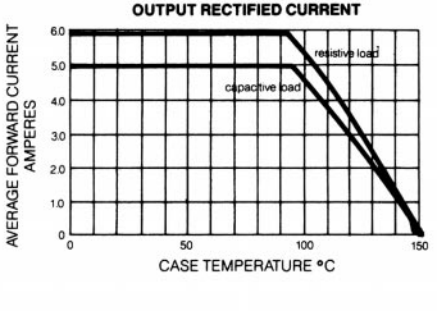



FIG. 3 — TYPICAL INSTANTANEOUS FORWARD CHARACTERISTIC PER BRIDGE ELEMENT

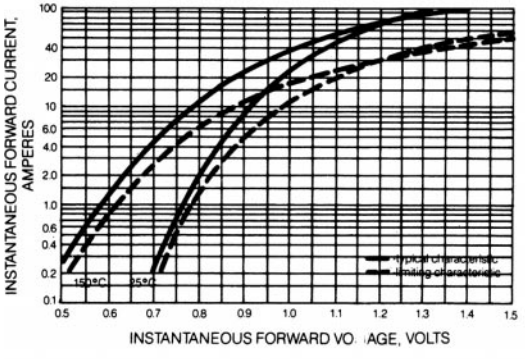



FIG. 4 — MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

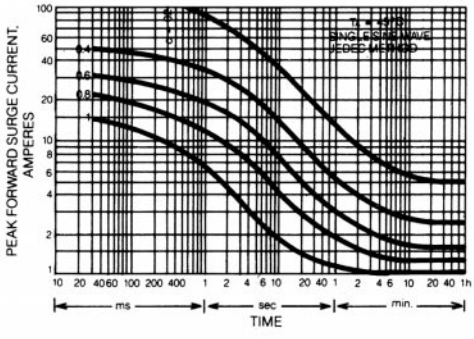



FIG. 5 — MAXIMUM TOTAL BRIDGE POWER DISSIPATION

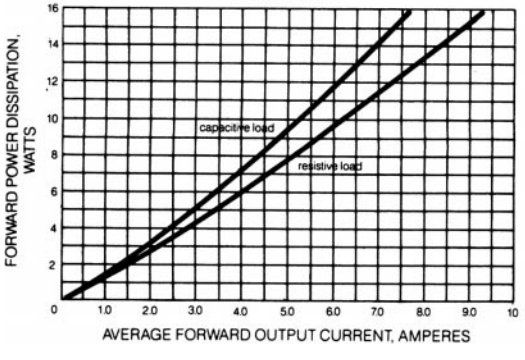



FIG. 6 — MEAN AVERAGE FORWARD CURRENT CASE TEMPERATURE