

## 50 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**
- **INTEGRALLY MOLDED HEAT SINK PROVIDES VERY LOW THERMAL RESISTANCE FOR MAXIMUM HEAT DISSIPATION**
- **UL RECOGNIZED - FILE #E141956**

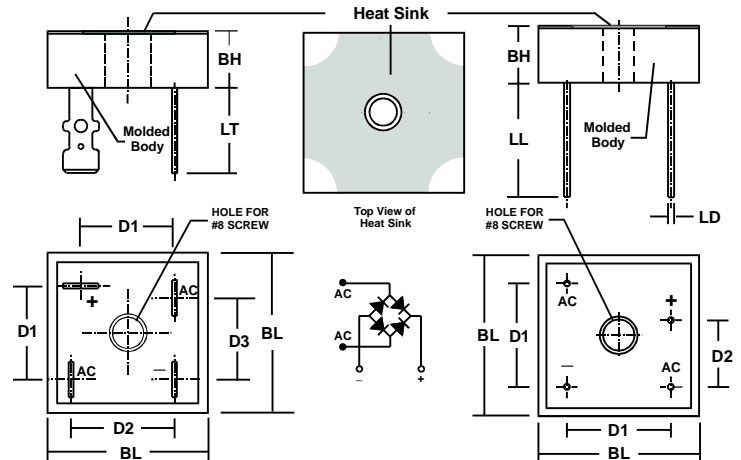
### MECHANICAL DATA

- **Case:** Molded plastic, U/L Flammability Rating 94V-0
- **Terminals:** Round silver plated copper pins or fast-on terminals
- **Soldering:** Per MIL-STD 202 Method 208 guaranteed
- **Polarity:** Marked on side of case
- **Mounting Position:** Any. Through hole for #8 screw.  
Max. mounting torque = 20 in-lb.
- **Weight:** Fast-on Terminals - 0.7 Ounces (20.0 Grams)  
Wire Leads - 0.55 Ounce (16.0 Grams)

### MECHANICAL SPECIFICATION

#### SERIES: DB5000P - DB5010P and ADB5004P - ADB5008P

Suffix "P" indicates molded PLASTIC with integrally mounted Heat Sink



| SYM | MILLIMETERS |      | INCHES |      |
|-----|-------------|------|--------|------|
|     | MIN         | MAX  | MIN    | MAX  |
| BL  | 28.4        | 28.7 | 1.12   | 1.13 |
| BH  | 9.6         | 10.2 | 0.38   | 0.40 |
| D1  | 15.7        | 16.7 | 0.62   | 0.66 |
| D2  | 17.5        | 18.5 | 0.69   | 0.73 |
| D3  | 13.5        | 14.5 | 0.53   | 0.57 |
| LT  | n/a         | 15.2 | n/a    | 0.6  |

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|-----|-------------|------|--------|-------|
|     | MIN         | MAX  | MIN    | MAX   |
| BL  | 28.4        | 28.7 | 1.12   | 1.13  |
| BH  | 9.6         | 10.2 | 0.38   | 0.40  |
| D1  | 17.5        | 18.5 | 0.69   | 0.73  |
| D2  | 10.9        | 11.9 | 0.43   | 0.47  |
| LL  | 20.6        | n/a  | 0.81   | n/a   |
| LD  | 1.0         | 1.1  | 0.039  | 0.042 |

Suffix "T" indicates FAST-ON TERMINALS

Suffix "W" indicates WIRE LEADS

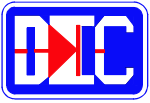
### MAXIMUM RATINGS & ELECTRICAL CHARACTERISTICS

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

| PARAMETER (TEST CONDITIONS)   | SYMBOL                            | RATINGS              |              |           |                          |          |          |              |          |          |          | UNITS              |
|---|-----------------------------------|----------------------|--------------|-----------|--------------------------|----------|----------|--------------|----------|----------|----------|--------------------|
|   |                                   | CONTROLLED AVALANCHE |              |           | NON-CONTROLLED AVALANCHE |          |          |              |          |          |          |                    |
|   |                                   | ADB 5004P            | ADB 5006P    | ADB 5008P | DB 5000P                 | DB 5001P | DB 5002P | DB 5004P     | DB 5006P | DB 5008P | DB 5010P |                    |
| Series Number   |                                   |                      |              |           |                          |          |          |              |          |          |          |                    |
| Maximum DC Blocking Voltage   | V <sub>RM</sub>                   |                      |              |           |                          |          |          |              |          |          |          | VOLTS              |
| Working Peak Reverse Voltage  | V <sub>RWM</sub>                  | 400                  | 600          | 800       | 50                       | 100      | 200      | 400          | 600      | 800      | 1000     |                    |
| Maximum Peak Recurrent Reverse Voltage  | V <sub>RRM</sub>                  |                      |              |           |                          |          |          |              |          |          |          |                    |
| RMS Reverse Voltage   | V <sub>R</sub> (RMS)              | 280                  | 420          | 560       | 35                       | 70       | 140      | 280          | 420      | 560      | 700      |                    |
| Minimum Avalanche Voltage   | V <sub>(BR)</sub> Min             | See Note 1           |              |           | n/a                      |          |          |              |          |          |          | VOLTS              |
| Maximum Avalanche Voltage   | V <sub>(BR)</sub> Max             | See Note 1           |              |           | n/a                      |          |          |              |          |          |          |                    |
| Forward Voltage Drop (Per Diode) at 25 Amps DC<br>Max. Typ.   | V <sub>FM</sub>                   | 1.00<br>0.95         | 1.05<br>1.00 |           | 1.00<br>0.95             |          |          | 1.05<br>1.00 |          |          |          |                    |
| Rating for Fusing (Non-repetitive; 1mS < t < 8.3mS)   | I <sup>2</sup> t                  | 1000                 |              |           |                          |          |          |              |          |          |          | A <sup>2</sup> SEC |
| Peak Forward Surge Current. Single 60Hz Half-Sine Wave Superimposed on Rated Load (JEDEC Method). T <sub>J</sub> = 175° C | I <sub>FSM</sub>                  | 600                  |              |           |                          |          |          |              |          |          |          | AMPS               |
| Average Forward Rectified Current @ T <sub>c</sub> = 55° C  | I <sub>o</sub>                    | 50                   |              |           |                          |          |          |              |          |          |          |                    |
| Junction Operating and Storage Temperature Range  | T <sub>J</sub> , T <sub>STG</sub> | -55 to +175          |              |           |                          |          |          |              |          |          |          | °C                 |
| Maximum Reverse Current at Rated V <sub>RM</sub><br>@ T <sub>A</sub> = 25° C<br>@ T <sub>A</sub> = 125° C                 | I <sub>RM</sub>                   | 1<br>50              |              |           |                          |          |          |              |          |          |          | µA                 |
| Minimum Insulation Breakdown Voltage (Circuit to Case)  | V <sub>ISO</sub>                  | 2500                 |              |           |                          |          |          |              |          |          |          | VOLTS              |
| Typical Thermal Resistance, Junction to Case  | R <sub>θJC</sub>                  | 1.10                 |              |           |                          |          |          |              |          |          |          | °C/W               |

Notes: (1) These Bridges Exhibit The Avalanche Characteristic at Breakdown. If Your Application Requires a Specific Breakdown Voltage Range, Please Contact Us.

3.01 5/06p



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RATING & CHARACTERISTIC CURVES FOR SERIES DB5000P - DB5010P and SERIES ADB5004P - ADB5008P

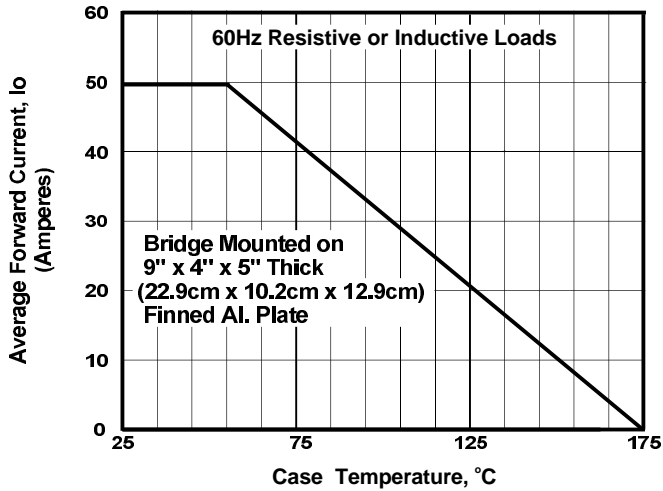


FIGURE 1. FORWARD CURRENT DERATING CURVE

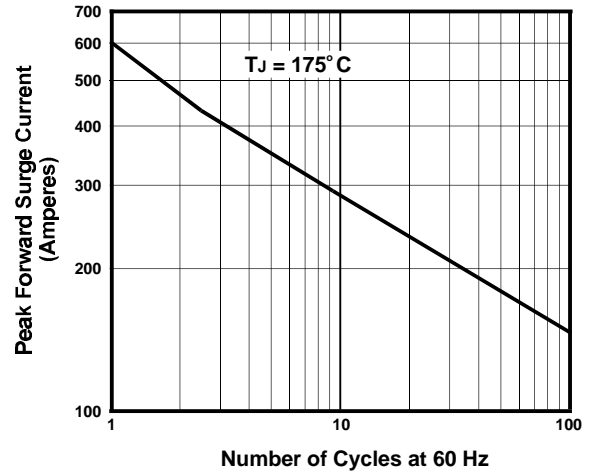


FIGURE 2. MAXIMUM NON-REPETITIVE SURGE CURRENT

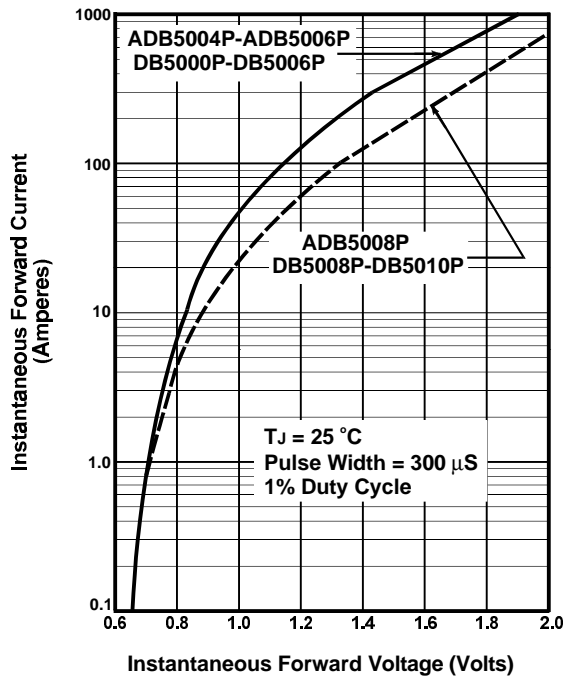


FIGURE 3. TYPICAL FORWARD CHARACTERISTIC PER DIODE

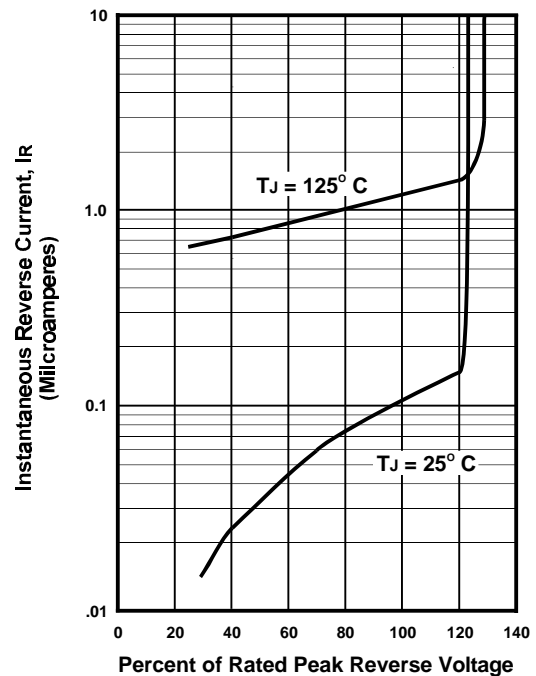


FIGURE 4. TYPICAL REVERSE CHARACTERISTICS