

## 50 AMP SILICON BRIDGE RECTIFIERS

### FEATURES

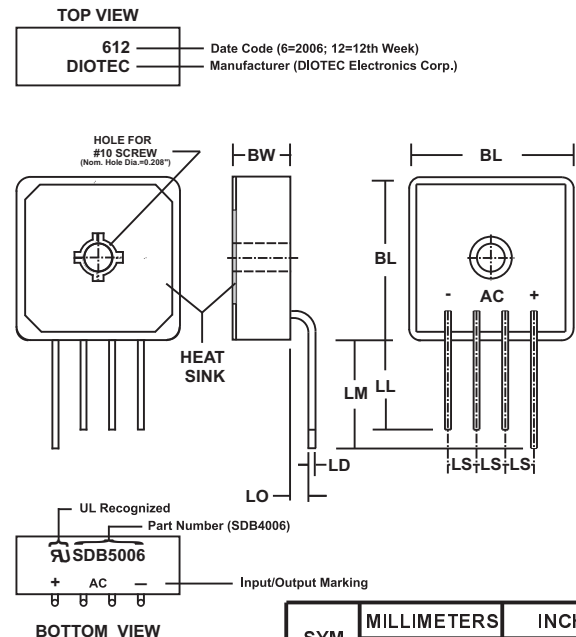
- VOID FREE VACUUM DIE SOLDERING FOR MAXIMUM MECHANICAL STRENGTH AND HEAT DISSIPATION (Solder Voids: Typical < 2%, Max. < 10% of Die Area)
- BUILT-IN STRESS RELIEF MECHANISM FOR SUPERIOR RELIABILITY AND PERFORMANCE
- INTEGRALLY MOLDED HEAT SINK PROVIDES VERY LOW THERMAL RESISTANCE FOR MAXIMUM HEAT TRANSFER
- SPACE SAVING IN-LINE DESIGN FOR PRINTED CIRCUIT BOARD APPLICATIONS
- **UL RECOGNIZED - FILE #E124962**
- **RoHS COMPLIANT**

### MECHANICAL DATA

- Case: Molded epoxy with integral heat sink Epoxy carries a U/L Flammability rating of 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 #10 screw. Max. mounting torque = 20 in-lb.
- Weight: 0.55 Ounces (16.0 Grams)

### MECHANICAL SPECIFICATION

#### SERIES: SDB5000 - SDB5010

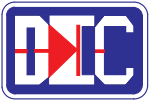


| SYM | MILLIMETERS |      | INCHES    |       |
|-----|-------------|------|-----------|-------|
|     | MIN         | MAX  | MIN       | MAX   |
| BL  | 28.4        | 28.7 | 1.12      | 1.13  |
| BW  | n/a         | 10.3 | n/a       | 0.405 |
| LD  | 1.27 Typ    |      | 0.050 Typ |       |
| LL  | 15.9        | n/a  | 0.625     | n/a   |
| LM  | 19.0        | n/a  | 0.750     | n/a   |
| LO  | 3.175 Nom   |      | 0.125 Nom |       |
| LS  | 5.08 Typ    |      | 0.200 Typ |       |

### 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 |       |
|---|------------------|--------------|----------|----------|----------|----------|----------|----------|--|-------|-------|
|   |                  | SDB 5000     | SDB 5001 | SDB 5002 | SDB 5004 | SDB 5006 | SDB 5008 | SDB 5010 |  |       |       |
| Series Number   |                  |              |          |          |          |          |          |          |  |       |       |
| 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 @ T <sub>c</sub> = 75° C  | I <sub>O</sub>   | 50           |          |          |          |          |          |          |  |       | AMPS  |
| Peak Forward Surge Current. Single 60Hz Half-Sine Wave Superimposed on Rated Load (JEDEC Method). T <sub>J</sub> = 125° C   | I <sub>FSM</sub> | 600          |          |          |          |          |          |          |  |       |       |
| Forward Voltage (Per Diode) at 25 Amps DC<br>Max. Typ.  | V <sub>FM</sub>  | 1.10<br>1.02 |          |          |          |          |          |          |  |       | VOLTS |
| Maximum Average DC Reverse Current<br>At Rated DC Blocking Voltage<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  |
| Junction Temperature Range  | T <sub>J</sub>   | -55 to +150  |          |          |          |          |          |          |  |       | °C    |
| Storage Temperature Range   | T <sub>STG</sub> | -55 to +150  |          |          |          |          |          |          |  |       |       |



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### RATING & CHARACTERISTIC CURVES FOR SERIES SDB5000 - SDB5010

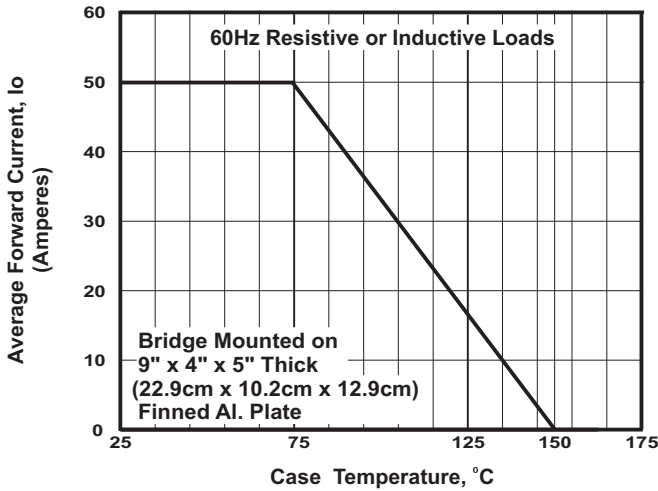


FIGURE 1. FORWARD CURRENT DERATING CURVE

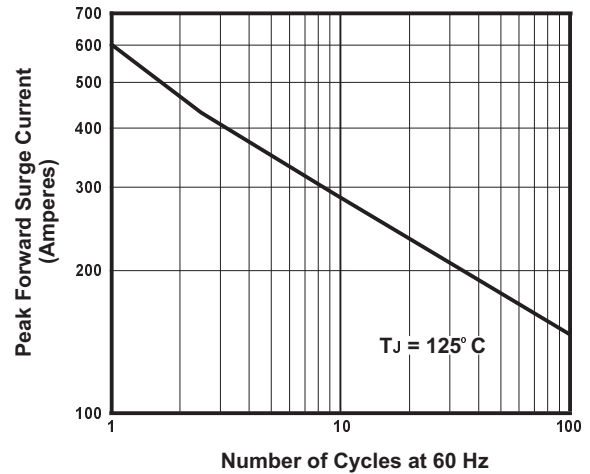


FIGURE 2. MAXIMUM NON-REPETITIVE SURGE CURRENT

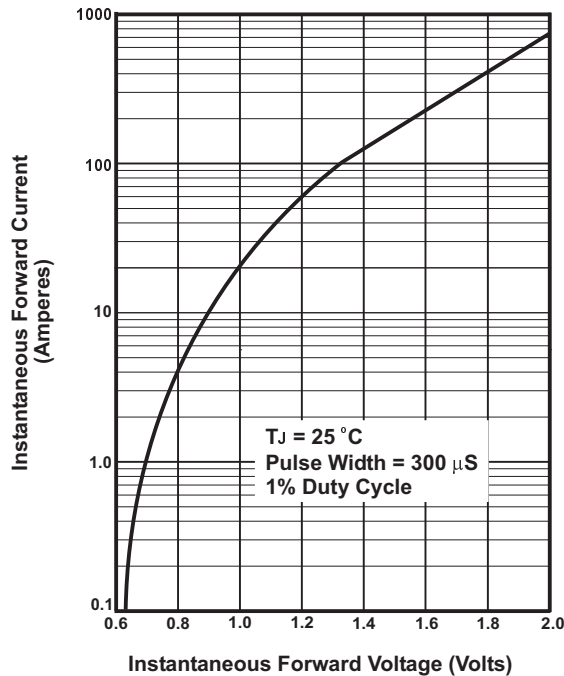


FIGURE 3. TYPICAL FORWARD CHARACTERISTIC PER DIODE

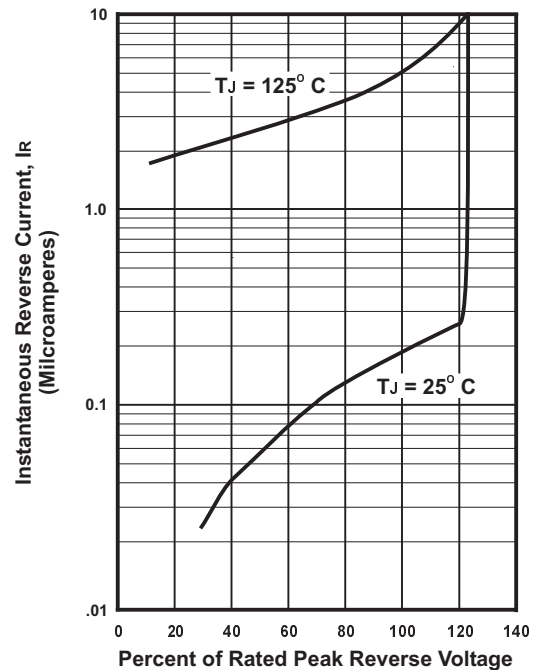


FIGURE 4. TYPICAL REVERSE CHARACTERISTICS