

# LLDB3 / LLDB4

## Bidirectional Diac

### Features

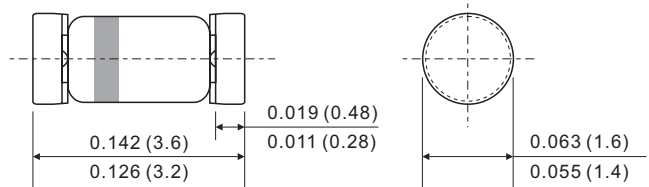
The three layer, two terminal, axial lead, hermetically sealed diacs are designed specifically for triggering thyristors. They demonstrate low breakover current at breakover voltage as they withstand peak pulse current, The breakover symmetry is within three volts (DB3,DB4). These diacs are intended for use in thyristors phase control , circuits for lamp dimming,universal motor speed control ,and heat control.

### Mechanical Data

Case: MiniMELF Glass Case (SOD-80)  
 Polarity: Color band denotes cathode end  
 Mounting Position: Any  
 Weight: approx. 0.002 ounce, 0.05grams

### Glass Case MiniMELF

Dimensions in inches and (mm)



### Absolute Maximum Ratings $T_{amb} = 25^{\circ}C$ unless otherwise specified

Parameter	Test Condition	Symbol	Value	Unit
Repetitive peak on-state current	$t_p = 20 \mu s, f = 120Hz$	$I_{TRM}$	2	A
Power dissipation	$I = 4 \text{ mm}, T_L \leq 25^{\circ}C$	$P_{tot}$	150	mW
Junction temperature		$T_j$	125	$^{\circ}C$
Storage temperature		$T_{stg}$	- 40 ~ 125	$^{\circ}C$

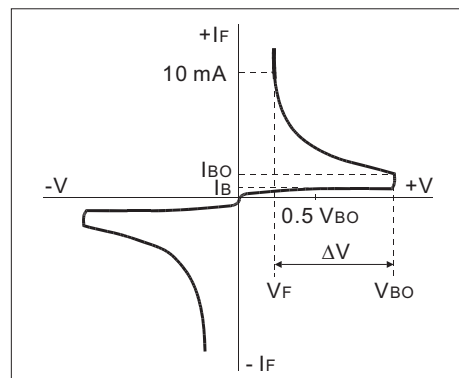
### Electrical Characteristics $T_{amb} = 25^{\circ}C$ unless otherwise specified

Parameter	Test Condition	Part	Symbol	Min	Typ.	Max	Unit
Breakover voltage *	$C = 22 \text{ nF}^{**}$	LLDB3	$V_{BO}$	28	32	36	V
		LLDB4	$V_{BO}$	35	40	45	V
Breakover voltage symmetry	$C = 22 \text{ nF}^{**}$		$ V_{BO1} - V_{BO2} $	—	—	3	V
Dynamic breakover voltage *	$V_{BO}$ and $V_F @ 10 \text{ mA}$		$\Delta V$	5	—	—	V
Output voltage *	See diagram 3 ( $R=20\Omega$ )		$V_o$	5	—	—	V
Breakover current *	$C = 22 \text{ nF}^{**}$		$I_{BO}$	—	—	100	$\mu A$
Rise time *	See diagram 2		$t_r$	—	—	2	$\mu s$
Leakage current *	$V_R = 0.5 V_{BO} \text{ max}$		$I_R$	—	—	10	$\mu A$
Peak current *	See diagram 3 (Gate)		$I_p$	0.30	—	—	A

\* Applicable to both forward and reverse directions. \*\* Connected in parallel to the device.

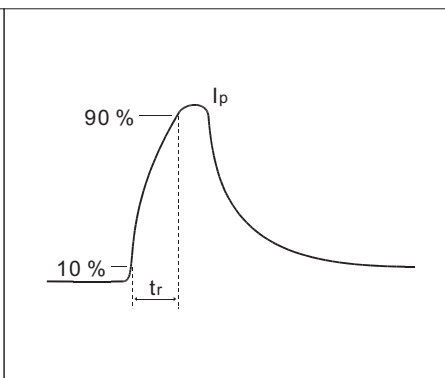
**Diagram 1:**

Voltage -current characteristic curve



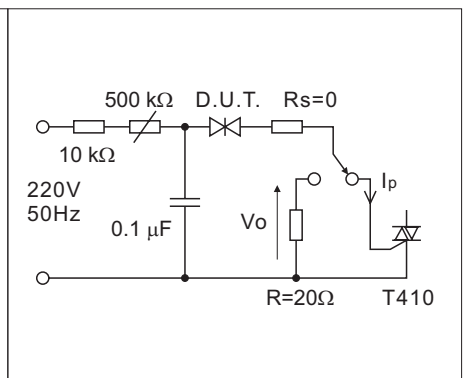
**Diagram 2:**

Rise time measurement



**Diagram 3:**

Test circuit

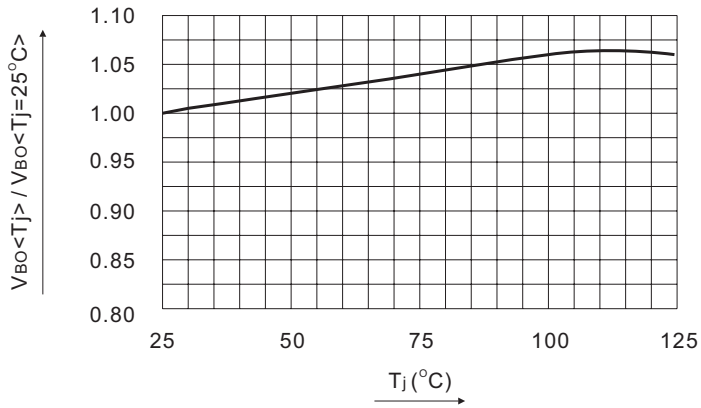


# LLDB3 / LLDB4

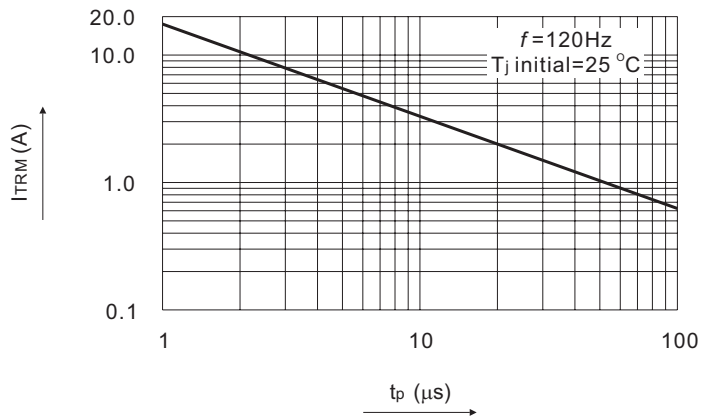
## Bidirectional Diac

**Ratings and Characteristic Curves**  $T_{amb} = 25^{\circ}\text{C}$  unless otherwise specified

Relative variation of  $V_{BO}$  versus junction temperature (typical values).



Repetitive peak pulse current versus pulse duration (maximum values).



Time duration while current pulse is higher 50mA versus C and  $R_s$  (typical values).

