

DB3 Silicon Bidirectional Trigger Diodes

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: DO-35 Glass Case

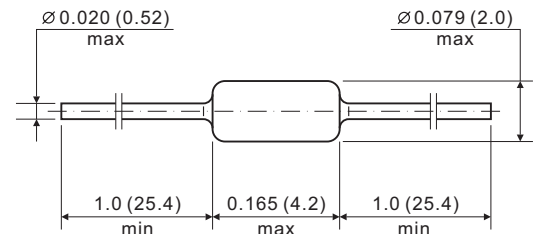
Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026

Mounting Position: Any

Weight: approx. 0.005 ounce, 0.14grams

Standard Glass Case JEDEC DO-35

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	$l = 4 \text{ mm}, T_L \leq 25^{\circ}\text{C}$	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 *	$C = 22 \text{ nF}^{**}$	DB3	V_{BO}	28	32	36	V
Breakover voltage symmetry	$C = 22 \text{ nF}^{**}$		$ V_{BO1}-V_{BO2} $	—	—	3	V
Dynamic breakover voltage *	V_{BO} and $V_F @ 10 \text{ mA}$		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 *	$V_R = 0.5 V_{BO} \text{ max}$		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

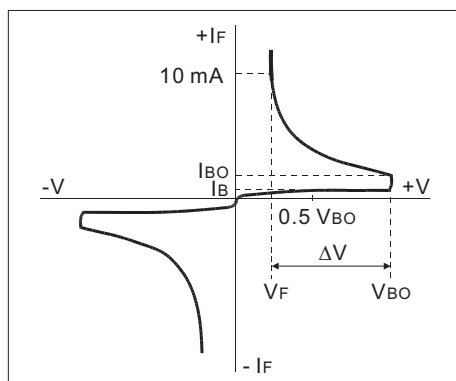


Diagram 2:

Rise time measurement

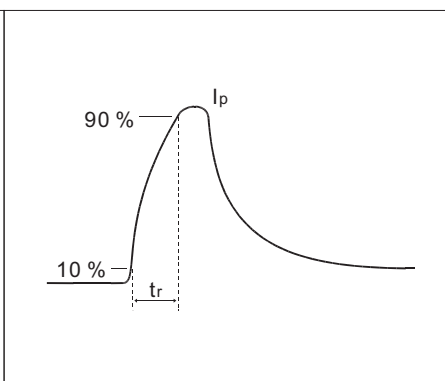
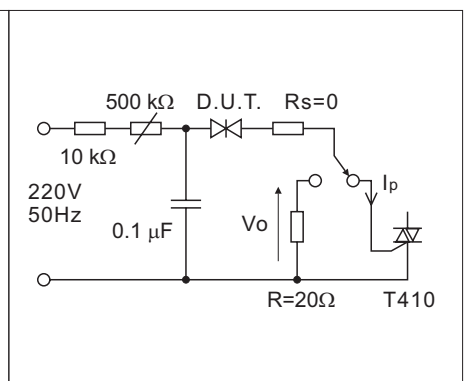


Diagram 3:

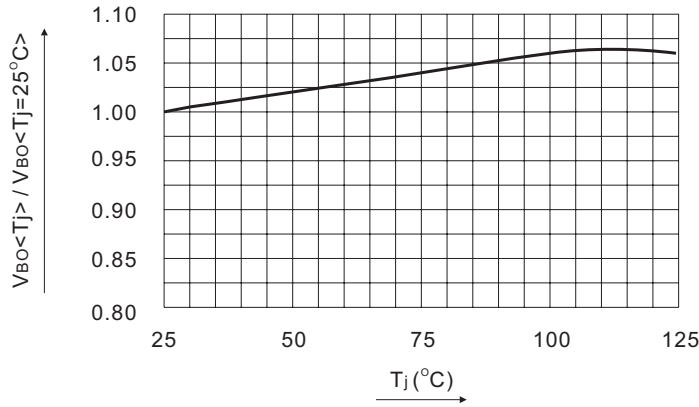
Test circuit



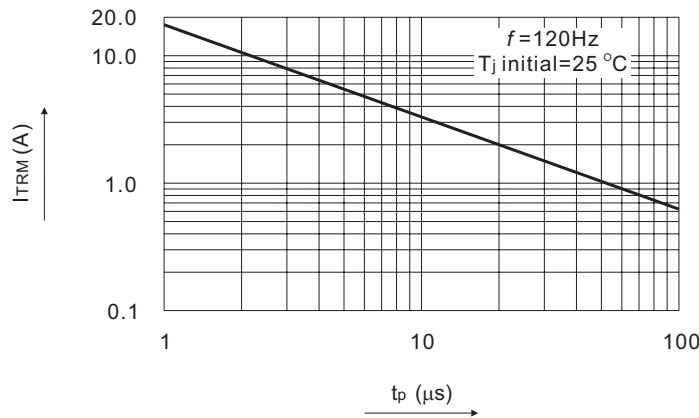
DB3 Silicon Bidirectional Trigger Diodes

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).

