

10 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 400 AMPS PEAK**
- **UL RECOGNIZED - FILE #E124962**
- **RoHS COMPLIANT**

MECHANICAL DATA

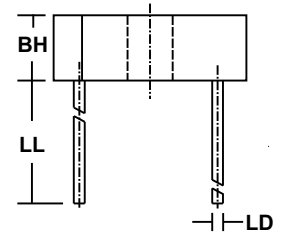
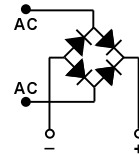
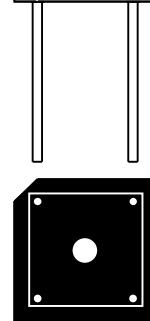
- **Case: Molded Epoxy (UL Flammability Rating 94V-0)**
- **Terminals: Round silver plated copper pins**
- **Soldering: Per MIL-STD 202 Method 208 guaranteed**
- **Polarity: Marked on side of case; positive lead at beveled corner**
- **Mounting Position: Any. Through hole provided for #6 screw**
- **Weight: 0.18 Ounces (5.4 Grams)**

MECHANICAL SPECIFICATION

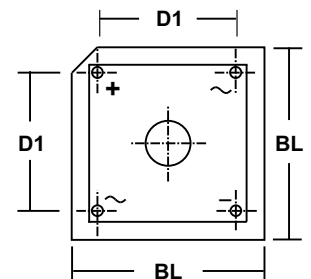
ACTUAL SIZE

DT
DB1004

SERIES DB1000-DB1010 and ADB1004-ADB1008



| SYM | MILLIMETERS | | INCHES | |
|-----|-------------|------|--------|-------|
| | MIN | MAX | MIN | MAX |
| BL | 18.5 | 19.6 | 0.73 | 0.77 |
| BH | 6.4 | 7.6 | 0.25 | 0.3 |
| D1 | 12.2 | 13.2 | 0.48 | 0.52 |
| LL | 22.2 | n/a | 0.875 | n/a |
| LD | 1.2 | 1.3 | 0.048 | 0.052 |



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 1004 | ADB 1006 | ADB 1008 | DB 1000 | DB 1001 | DB 1002 | DB 1004 | DB 1006 | DB 1008 | DB 1010 | |
| Series Number | | | | | | | | | | | | |
| Maximum DC Blocking Voltage | V _{RM} | | | | | | | | | | | VOLTS |
| Working Peak Reverse Voltage | V _{RWM} | 400 | 600 | 800 | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | |
| Maximum Peak Recurrent Reverse Voltage | V _{R(RM)} | | | | | | | | | | | |
| RMS Reverse Voltage | V _{R(RMS)} | 280 | 420 | 560 | 35 | 70 | 140 | 280 | 420 | 560 | 700 | |
| Power Dissipation in V_(BR) Region for 100 μS Square Wave | P _{RM} | 500 | | | n/a | | | | | | | WATTS |
| Continuous Power Dissipation in V_(BR) Region @ T_{HS}=80° C (Heat Sink Temp) | P _R | 2 | | | n/a | | | | | | | |
| Thermal Energy (Rating for Fusing) | I ² t | 64 | | | | | | | | | | AMPS ² SEC |
| Peak Forward Surge Current. Single 60Hz Half-Sine Wave Superimposed on Rated Load (JEDEC Method). T_J = 150° C | I _{FSM} | 400 | | | | | | | | | | AMPS |
| Average Forward Rectified Current @ T_C = 50° C (Notes 1, 3) @ T_A = 50° C (Note 2) | I _O | 10 8 | | | | | | | | | | |
| Junction Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | | | | | | | | | | °C |
| Minimum Avalanche Voltage | V _{(BR) Min} | See Note 4 | | | n/a | | | | | | | VOLTS |
| Maximum Avalanche Voltage | V _{(BR) Max} | See Note 4 | | | n/a | | | | | | | |
| Maximum Forward Voltage (Per Diode) at 5 Amps DC | V _{FM} | 0.95 (Typ. 0.90) | | | | | | | | | | |
| Maximum Reverse Current at Rated V_{RM} @ T_A = 25° C @ T_A = 100° C | I _{RM} | 1 50 | | | | | | | | | | μA |
| Minimum Insulation Breakdown Voltage (Circuit to Case) | V _{ISO} | 2000 | | | | | | | | | | VOLTS |
| Typical Thermal Resistance Junction to Ambient (Note 2) Junction to Case (Note 1) | R _{θJA} R _{θJC} | 12 5 | | | | | | | | | | °C/W |

NOTES: (1) Bridge mounted on 5.1" x 4.3" x 0.11" thick (12.9cm x 10.8cm x 0.3cm) 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.
 (4) These bridges exhibit the avalanche characteristic at breakdown. If your application requires a specific breakdown voltage range, please contact us.

3.01 1008



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RATING & CHARACTERISTIC CURVES FOR SERIES DB1000 - DB1010 and SERIES ADB1004 - ADB1008

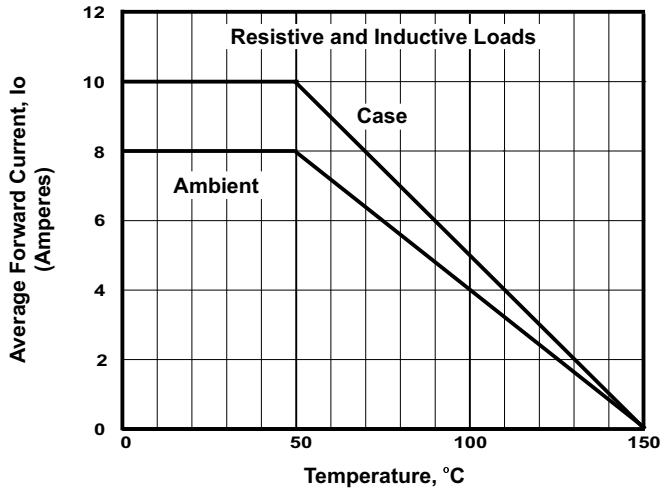


FIGURE 1. FORWARD CURRENT DERATING CURVE

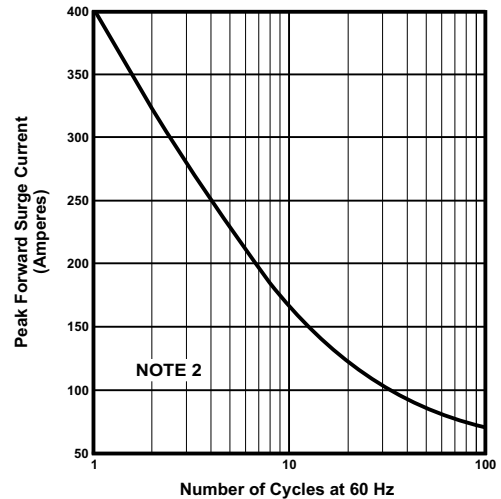


FIGURE 2. MAXIMUM NON-REPETITIVE SURGE CURRENT

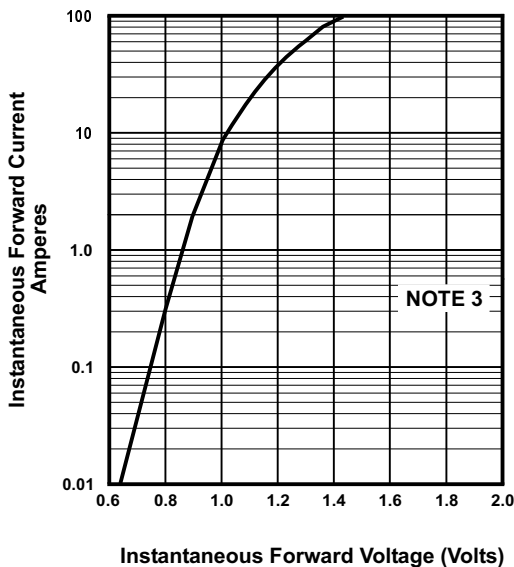


FIGURE 3. TYPICAL FORWARD CHARACTERISTIC PER DIODE

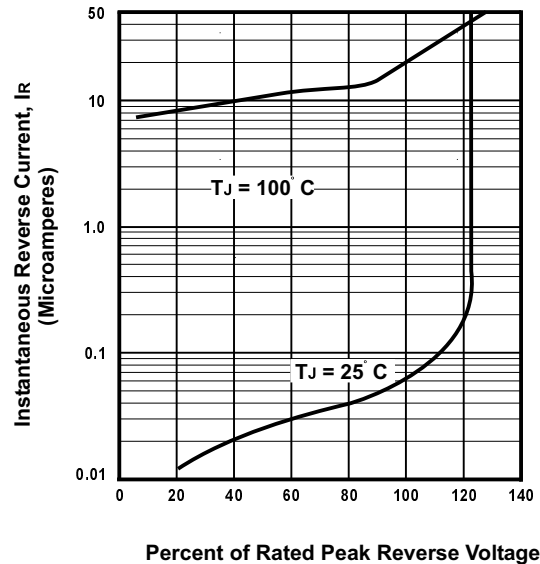


FIGURE 4. TYPICAL REVERSE CHARACTERISTICS

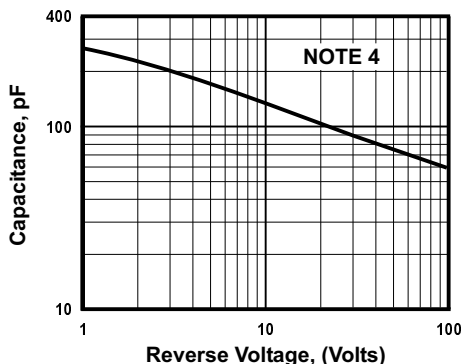


FIGURE 5. TYPICAL JUNCTION CAPACITANCE PER DIODE

NOTES

(1) Case Temperature, T_c . With Bridge Mounted on 5.1" x 4.3" x 0.11" Thick (12.9cm x 10.8cm x 0.3cm) Aluminum Plate

Ambient Temperature, T_A . With Bridge Mounted on PC Board With 0.5" Sq. (12mm Sq.) Copper 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) $T_J = 25^\circ\text{C}$; $f = 1\text{ MHz}$; $V_{sig} = 50\text{mVp-p}$