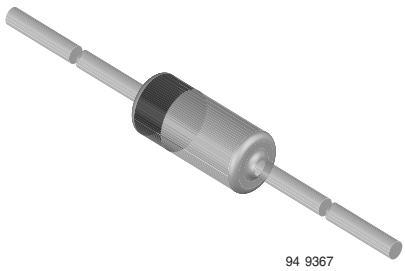
Voltage Stabilizers

Features

- Silicon Stabilizer Diodes
- Monolithic integrated analog circuits designed for small power stabilizer and limitation circuits, providing low dynamic resistance and high-quality stabilization performance as well as low noise. In the reverse direction, these devices show the behavior of forward-biased silicon diodes.



- The end of the ZTE device marked with the cathode ring is to be connected: ZTE1.5 and ZTE2 to the negative pole of the supply voltage; ZTE2.4 thru ZTE5.1 to the positive pole of the supply voltage.

Mechanical Data

Case: DO-35 Glass Case
Weight: approx. 0.13 g
Packaging codes/options:
TR / 10k per 13 " reel (52 mm tape), 30k/box
TAP / 10k per Ammo tape, (52 mm tape), 30k/box

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Operating Current (see Table "Characteristics")				
Inverse Current		I_F	100	mA
Power dissipation		P_{tot}	300[1)]	W
Junction temperature		T_J	150	°C
Storage temperature range		T_S	- 55 to + 150	°C

(1) Valid provided that electrodes are kept at ambient temperature at a distance of 8 mm from case

Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Typ.	Value	Unit
Temperature Coefficient of the stabilized voltage	I_Z = 5 mA	ZTE1.5	α_{VZ}		- 26		10^{-4}/°C
		ZTE2	α_{VZ}		- 26		10^{-4}/°C
		ZTE2.4	α_{VZ}		- 34		10^{-4}/°C
		ZTE5.1	α_{VZ}		- 34		10^{-4}/°C
Thermal resistance junction to ambient air			$R_{\theta JA}$			400[1)]	°C/W

(1) Valid provided that electrodes are kept at ambient temperature at a distance of 8 mm from case

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min	Typ.	Max	Unit
Forward Voltage	I_F = 10 mA	V_F			1.1	V

Electrical Characteristics

Partnumber	Operating Voltage(2)	Dynamic Resistance	Permissable operating current(1)
	V_Z @ I_Z = 5 mA	r_{zj} @ I_Z = 5 mA	I_z @ T_{amb} = 25 °C
	Ω	V	mA
			max
ZTE1.5	1.35 to 1.55	13(<20)	120
ZTE2	2.0 to 2.3	18(<30)	120
ZTE2.4	2.2 to 2.56	14(<20)	120
ZTE2.7	2.5 to 2.9	15(<20)	105
ZTE3	2.8 to 3.2	15(<20)	95
ZTE3.3	3.1 to 3.5	16(<20)	90
ZTE3.6	3.4 to 3.8	16(<25)	80
ZTE3.9	3.7 to 4.1	17(<25)	75
ZTE4.3	4.0 to 4.6	17(<25)	65
ZTE4.7	4.4 to 5.0	18(<25)	60
ZTE5.1	4.8 to 5.4	18(<25)	55

(1) Valid provided that electrodes are kept at ambient temperature at a distance of 8 mm from case

(2) Tested with pulses t_p = 5 ms

Typical Characteristics (T_{amb} = 25 °C unless otherwise specified)

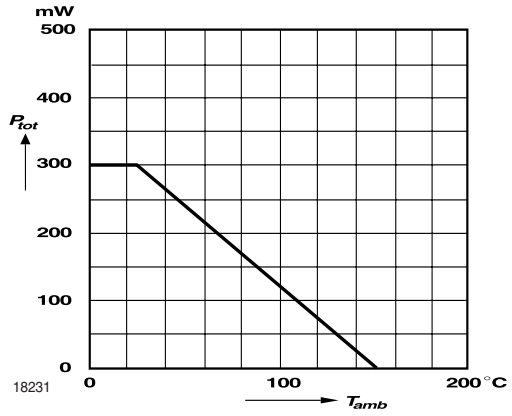


Figure 1. Admissible Power Dissipation vs. Ambient Temperature

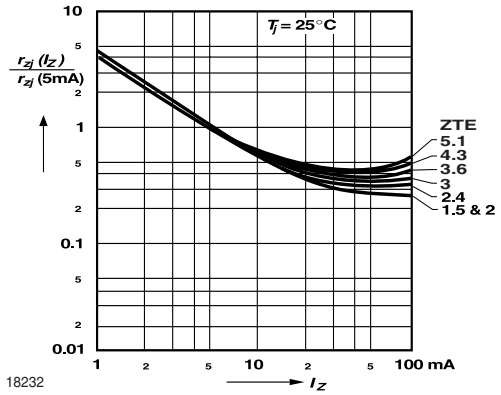


Figure 2. Dynamic resistance vs. operating current, normalized

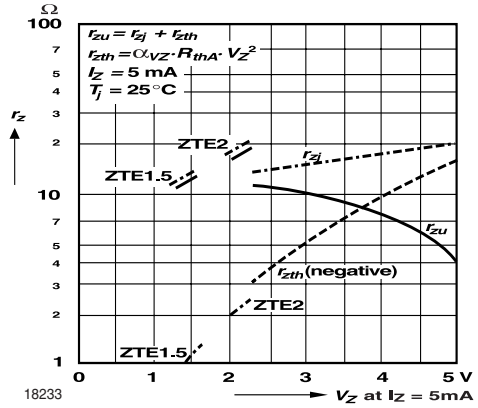


Figure 3. Dynamic resistance vs. operating voltage

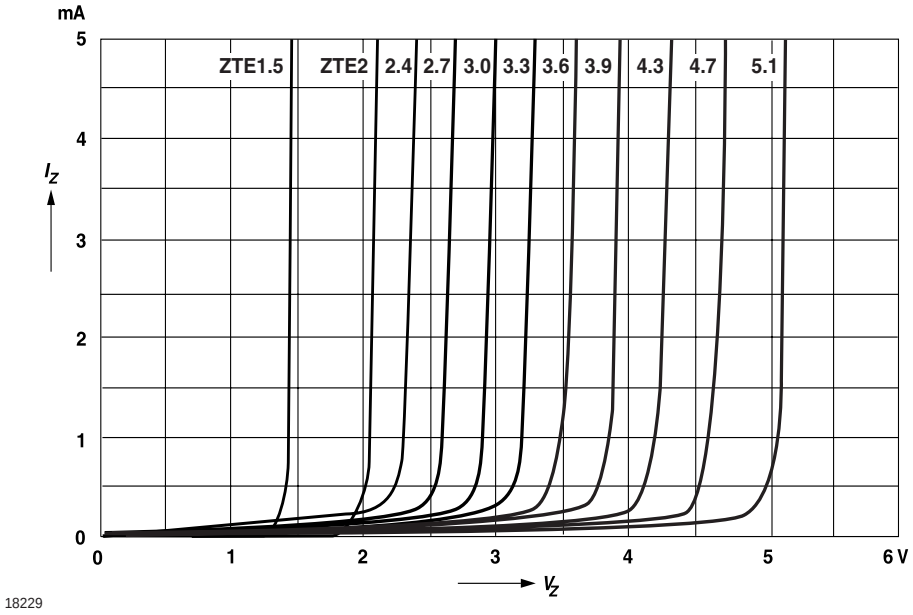


Figure 4. Breakdown Characteristics

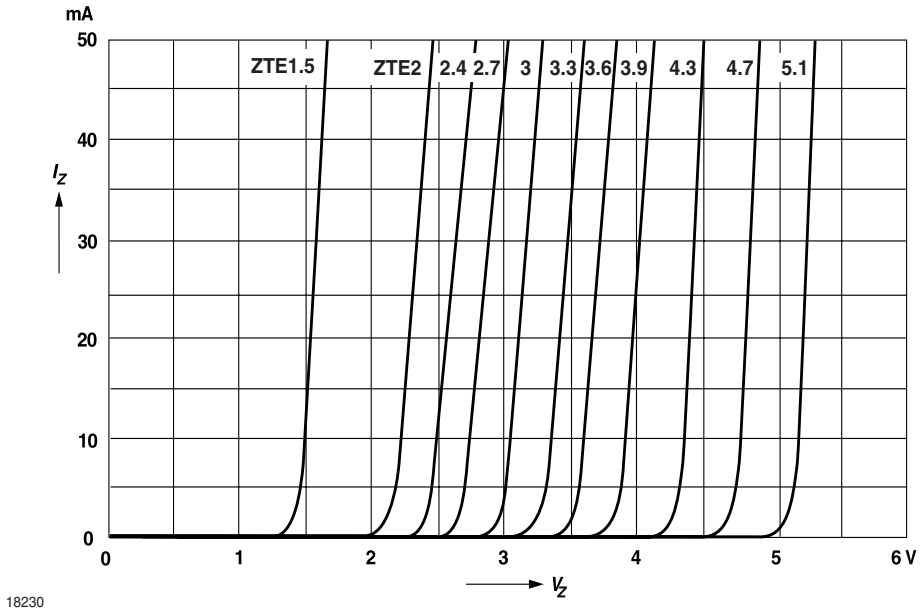
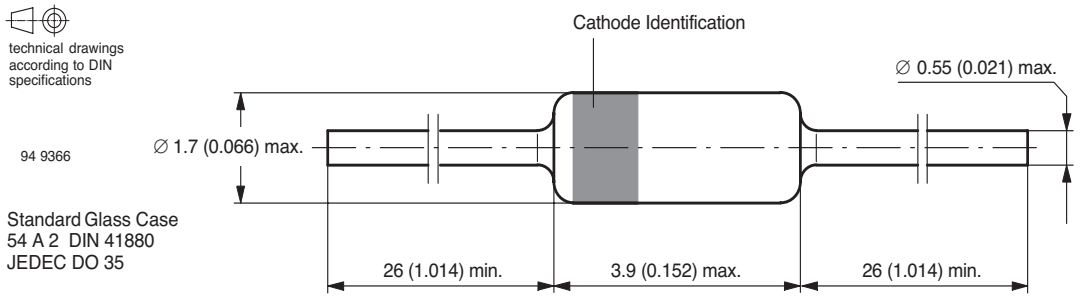


Figure 5. Breakdown Characteristics

Package Dimensions in mm (Inches)



Ozone Depleting Substances Policy Statement

It is the policy of **Vishay Semiconductor GmbH** to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operatingsystems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

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