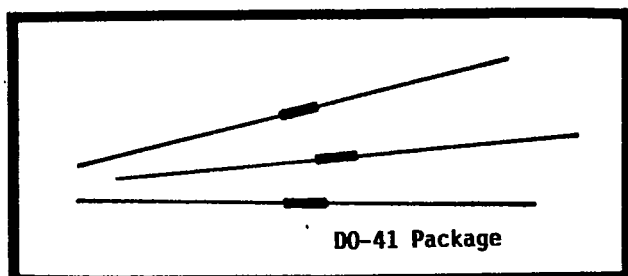


# BILATERAL TRIGGER DIACS



## FEATURES:

- \* Wide Voltage Range - 27 to 70 Volts  $V_{(BO)}$
- \* JEDEC DO-41 Package
- \* Pre-tinned leads

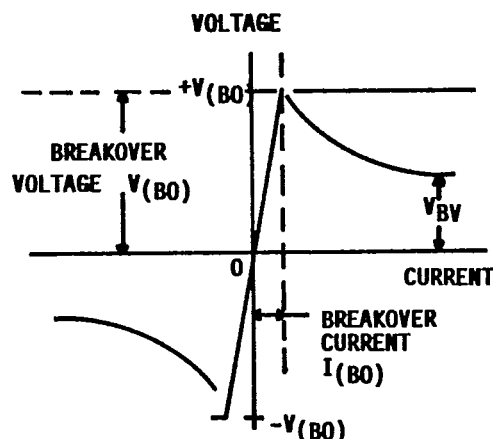
## GENERAL DESCRIPTION:

The diac semiconductor is a full-wave or bi-directional thyristor. It is triggered from a blocking-to-conduction state for either polarity of applied voltage whenever the amplitude of applied voltage exceeds the breakover voltage rating of the diac.

Specifically designed as low-cost bidirectional triggers for line operated triac control circuits such as light dimmers, motor controls and process controls.

The diac specifications listed in this data sheet are for standard products. The suffix "T" signifies tape and reel packing, i.e., D32T.

## V-1 CHARACTERISTICS



## BILATERAL TRIGGER DIAC SPECIFICATIONS

- \* Maximum Ratings, Absolute-Maximum Values  
Maximum Trigger Firing Capacitance.....0.1 $\mu$ F  
Device Dissipation  
(at  $T_A = -40^\circ\text{C}$  to  $+40^\circ\text{C}$ ).....250mW  
Derate Above  $+40^\circ\text{C}$ .....3.6mW/ $^\circ\text{C}$
- \* Temperature Ranges  
Storage..... $-40^\circ$  to  $+125^\circ\text{C}$   
Operating (Junction)..... $-40^\circ$  to  $+110^\circ\text{C}$
- \* Thermal Resistance  
Junction to Ambient ( $R_{\theta JA}$ )=278 $^\circ\text{C}/\text{W}$   
Junction to Lead ( $R_{\theta JL}$ )=100 $^\circ\text{C}/\text{W}$  based on maximum lead temperature of  $85^\circ\text{C}$  @ <250mW.

## ELECTRICAL CHARACTERISTICS ( $T_C = 25^\circ\text{C}$ )

| Part Number | Breakover Voltage (Forward and Reverse) |      | Breakover Voltage Symmetry $\Delta V_{(BO)} = \left  +V_{(BO)} \right  - \left  -V_{(BO)} \right $ | Dynamic Breakback Voltage $\left  \Delta V_- \right ^{**}$ | Peak Breakover Current at Breakover Voltage $I_{(BO)} \mu\text{A}$ | Peak Pulse Current For 10 $\mu\text{s}$ 120 PPS $T_A \leq 40^\circ\text{C}$ $I_{TRM}$ |
|-------------|-----------------------------------------|------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|             | Min.                                    | Max. | Volts Max.                                                                                         | Volts Min.                                                 | Max.                                                               | Amps Max.                                                                             |
| D-32        | 27                                      | 37   | 3*                                                                                                 | 5                                                          | 50                                                                 | 2.0                                                                                   |
| D-35        | 30                                      | 40   | 3*                                                                                                 | 5                                                          | 50                                                                 | 2.0                                                                                   |
| D-40        | 35                                      | 45   | 3*                                                                                                 | 5                                                          | 50                                                                 | 2.0                                                                                   |
| D-50        | 42                                      | 58   | 4                                                                                                  | 8                                                          | 50                                                                 | 1.7                                                                                   |
| D-60        | 56                                      | 70   | 4                                                                                                  | 10                                                         | 50                                                                 | 1.5                                                                                   |

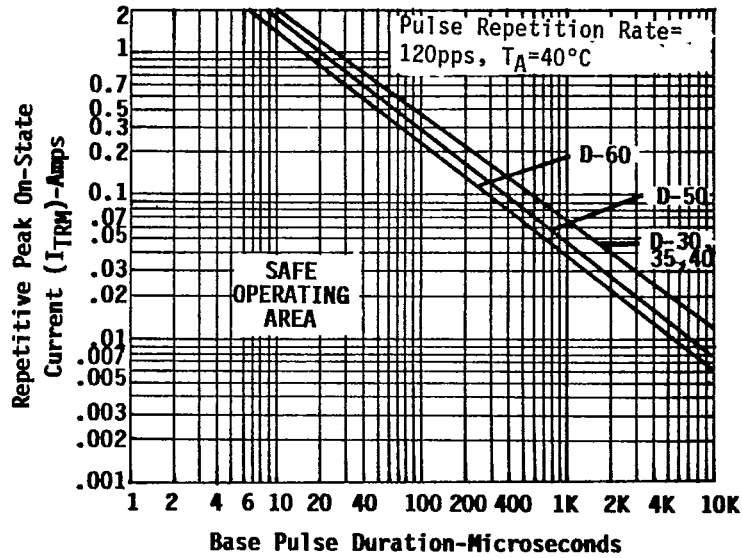
\* Breakover Voltage symmetry as close as 0.5 Volt is available from factory on these products.

\*\* See Figures 3 and 4 for Test Circuit and Waveforms.

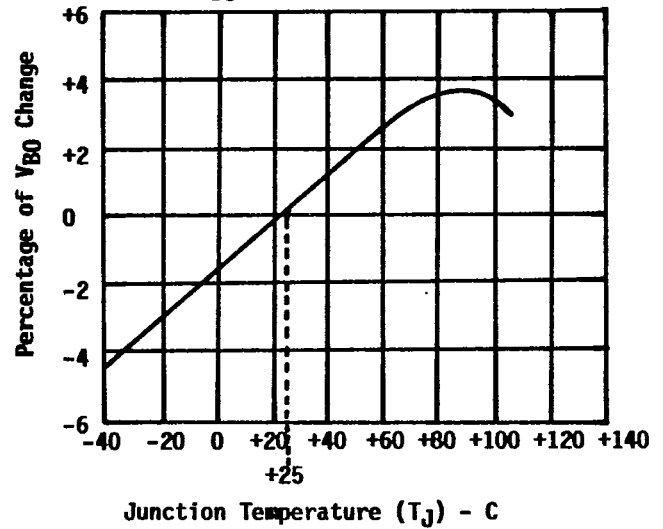
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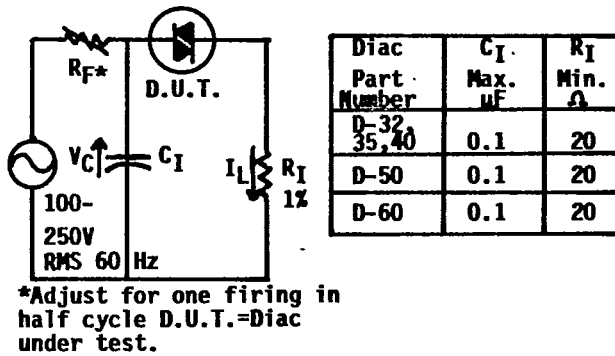
**Figure 1:**  
Repetitive Peak On-State  
Current vs Pulse Duration



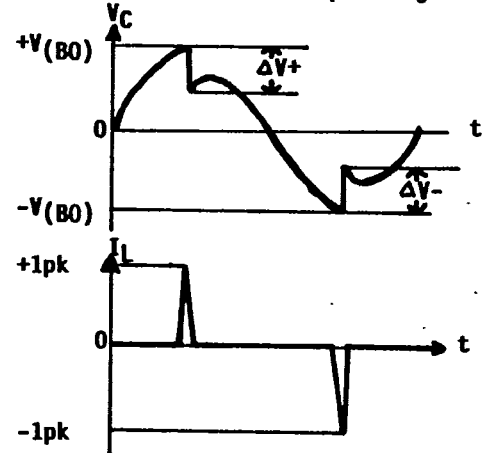
**Figure 2:**  
Normalized  $V_{BO}$  Change vs Junction Temperature



**Figure 3:**  
Circuit Used to Measure Diac Characteristics



**Figure 4:**  
Test Circuit Waveforms (See Figure 3)



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