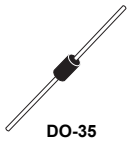
DB3TG

Datasheet

Diac in DO-35 with tight V_{BO}



DO-35

Features

- V_{BO}: 32 V
- Low breakover current: 15 µA max.
- Breakover voltage range: 30 to 34 V

Applications

- Triggering device for Triac or SCR based motor / light dimmer
- 32 V trigger device for oscillator circuit
- Start up triggering in lighting ballast for CFL, TL or LED lamps

Description

Functioning as a trigger diode with a fixed voltage reference, the DB3TG can be used in conjunction with Triacs for simplified gate control circuits or as a starting element in fluorescent lamp ballasts.

Product status link
DB3TG

Product summary	
Part number	**V_{BO}**
DB3TG	30 - 34 V

1 Characteristics

Table 1. Absolute maximum ratings (limiting values), T_j = 25 °C unless otherwise specified

Symbol	Parameter	Value	Unit
I_{TRM}	Repetitive peak on-state current, t_p = 20 µs, F = 120 Hz	2.00	A
T_{stg}	Storage junction temperature range	-40 to +125	°C
T_j	Operating junction temperature range	-40 to +125	°C

Table 2. Electrical characteristics (T_j = 25 °C unless otherwise specified)

Symbol	Parameter	Test conditions		Value	Unit
V_{BO}	Breakover voltage (1)	C = 10 nF (2)	Min.	30	V
			Typ.	32	
			Max.	34	
I V_{BO1} - V_{BO2} I	Breakover voltage symmetry	C = 10 nF (2)	Max.	2	V
Δ V	Dynamic breakover voltage (1)	V_{BO} and V_F at 10 mA	Min.	9	V
V_O	Output voltage (1)	See Figure 2. Test circuit, (R = 20 Ω)	Min.	5	V
I_{BO}	Breakover current (1)	C = 10 nF (2)	Max.	15	µA
t_r	Rise time (1)	See Figure 3. Rise time measurement	Max.	2	µs
I_R	Leakage current (1)	V_R = 0.5 x V_{BO} max	Max.	10	µA
I_P	Peak current (1)	See Figure 2. Test circuit	Min.	0.30	A

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

Figure 1. **Voltage - current characteristic curve.**

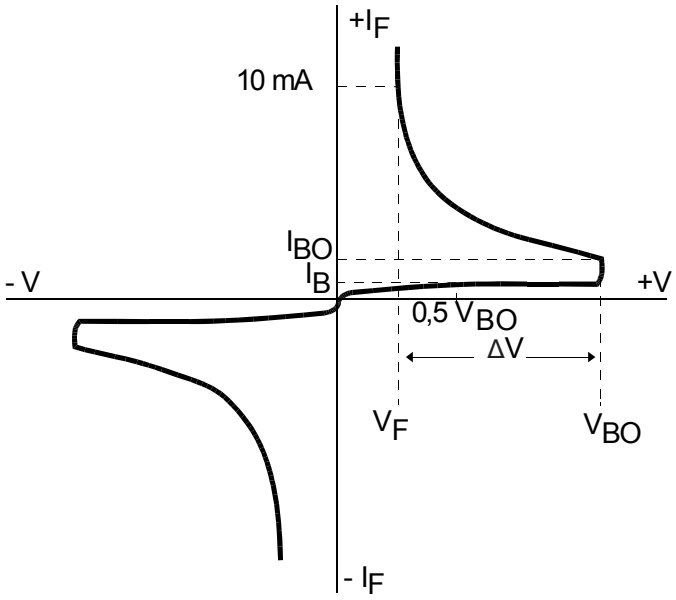


Figure 2. **Test circuit**

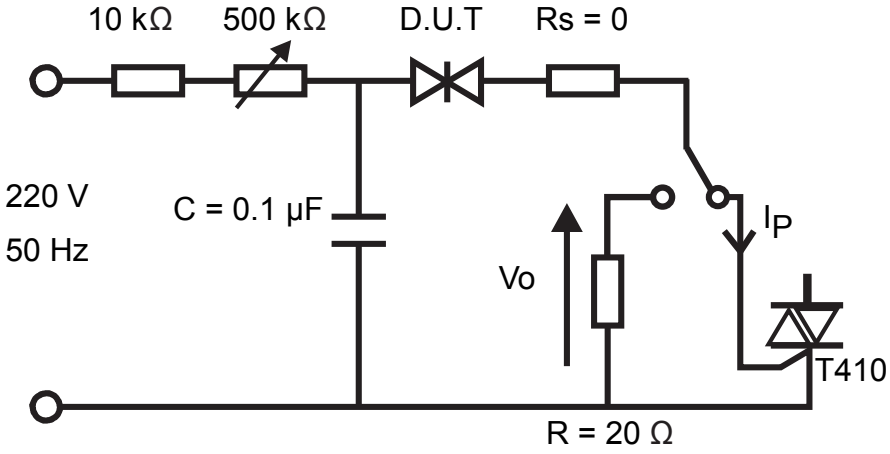
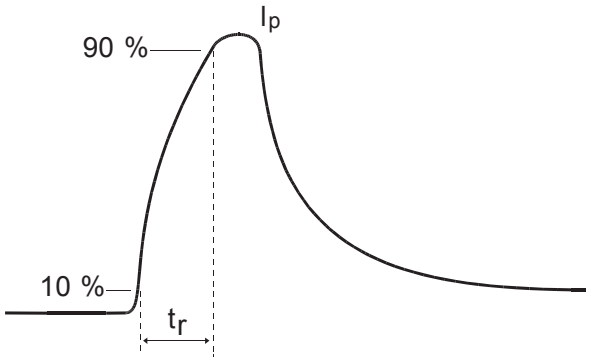


Figure 3. **Rise time measurement**



1.1 Characteristics (curves)

Figure 4. Relative variation of V_{BO} versus junction temperature (typical values)

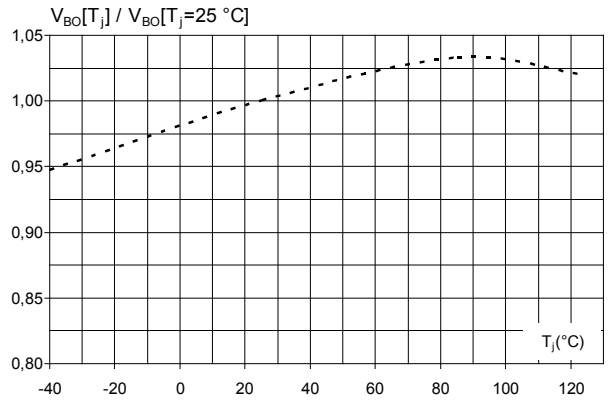


Figure 5. Peak on-state current versus Triac gate current pulse duration t_p

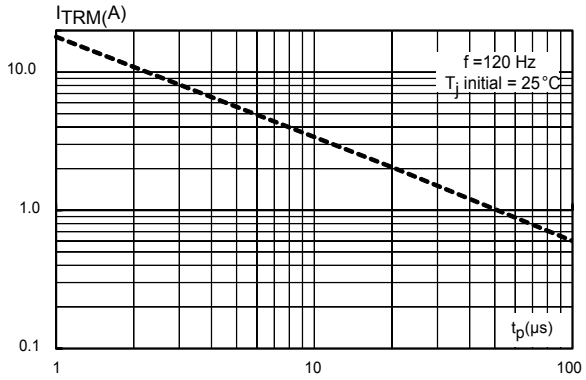
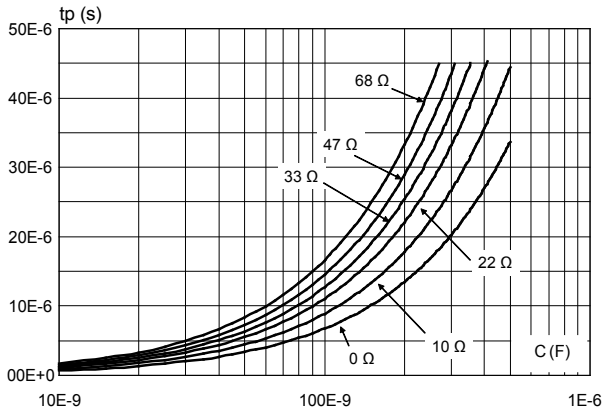


Figure 6. Triac gate current pulse duration t_p (to have I_P > 50 mA) versus Rs and C values (typical values)



Note: according to Figure 2. Test circuit

2 Package information

In order to meet environmental requirements, ST offers these devices in different grades of ECOPACK packages, depending on their level of environmental compliance. ECOPACK specifications, grade definitions and product status are available at: www.st.com. ECOPACK is an ST trademark.

2.1 DO-35 package information

Figure 7. DO-35 package outline

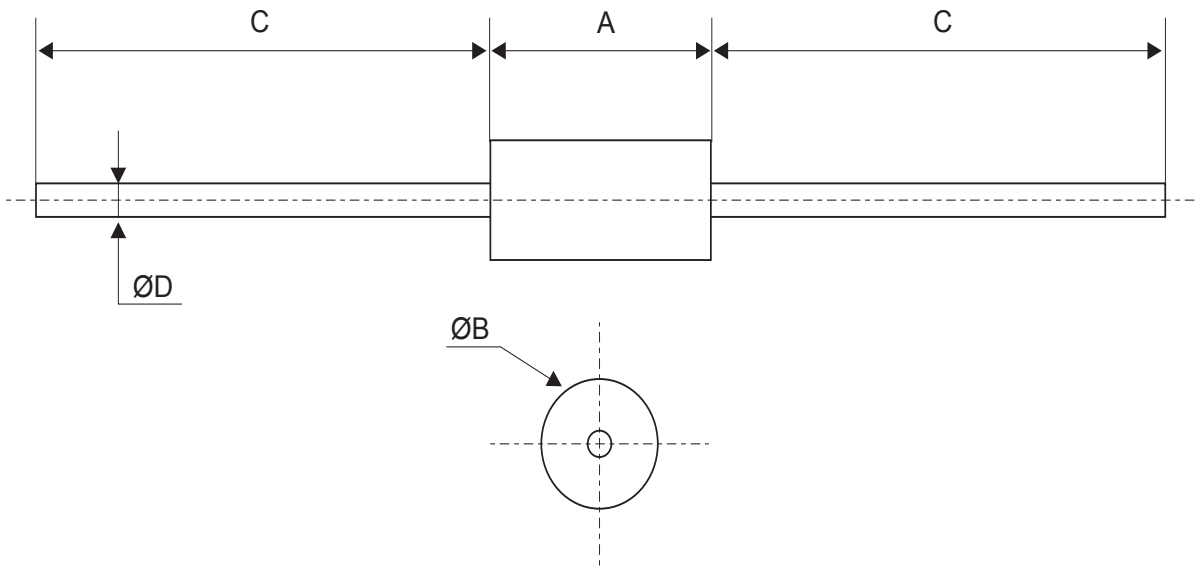


Table 3. DO-35 package mechanical data

Ref.	Dimensions			
	Millimeters		Inches[1]	
	Min.	Max.	Min.	Max.
A	3.05	4.50	0.120	0.177
B	1.53	2	0.060	0.079
C	28	31	1.102	1.220
D	0.46	0.55	0.018	0.022

1. *Inches given for reference only*

3 Ordering information

Figure 8. **Ordering information scheme**

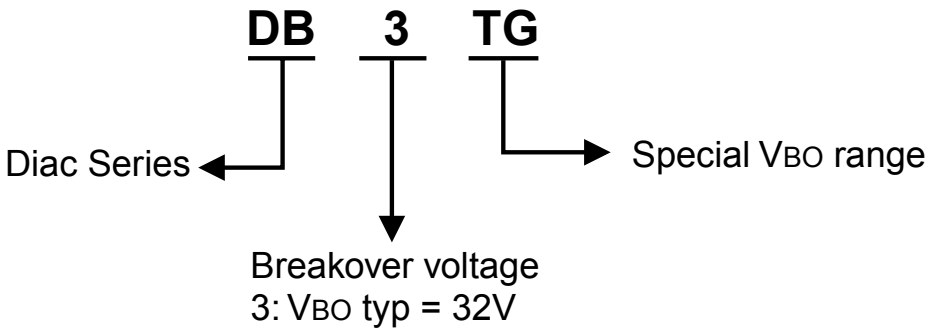


Table 4. **Ordering information**

Order code	Marking	Package	Weight	Base qty.	Delivery mode
DB3TG	DB3TG (Blue Body Coat)	DO-35	0.15 g	5000	Tape and reel

Revision history

Table 5. **Document revision history**

Date	Version	Changes
Oct-2001	2	Previous release.
07-May-2019	3	Updated Section 1.1 Characteristics (curves).