

Bidirectional Diac

Features

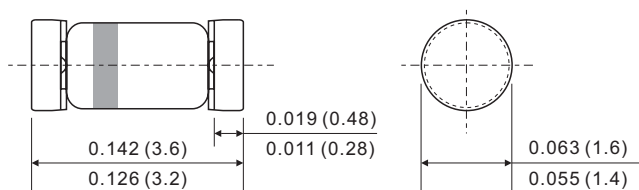
The three layer, two terminal, axial lead, hermetically sealed diacs are designed specifically for triggering thyristors. They demonstrate low breakover current at breakover voltage as they withstand peak pulse current. The breakover symmetry is within three volts (DB3,DB4). These diacs are intended 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

$T_{amb} = 25^{\circ}\text{C}$ unless otherwise specified

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

Electrical Characteristics

$T_{amb} = 25^{\circ}\text{C}$ 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 mA		ΔV	5	—	—	V
Output voltage *	See diagram 3 ($R=20\Omega$)		V_O	5	—	—	V
Breakover current *	$C = 22 \text{ nF}$ **		I_{BO}	—	—	100	μA
Rise time *	See diagram 2		t_r	—	—	2	μs
Leakage current *	$V_R = 0.5 V_{BO}$ max		I_R	—	—	10	μA
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

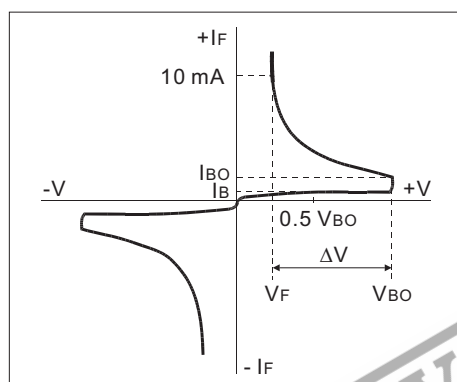


Diagram 2:

Rise time measurement

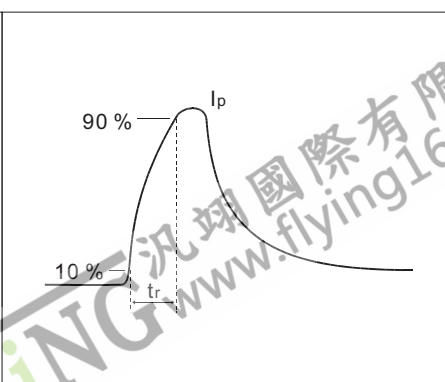
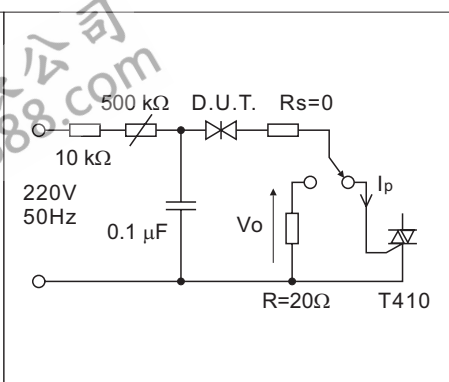
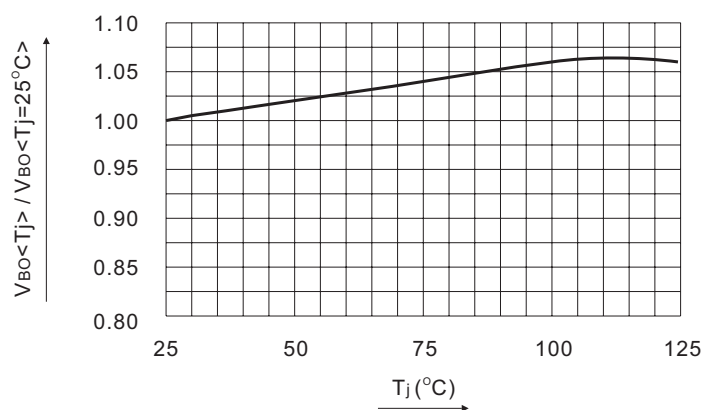


Diagram 3:

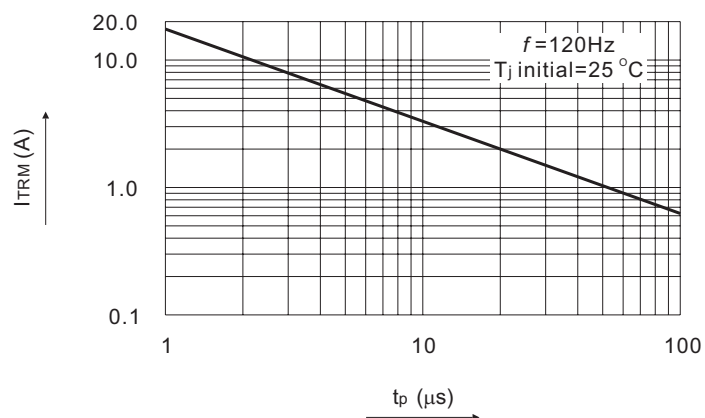
Test circuit



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).

