

# ZDB Series

## DIAC Trigger Diode



### FEATURES

- VBO: 32V and 40V
- Low Breakover Current
- Very low leakage current
- Excellent symmetry
- Trigger diode with a fixed voltage reference
- RoHS compliant

### DESCRIPTION

- Functioning as a trigger diode with a fixed voltage reference, the ZDB3T / ZDB4T series can be used in conjunction with triacs for simplified gate control circuits or as a starting element in fluorescent 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.

### ORDERING CODE

ZDB    3    T<sup>\*</sup>  
(1)        (2)        (3)

(1) DIAC Series

\* Add 'SM' at the end for (SOT-23) type.

(2) Breakover voltage

3: VBO typ = 32V  
4: VBO typ = 40V

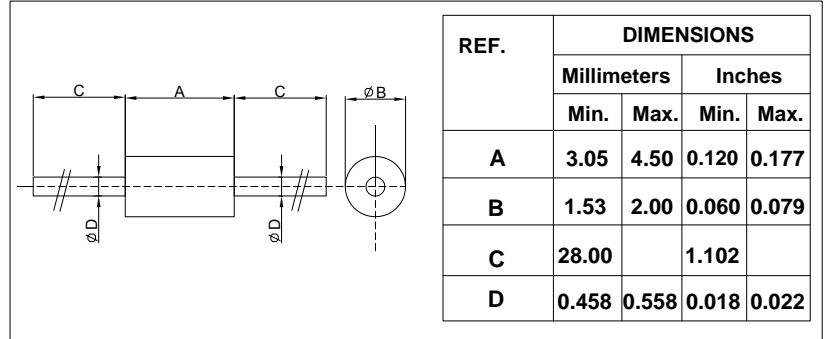
(3) Packaging

T = Tape & Reel

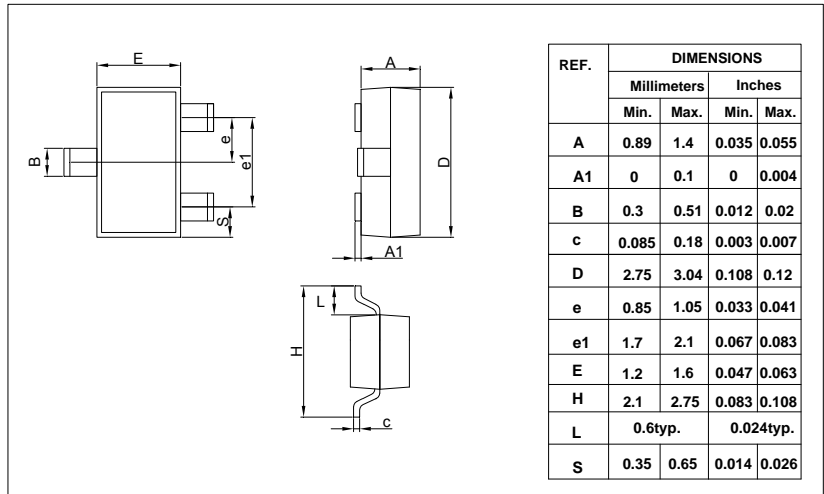
※Please refer to complete Ordering Code document (ZDB-Ord) for more ordering options.

### Configurations:

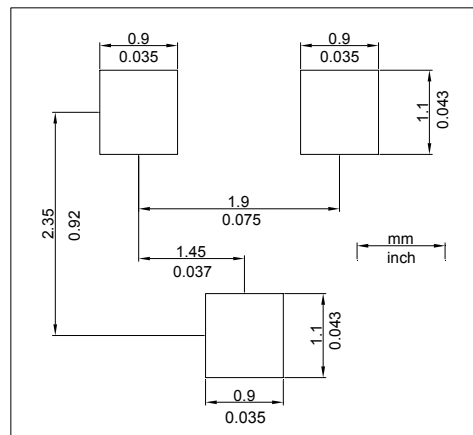
#### DO-35



#### SOT-23



### FOOTPRINT



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### ABSOLUTE MAXIMUM RATINGS (limiting values)

Symbol	Parameter	Value	Unit	
ITRM	Repetitive peak on-state current Tp = 20µs F=120Hz	ZDB3TSM	1.00	A
		ZDB3T / ZDB34T	2.00	
Tstg Tj	Storage temperature range Operating junction temperature range	-40to + 125	°C	

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

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

Symbol	Parameter	Test Conditions	ZDB3TSM	ZDB3T	ZDB34T	Unit	
VBO	Breakover voltage *	C = 22nF **	MIN.	28	28	35	V
			TYP.	32	32	40	
			MAX.	36	36	45	
VBO1- VBO2	Breakover voltage symmetry	C = 22nF **	MAX.	3		V	
ΔV	Dynamic breakover voltage *	VBO and VF at 10mA	MIN.	10	5	V	
Vo	Output voltage *	See diagram 2 (R=20Ω)	MIN.	10	5	V	
IBo	Breakover current *	C = 22nF **	MAX.	10	50	µA	
tr	Rise time *	See diagram 3	MAX.	0.50	2	µs	
IR	Leakage current *	VR =0.5 VBO max	MAX.	1	10	µA	
IP	Peak current *	See diagram 2 (Gate)	MIN.	1	0.30	A	

\*Applicable to both forward and reverse directions.

\*\*Connected in parallel to the device.

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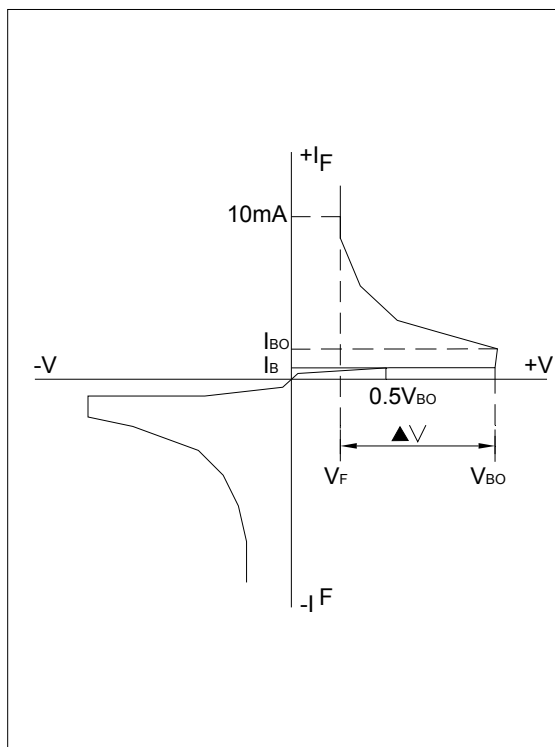
### PRODUCT SELECTOR

Part Number	V <sub>Bo</sub>	Package
ZDB3TSM	28 - 36	SOT-23
ZDB3T	28 - 36	DO-35
ZDB34T	35 - 45	DO-35

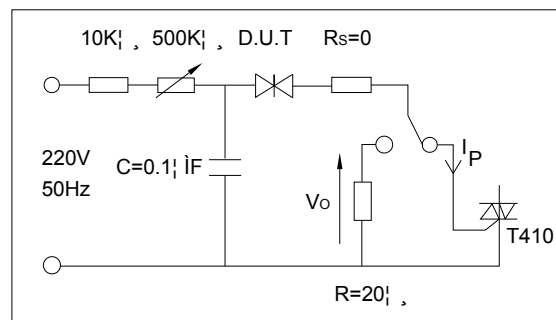
### OTHER INFORMATION

Part Number	Marking	Weight	Base Quantity	Packing Mode
ZDB3TSM	DB3	0.01g	3000	Tape & Reel
ZDB3T	DB3(Blue Body Coat)	0.15g	5000	Tape & Reel
ZDB34T	DB4(Blue Body Coat)	0.15g	5000	Tape & Reel

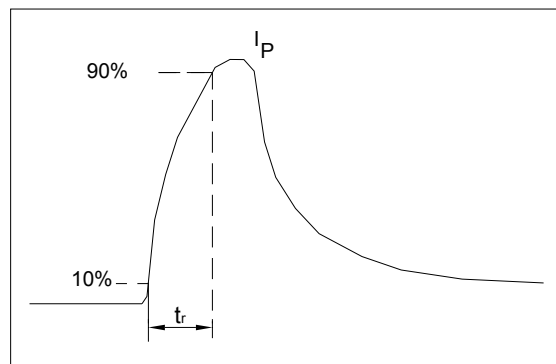
**Diagram 1:** Voltage-current characteristic curve.



**Diagram 2:** Test circuit.



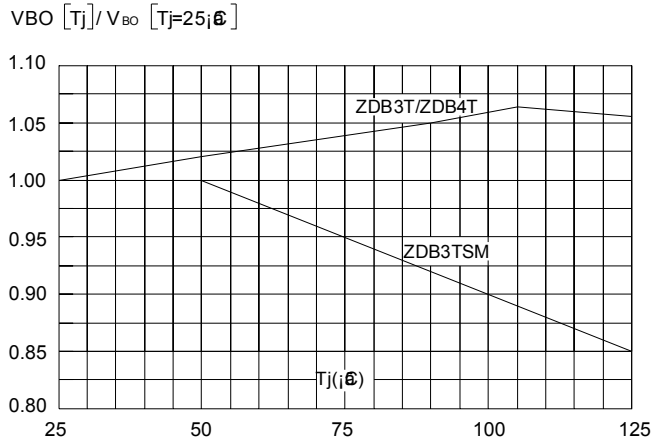
**Diagram 3:** Rise time measurement.



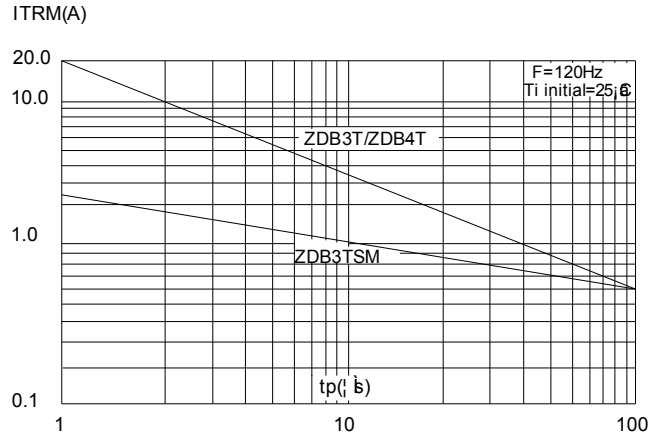
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**Fig. 1:** Relative variation of VBO versus junction temperature (typical values).



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



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

