

## DB3 DB4 SMDB3

### DIAC

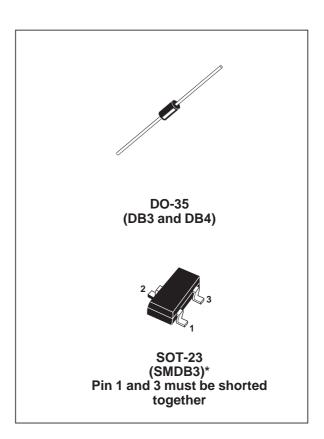
#### **FEATURES**

- V<sub>BO</sub>: 32V and 40V
- LOW BREAKOVER CURRENT

#### **DESCRIPTION**

Functioning as a trigger diode with a fixed voltage reference, the DB3/DB4 series can be used in conjunction with triacs for simplified gate control circuits or as a starting element in fluorenscent lamp ballasts.

A new surface mount version is now available in SOT-23 package, providing reduced space and compatibility with automatic pick and place equipment.



#### **ABSOLUTE MAXIMUM RATINGS** (limiting values)

Symbol	Parameter	Value	Unit	
I <sub>TRM</sub>	Repetitive peak on-state current tp = 20 μs F= 120 Hz	SMDB3	1.00	А
	τρ – 20 μο τ – 120 112	DB3 / DB4	2.00	
Tstg Tj	Storage temperature range Operating junction temperature range		- 40 to + 125	°C

Note: \* SMDB3 indicated as Preliminary spec as product is still in development stage.

October 2001 - Ed: 2B 1/5

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#### **ELECTRICAL CHARACTERISTICS** (Tj = 25°C unless otherwise specified)

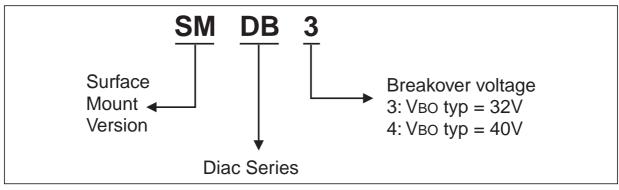
Symbol	Parameter	Test Conditions		SMDB3	DB3	DB4	Unit
V <sub>BO</sub>	Breakover voltage *	C = 22nF **	MIN.	28	28	35	V
			TYP.	32	32	40	
			MAX.	36	36	45	
I V <sub>BO1</sub> - V <sub>BO2</sub> I	Breakover voltage symmetry	C = 22nF **	MAX.	3		V	
ΔV	Dynamic breakover voltage *	V <sub>BO</sub> and V <sub>F</sub> at 10mA	MIN.	10 5		V	
Vo	Output voltage *	see diagram 2 (R=20Ω)	MIN.	10 5		V	
I <sub>BO</sub>	Breakover current *	C = 22nF **	MAX.	10 50		μΑ	
tr	Rise time *	see diagram 3	MAX.	0.50	2		μs
I <sub>R</sub>	Leakage current *	$V_R = 0.5 V_{BO} \text{ max}$	MAX.	1	1	0	μΑ
Ι <sub>P</sub>	Peak current *	see diagram 2 (Gate)	MIN.	1	0.:	30	А

<sup>\*</sup> Applicable to both forward and reverse directions.

#### PRODUCT SELECTOR

Part Number	V <sub>BO</sub>	Package
SMDB3	28 - 36	SOT-23
DB3	28 - 36	DO-35
DB4	35 - 45	DO-35

#### **ORDERING INFORMATION**



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<sup>\*\*</sup> Connected in parallel to the device.

#### OTHER INFORMATION

Part Number	Marking	Weight	Base Quantity	Packing Mode
SMDB3	DB3	0.01 g	3000	Tape & Reel
DB3	DB3 (Blue Body Coat)	0.15 g	5000	Tape & Reel
DB4	DB4 (Blue Body Coat)	0.15 g	5000	Tape & Reel

**Diagram 1:** Voltage - current characteristic curve.

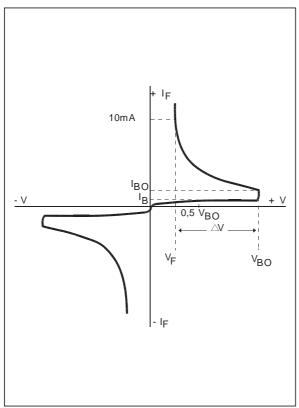
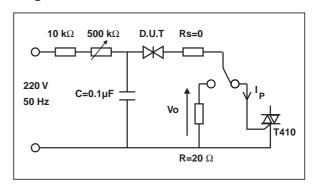
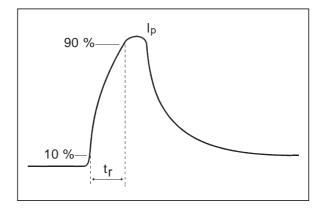


Diagram 2: Test circuit.

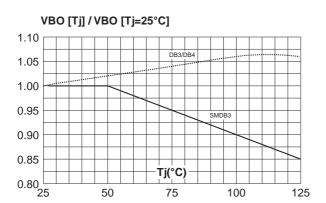


**Diagram 3:** Rise time measurement.

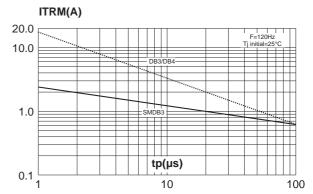


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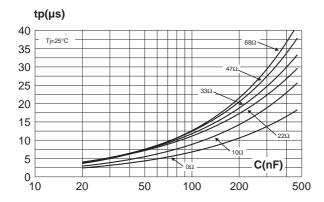
**Fig. 1:** Relative variation of VBO versus junction temperature (typical values).



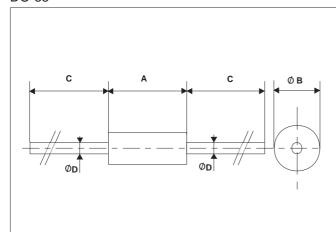
**Fig. 2:** Repetitive peak pulse current versus pulse duration (maximum values).



**Fig. 3:** Time duration while current pulse is higher 50mA versus C and Rs (typical values).



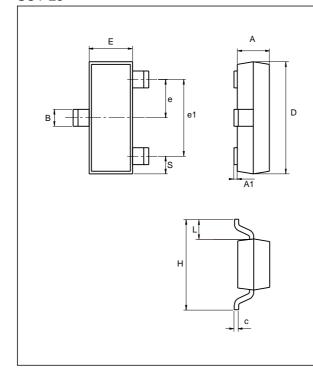
# **PACKAGE MECHANICAL DATA** (in millimeters) DO-35



REF.	DIMENSIONS				
	Millimeters		Inc	hes	
	Min.	Min. Max.		Max.	
А	3.05	4.50	0.120	0.177	
В	1.53	2.00	0.060	0.079	
С	28.00		1.102		
D	0.458	0.558	0.018	0.022	

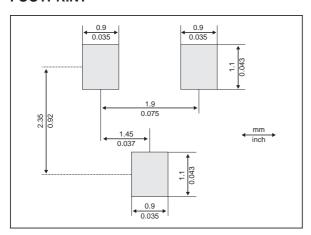
#### PACKAGE MECHANICAL DATA (in millimeters)

SOT-23



REF.	DIMENSIONS			
	Millimeters		Inc	hes
	Min.	Max.	Max. Min.	
Α	0.89	1.4	0.035	0.055
A1	0	0.1	0	0.004
В	0.3	0.51	0.012	0.02
С	0.085	0.18	0.003	0.007
D	2.75	3.04	0.108	0.12
е	0.85	1.05	0.033	0.041
e1	1.7	2.1	0.067	0.083
Е	1.2	1.6	0.047	0.063
Н	2.1	2.75	0.083 0.108	
L	0.6 typ. 0.024		4 typ.	
S	0.35	0.65	0.014 0.026	

#### **FOOTPRINT**



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