

## 4 AMP SILICON BRIDGE RECTIFIERS

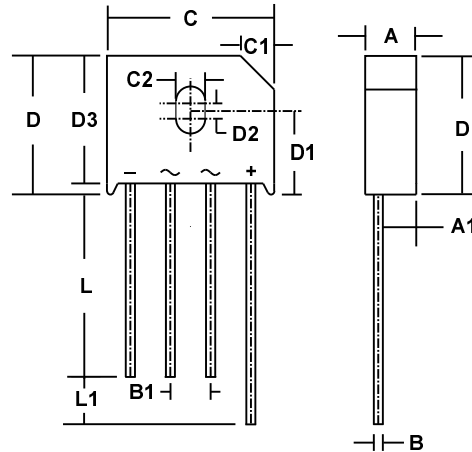
### FEATURES

- VOID FREE VACUUM DIE SOLDERING FOR MAXIMUM MECHANICAL STRENGTH AND HEAT DISSIPATION (Solder Voids: Typical < 2%, Max. < 10% of Die Area)
- BUILT-IN STRESS RELIEF MECHANISM FOR SUPERIOR RELIABILITY AND PERFORMANCE
- SURGE OVERLOAD RATING TO 200 AMPS PEAK
- IDEAL FOR PRINTED CIRCUIT BOARD APPLICATIONS
- **UL RECOGNIZED - FILE #E124962**
- **RoHS COMPLIANT**

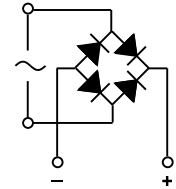
### MECHANICAL DATA

- Case: Molded Epoxy (UL Flammability Rating 94V-0)
- Terminals: Round silver plated pins
- Soldering: Per MIL-STD 202 Method 208 guaranteed
- Polarity: Marked on case
- Mounting Position: Any. Max. mounting torque = 5 in lb
- Weight: 0.3 Ounces (8 Grams)

### MECHANICAL SPECIFICATION



| SYM | MILLIMETERS |       | INCHES |       |
|-----|-------------|-------|--------|-------|
|     | MIN         | MAX   | MIN    | MAX   |
| A   | 6.6         | 7.1   | 0.260  | 0.280 |
| A1  | 4.7         | 5.2   | 0.185  | 0.205 |
| B   | 1.22        | 1.32  | 0.048  | 0.052 |
| B1  | 4.57        | 5.59  | 0.180  | 0.220 |
| C   | 22.70       | 23.24 | 0.895  | 0.915 |
| C1  | 4.2         | 4.7   | 0.165  | 0.185 |
| C2  | 3.6         | 4.1   | 0.140  | 0.160 |
| D   | n/a         | 19.3  | n/a    | 0.760 |
| D1  | 10.3        | 11.3  | 0.405  | 0.455 |
| D2  | 1.7         | 2.2   | 0.065  | 0.085 |
| D3  | 16.5        | 17.8  | 0.660  | 0.700 |
| L   | 25.4        | n/a   | 1.0    | n/a   |
| L1  | 4.57        | 6.8   | 0.180  | 0.260 |



**SERIES SBU4A - SBU4M**

### MAXIMUM RATINGS & ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, 60Hz, resistive or inductive load. For capacitive loads, derate current by 20%.

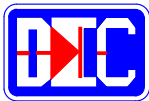
| PARAMETER (TEST CONDITIONS)                                                                                                  | SYMBOL                               | RATINGS               |        |        |        |        |        |        |       | UNITS |
|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------|--------|--------|--------|--------|--------|--------|-------|-------|
| Series Number                                                                                                                |                                      | SBU 4A                | SBU 4B | SBU 4D | SBU 4G | SBU 4J | SBU 4K | SBU 4M |       |       |
| Maximum DC Blocking Voltage                                                                                                  | V <sub>RM</sub>                      | 50                    | 100    | 200    | 400    | 600    | 800    | 1000   | VOLTS |       |
| Maximum RMS Voltage                                                                                                          | V <sub>RMS</sub>                     | 35                    | 70     | 140    | 280    | 420    | 560    | 700    |       |       |
| Maximum Peak Recurrent Reverse Voltage                                                                                       | V <sub>RRM</sub>                     | 50                    | 100    | 200    | 400    | 600    | 800    | 1000   |       |       |
| Average Forward Rectified Current<br>T <sub>c</sub> = 100° C (Note 1)<br>T <sub>A</sub> = 30° C (Note 2)                     | I <sub>o</sub>                       | 4<br>4                |        |        |        |        |        |        |       | AMPS  |
| Peak Forward Surge Current, Single 60Hz Half-Sine Wave<br>Superimposed on Rated Load (JEDEC Method). T <sub>J</sub> = 150° C | I <sub>FSM</sub>                     | 200                   |        |        |        |        |        |        |       |       |
| Maximum Forward Voltage (Per Diode) at 4 Amps DC                                                                             | V <sub>FM</sub>                      | 0.95 (Typical < 0.90) |        |        |        |        |        |        |       | VOLTS |
| Maximum Average DC Reverse Current<br>At Rated DC Blocking Voltage<br>@ T <sub>A</sub> = 25° C<br>@ T <sub>A</sub> = 100° C  | I <sub>RM</sub>                      | 1<br>50               |        |        |        |        |        |        |       | μA    |
| Typical Thermal Resistance<br>Junction to Ambient (Note 2)<br>Junction to Lead (Note 1)                                      | R <sub>θJA</sub><br>R <sub>θJL</sub> | 19.0<br>2.4           |        |        |        |        |        |        |       | °C/W  |
| Minimum Insulation Breakdown Voltage (Circuit to Case)                                                                       | V <sub>ISO</sub>                     | 2500                  |        |        |        |        |        |        |       | VOLTS |
| Operating and Storage Temperature Range                                                                                      | T <sub>J</sub> ,T <sub>STG</sub>     | -55 to +150           |        |        |        |        |        |        |       | °C    |

NOTES: (1) Bridge mounted on 2.0" x 1.6" x 0.3" thick (5cm x 4cm x 0.8cm) aluminum plate

(2) Bridge mounted on PC Board with 0.5" sq. (12mm sq.) copper pads and bridge lead length of 0.375" (9.5mm)

(3) Bolt bridge on heat sink with #6 screw, using silicon thermal compound between bridge and mounting surface for maximum heat transfer.

3.01 0400



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### RATING & CHARACTERISTIC CURVES FOR SERIES SBU4A - SBU4M

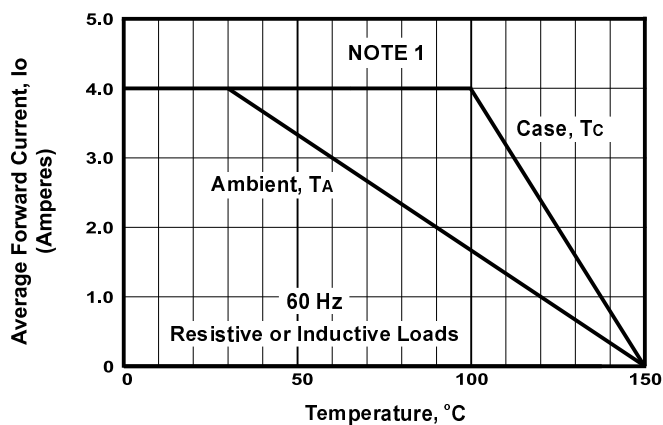


FIGURE 1. FORWARD CURRENT DERATING CURVE

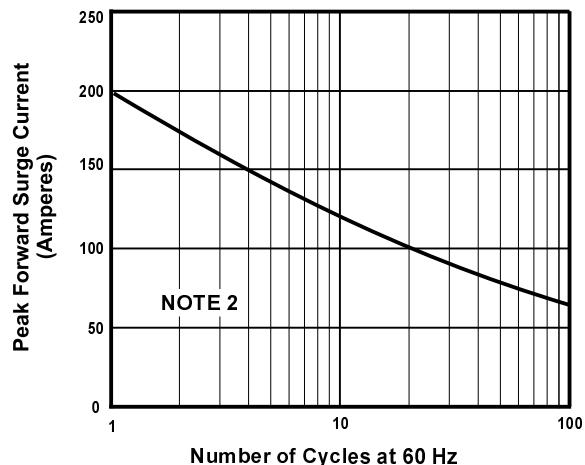


FIGURE 2. MAXIMUM NON-REPETITIVE SURGE CURRENT

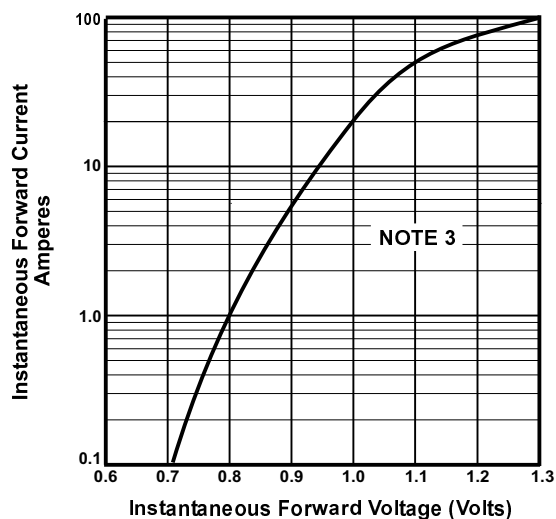


FIGURE 3. TYPICAL FORWARD CHARACTERISTIC PER DIODE

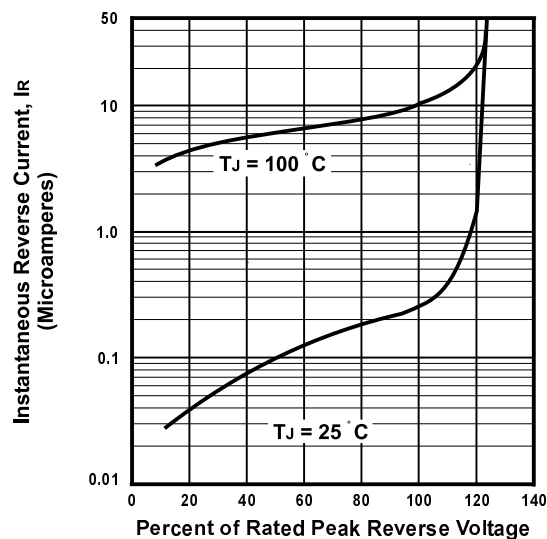


FIGURE 4. TYPICAL REVERSE CHARACTERISTICS

#### NOTES

- (1) Case Temperature,  $T_c$ . With Bridge Mounted on 2.0" x 1.6" x 0.3" Thick (5cm x 4cm x 0.8cm) Aluminum Plate  
Ambient Temperature,  $T_A$ . With Bridge Mounted on PC Board With 0.5" Sq. (12mm Sq.) Pads and Bridge Lead Length of 0.375" (9.5mm)
- (2)  $T_J = 150^\circ\text{C}$
- (3)  $T_J = 25^\circ\text{C}$ ; Pulse Width = 300 Sec; 1% Duty Cycle
- (4)  $T_J = 25^\circ\text{C}$ ;  $f = 1\text{ MHz}$ ;  $V_{sig} = 50\text{mVp-p}$

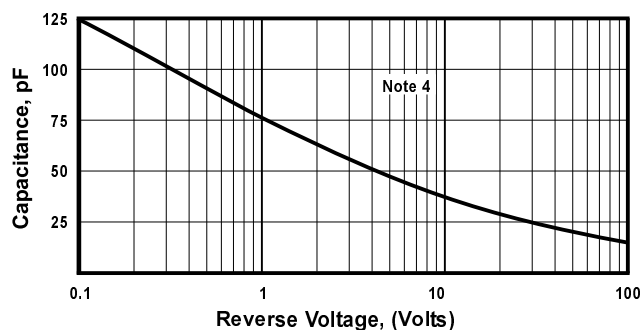


FIGURE 5. TYPICAL JUNCTION CAPACITANCE PER DIODE