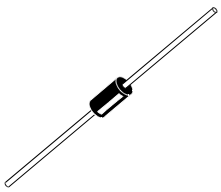
DB3G1

DIAC

Datasheet - production data



DO-35

Features

- V_{BO}: 32 V
- Breakover current: 15 µA max
- Breakover voltage range: 30 to 34 V
- High V_{BO} voltages symmetry: 1 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

Operating as a voltage threshold trigger device, the DB3G1 diac is designed with triac or SCR thyristor to perform a light dimmer or a universal motor controller for kitchen tools or power tools.

This bidirectional triggering device offers a 1V break-over voltage symmetry to avoid any residual DC output voltage in inductive load applications.

Table 1. Device summary

Order code	Marking	Package	Packing
DB3G1	DB3G1 (blue body coat)	DO-35	Tape and reel
DB3G1V	DB3G1 (blue body coat)	DO-35	Bulk

1 Maximum ratings

Table 2. Absolute maximum ratings (limiting values)

Symbol	Parameter	Value	Unit
I_{TRM}	Repetitive peak on-state current t_p= 20 µs; F= 120 Hz	2	A
T_{stg}	Storage temperature range	-40 to + 125	°C
T_J	Operating junction temperature range		

2 Electrical characteristics

Table 3. Electrical characteristics (T_J = 25 °C unless otherwise specified)

Symbol	Parameter	Test conditions		Value	Unit
V_{BO}	Breakover voltage (1)	C= 22 nF(2)	Min.	30	V
			Typ.	32	
			Max.	34	
$\lvert V_{BO1} - V_{BO2} \rvert$	Breakover voltage symmetry	C= 22 nF(2)	Max.	1	V
ΔV	Dynamic breakover voltage(1)	V_{BO} and V_F at 10 mA	Min.	9	V
V_O	Output voltage(1)	R= 20 Ω See *Figure 2*	Min.	5	V
I_{BO}	Breakover current(1)	C= 22 nF(2)	Max.	15	µA
t_r	Rise time(1)	See *Figure 3*	Max.	2	µs
I_R	Leakage current(1)	V_R = 0.5 x V_{BO} max.	Max.	10	µA

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

Figure 1. Voltage - current characteristic curve

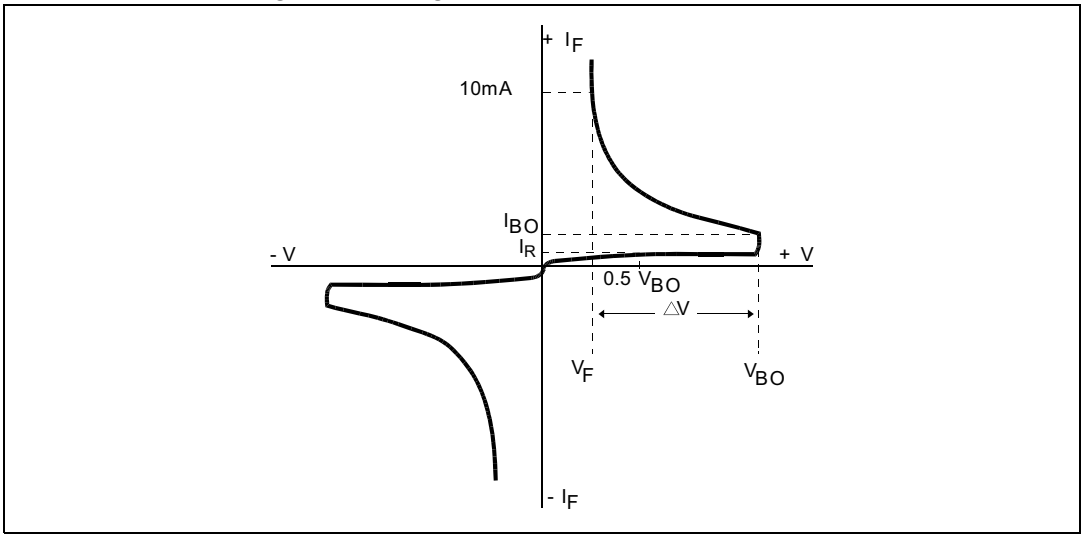


Figure 2. Test circuit

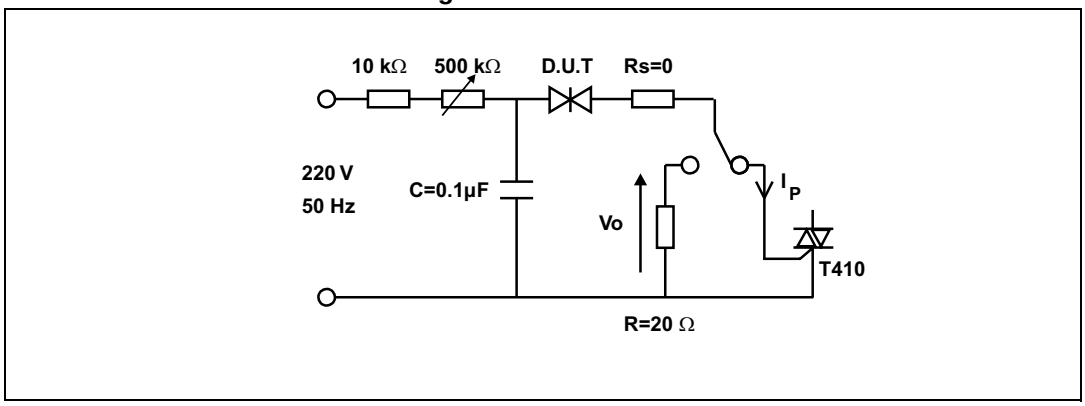


Figure 3. Rise time measurement

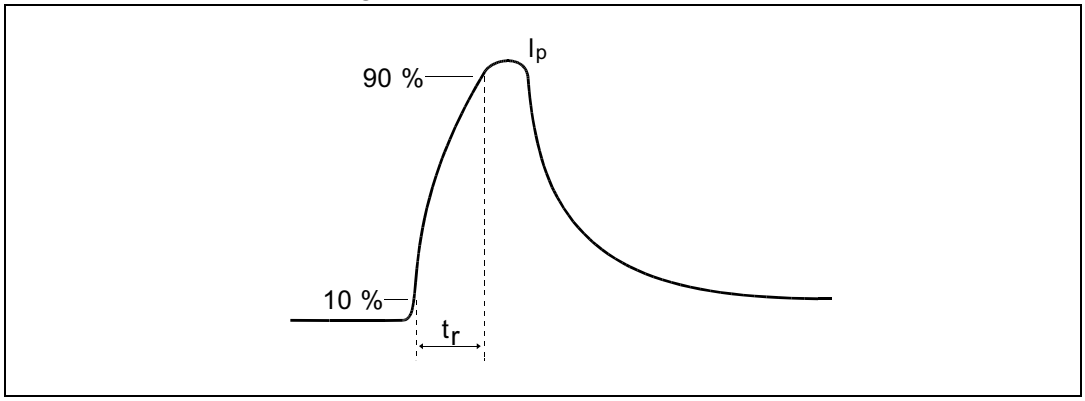


Figure 4. Relative variation of V_{BO} versus junction temperature (typical values)

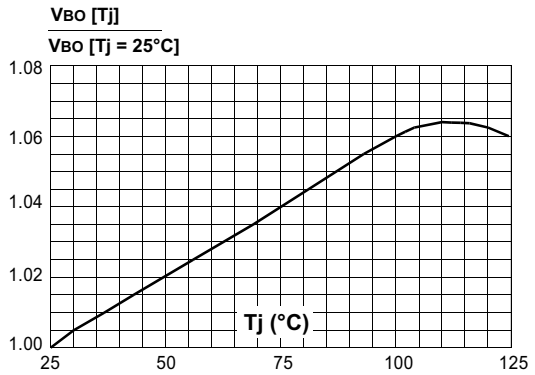


Figure 5. Repetitive peak pulse current versus pulse duration (maximum values)

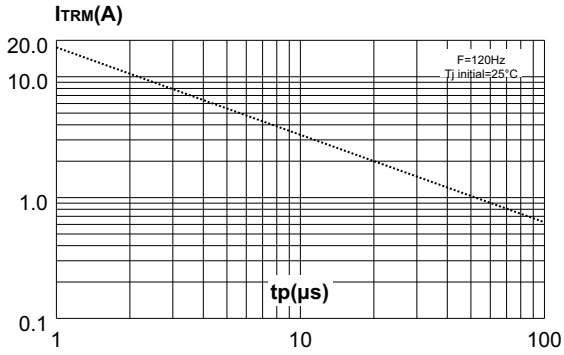
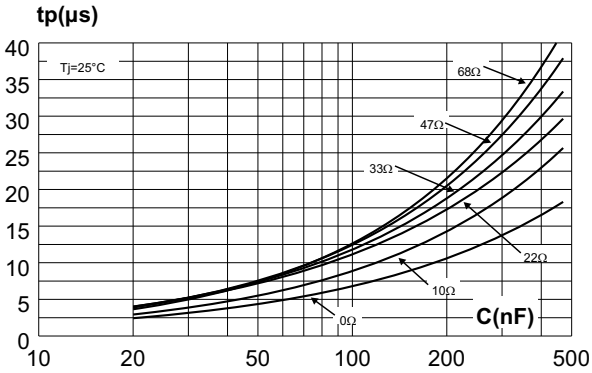


Figure 6. Time duration while current pulse is higher 50 mA versus C and Rs (typical values)



3 Ordering information

Figure 7. Ordering information scheme

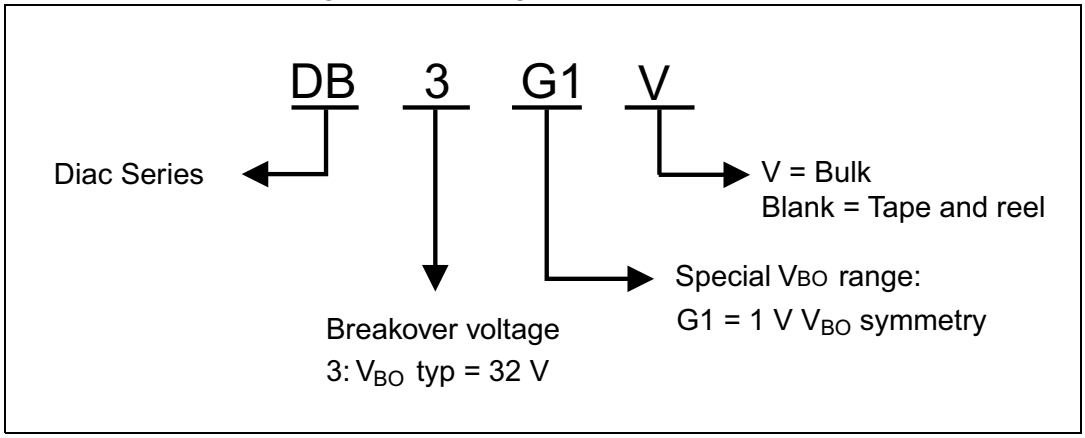


Table 4. Other information

Order code	Marking	Weight	Base qty.	Packing
DB3G1	DB3G1 (blue body coat)	0.15 g	5000	Tape and reel
DB3G1V	DB3G1 (blue body coat)	0.15 g	2000	Bulk

4 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.

4.1 DO-35 package information

Figure 8. DO-35 package outline

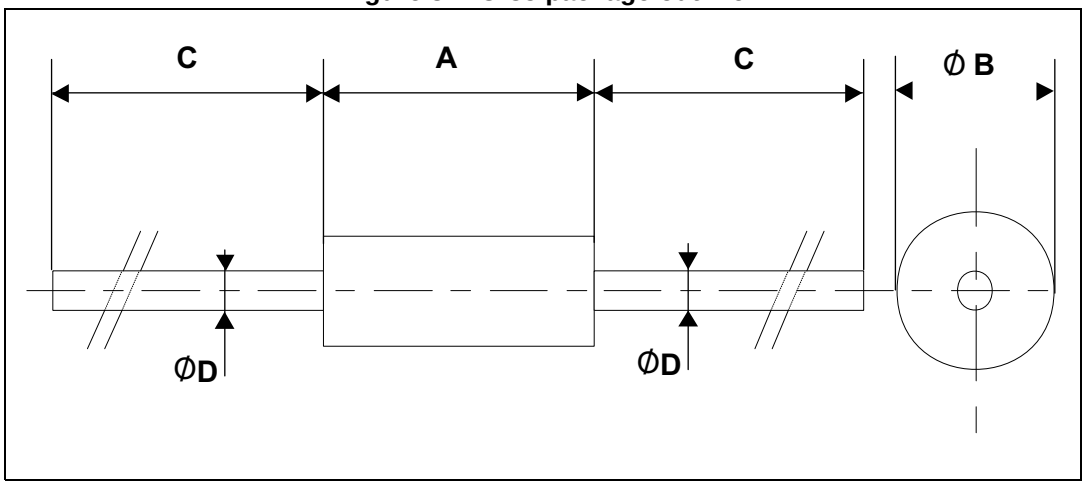


Table 5. DO-35 package mechanical data

Ref.	Dimensions			
	mm		Inches	
	Min.	Max.	Min.	Max.
A	3.05	4.50	0.120	0.177
B	1.53	2.00	0.060	0.079
C	28.00		1.102	
D	0.458	0.558	0.018	0.022

5 Revision history

Table 6. Document revision history

Date	Revision	Changes
15-Sep-2015	1	Initial release.
16-Jun-2016	2	Added a new delivery mode.