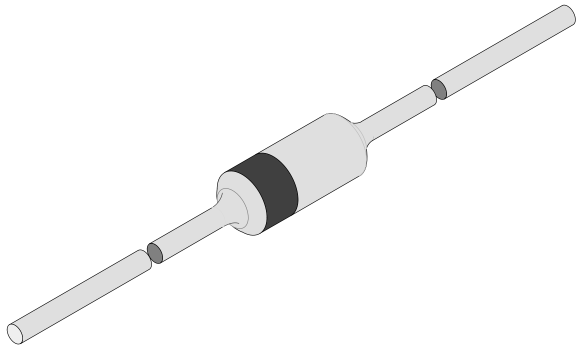
Silicon Epitaxial Planar Z–Diodes

Features

- Very sharp reverse characteristic
- Low reverse current level
- Very high stability
- Low noise
- Available with tighter tolerances



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Applications

Voltage stabilization

Order Instruction

Type	Ordering Code	Remarks
TZX2V4A	TZX2V4A–TAP	Ammopack

Absolute Maximum Ratings

T_j = 25°C

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	l=4 mm, T_L=25 °C		P_V	500	mW
Z–current			I_Z	P_V/V_Z	mA
Junction temperature			T_j	175	°C
Storage temperature range			T_{stg}	–65...+175	°C

Maximum Thermal Resistance

T_j = 25°C

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	l=4 mm, T_L=constant	R_{thJA}	300	K/W

Electrical Characteristics

T_j = 25°C

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	I_F=200mA		V_F			1.5	V

Type	$V_{Zmin.}$ (V)	$V_{Zmax.}$ (V)	Type	$V_{Zmin.}$ (V)	$V_{Zmax.}$ (V)	$r_{Zmax.}$ (Ω)	at I_Z (mA)	$I_{Rmax.}$ (μA)	at V_R (V)
TZX2V4	2.3	2.6	TZX2V4A	2.3	2.5	100	5	5	0.5
			TZX2V4B	2.4	2.6	100	5	5	0.5
TZX2V7	2.5	2.9	TZX2V7A	2.5	2.7	100	5	5	0.5
			TZX2V7B	2.6	2.8	100	5	5	0.5
			TZX2V7C	2.7	2.9	100	5	5	0.5
TZX3V0	2.8	3.2	TZX3V0A	2.8	3.0	100	5	5	0.5
			TZX3V0B	2.9	3.1	100	5	5	0.5
			TZX3V0C	3.0	3.2	100	5	5	0.5
TZX3V3	3.1	3.5	TZX3V3A	3.1	3.3	100	5	5	1
			TZX3V3B	3.2	3.4	100	5	5	1
			TZX3V3C	3.3	3.5	100	5	5	1
TZX3V6	3.4	3.8	TZX3V6A	3.4	3.6	100	5	5	1
			TZX3V6B	3.5	3.7	100	5	5	1
			TZX3V6C	3.6	3.8	100	5	5	1
TZX3V9	3.7	4.1	TZX3V9A	3.7	3.9	100	5	5	1
			TZX3V9B	3.8	4.0	100	5	5	1
			TZX3V9C	3.9	4.1	100	5	5	1
TZX4V3	4.0	4.5	TZX4V3A	4.0	4.2	100	5	5	1.5
			TZX4V3B	4.1	4.3	100	5	5	1.5
			TZX4V3C	4.2	4.4	100	5	5	1.5
			TZX4V3D	4.3	4.5	100	5	5	1.5
TZX4V7	4.4	4.9	TZX4V7A	4.4	4.6	100	5	5	2
			TZX4V7B	4.5	4.7	100	5	5	2
			TZX4V7C	4.6	4.8	100	5	5	2
			TZX4V7D	4.7	4.9	100	5	5	2
TZX5V1	4.8	5.3	TZX5V1A	4.8	5.0	100	5	5	2
			TZX5V1B	4.9	5.1	100	5	5	2
			TZX5V1C	5.0	5.2	100	5	5	2
			TZX5V1D	5.1	5.3	100	5	5	2
TZX5V6	5.2	5.9	TZX5V6A	5.2	5.5	40	5	5	2
			TZX5V6B	5.3	5.6	40	5	5	2
			TZX5V6C	5.4	5.7	40	5	5	2
			TZX5V6D	5.5	5.8	40	5	5	2
			TZX5V6E	5.6	5.9	40	5	5	2
TZX6V2	5.7	6.6	TZX6V2A	5.7	6.0	15	5	1	3
			TZX6V2B	5.8	6.1	15	5	1	3
			TZX6V2C	6.0	6.3	15	5	1	3
			TZX6V2D	6.1	6.4	15	5	1	3
			TZX6V2E	6.3	6.6	15	5	1	3
TZX6V8	6.4	7.2	TZX6V8A	6.4	6.7	15	5	1	3.5
			TZX6V8B	6.6	6.9	15	5	1	3.5
			TZX6V8C	6.7	7.0	15	5	1	3.5
			TZX6V8D	6.9	7.2	15	5	1	3.5

Type	$V_{Zmin.}$ (V)	$V_{Zmax.}$ (V)	Type	$V_{Zmin.}$ (V)	$V_{Zmax.}$ (V)	$r_{Zmax.}$ (Ω)	at I_Z (mA)	$I_{Rmax.}$ (μA)	at V_R (V)
TZX7V5	7.0	7.9	TZX7V5A	7.0	7.3	15	5	1	5.0
			TZX7V5B	7.2	7.6	15	5	1	5.0
			TZX7V5C	7.3	7.7	15	5	1	5.0
			TZX7V5D	7.5	7.9	15	5	1	5.0
TZX8V2	7.7	8.7	TZX8V2A	7.7	8.1	20	5	1	6.2
			TZX8V2B	7.9	8.3	20	5	1	6.2
			TZX8V2C	8.1	8.5	20	5	1	6.2
			TZX8V2D	8.3	8.7	20	5	1	6.2
TZX9V1	8.5	9.7	TZX9V1A	8.5	8.9	20	5	1	6.8
			TZX9V1B	8.7	9.1	20	5	1	6.8
			TZX9V1C	8.9	9.3	20	5	1	6.8
			TZX9V1D	9.1	9.5	20	5	1	6.8
			TZX9V1E	9.3	9.7	20	5	1	6.8
TZX10	9.5	10.6	TZX10A	9.5	9.9	25	5	1	7.5
			TZX10B	9.7	10.1	25	5	1	7.5
			TZX10C	9.9	10.3	25	5	1	7.5
			TZX10D	10.2	10.6	25	5	1	7.5
TZX11	10.4	11.6	TZX11A	10.4	10.8	25	5	1	8.2
			TZX11B	10.7	11.1	25	5	1	8.2
			TZX11C	10.9	11.3	25	5	1	8.2
			TZX11D	11.1	11.6	25	5	1	8.2
TZX12	11.4	12.7	TZX12A	11.4	11.9	35	5	1	9.5
			TZX12B	11.6	12.1	35	5	1	9.5
			TZX12C	11.9	12.4	35	5	1	9.5
			TZX12D	12.2	12.7	35	5	1	9.5
TZX13	12.4	13.4	TZX13A	12.4	12.9	35	5	1	10
			TZX13B	12.6	13.1	35	5	1	10
			TZX13C	12.9	13.4	35	5	1	10
TZX14	13.2	14.3	TZX14A	13.2	13.7	35	5	1	11
			TZX14B	13.5	14.0	35	5	1	11
			TZX14C	13.8	14.3	35	5	1	11
TZX15	14.1	15.5	TZX15A	14.1	14.7	40	5	1	11.5
			TZX15B	14.5	15.1	40	5	1	11.5
			TZX15C	14.9	15.5	40	5	1	11.5
TZX16	15.3	17.1	TZX16A	15.3	15.9	45	5	1	12
			TZX16B	15.7	16.5	45	5	1	12
			TZX16C	16.3	17.1	45	5	1	12
TZX18	16.9	19.0	TZX18A	16.9	17.7	55	5	1	13
			TZX18B	17.5	18.3	55	5	1	13
			TZX18C	18.1	19.0	55	5	1	13
TZX20	18.8	21.2	TZX20A	18.8	19.7	60	2	1	15
			TZX20B	19.5	20.4	60	2	1	15
			TZX20C	20.2	21.2	60	2	1	15

Type	$V_{Zmin.}$ (V)	$V_{Zmax.}$ (V)	Type	$V_{Zmin.}$ (V)	$V_{Zmax.}$ (V)	$r_{Zmax.}$ (Ω)	at I_Z (mA)	$I_{Rmax.}$ (μA)	at V_R (V)
TZX22	20.9	23.3	TZX22A	20.9	21.9	65	2	1	17
			TZX22B	21.6	22.6	65	2	1	17
			TZX22C	22.3	23.3	65	2	1	17
TZX24	22.9	25.5	TZX24A	22.9	24.0	70	2	1	19
			TZX24B	23.6	24.7	70	2	1	19
			TZX24C	24.3	25.5	70	2	1	19
TZX27	25.2	28.6	TZX27A	25.2	26.6	80	2	1	21
			TZX27B	26.2	27.6	80	2	1	21
			TZX27C	27.2	28.6	80	2	1	21
TZX30	28.2	31.6	TZX30A	28.2	29.6	100	2	1	23
			TZX30B	29.2	30.6	100	2	1	23
			TZX30C	30.2	31.6	100	2	1	23
TZX33	31.2	34.5	TZX33A	31.2	32.6	120	2	1	25
			TZX33B	32.2	33.6	120	2	1	25
			TZX33C	33.2	34.5	120	2	1	25
TZX36	34.2	38.0	TZX36A	34.2	35.7	140	2	1	27
			TZX36B	35.3	36.8	140	2	1	27
			TZX36C	36.4	38.0	140	2	1	27

Characteristics (T_j = 25°C unless otherwise specified)

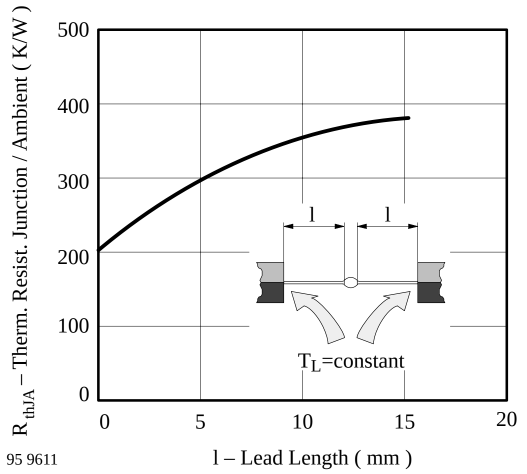


Figure 1. Thermal Resistance vs. Lead Length

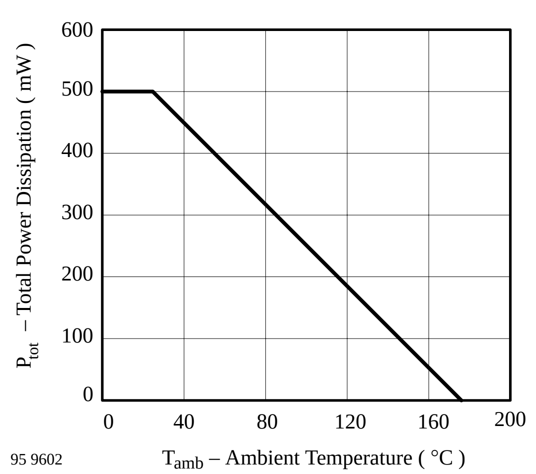


Figure 2. Total Power Dissipation vs. Ambient Temperature

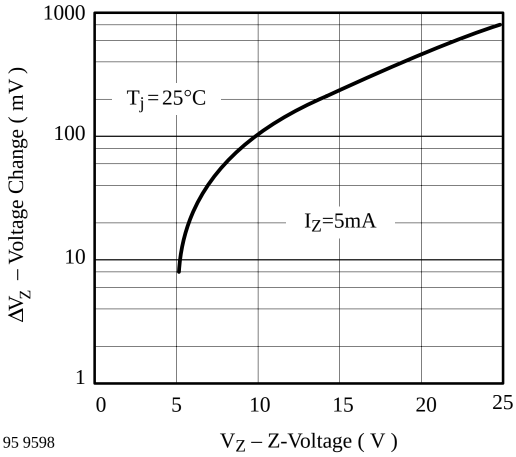


Figure 3. Typical Change of Working Voltage under Operating Conditions at T_{amb}=25˚C

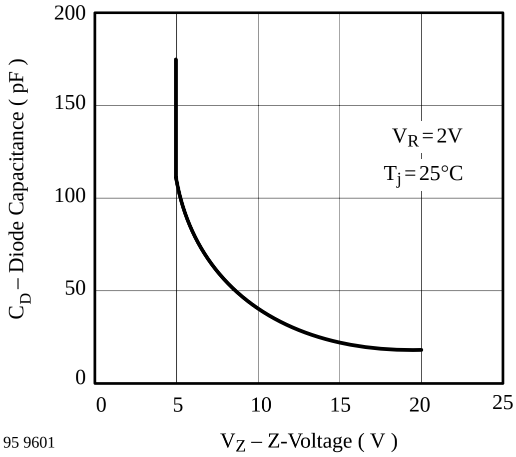


Figure 6. Diode Capacitance vs. Z–Voltage

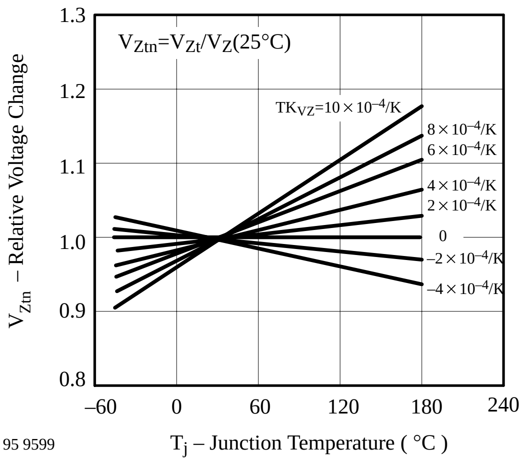


Figure 4. Typical Change of Working Voltage vs. Junction Temperature

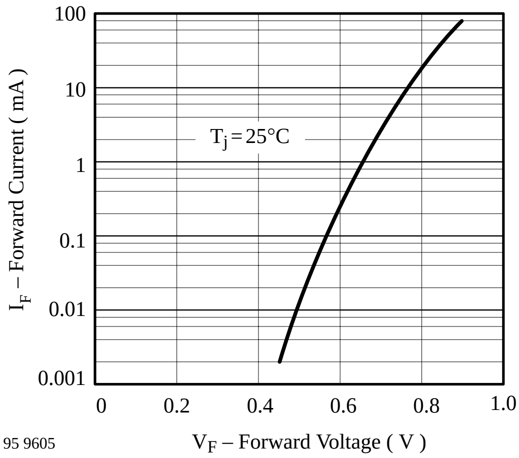


Figure 7. Forward Current vs. Forward Voltage

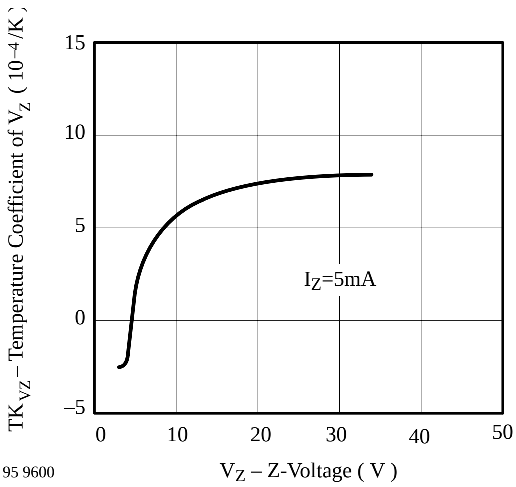


Figure 5. Temperature Coefficient of Vz vs. Z–Voltage

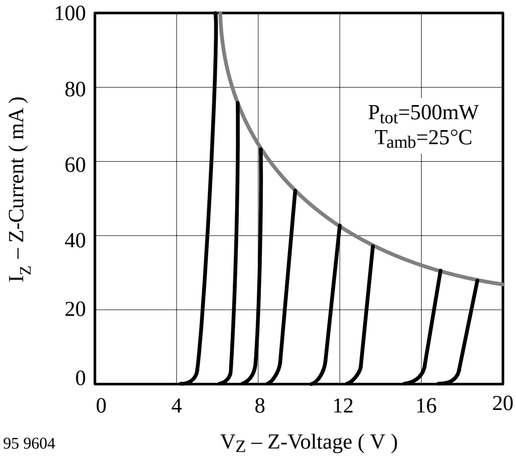


Figure 8. Z–Current vs. Z–Voltage

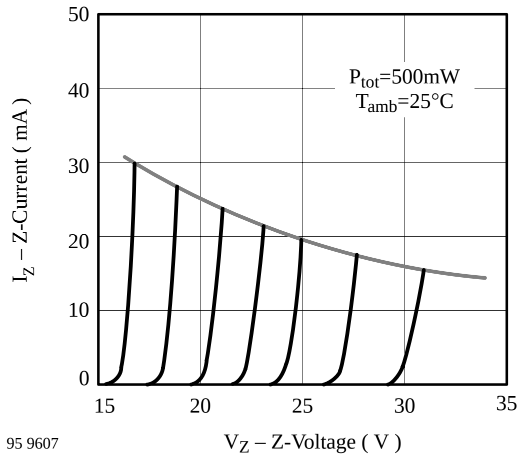


Figure 9. Z–Current vs. Z–Voltage

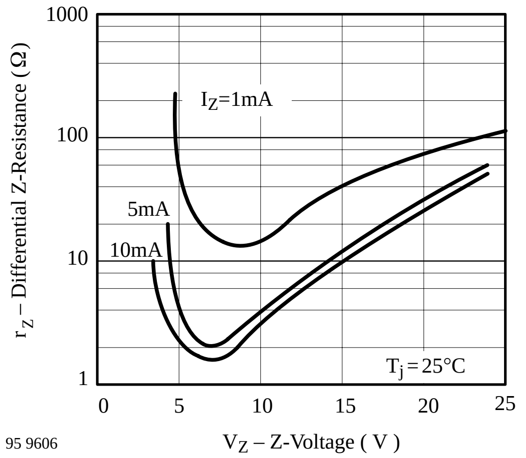


Figure 10. Differential Z–Resistance vs. Z–Voltage

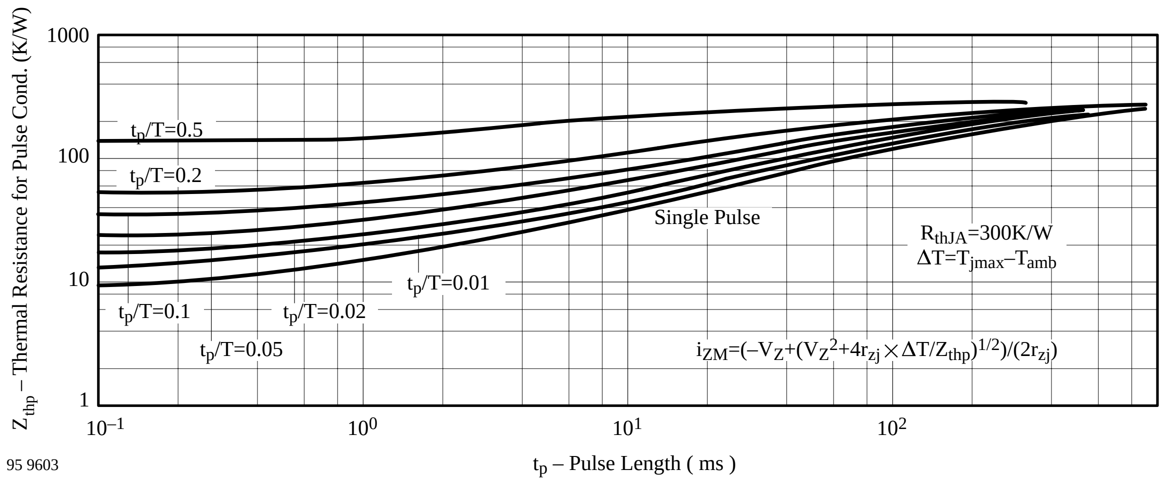
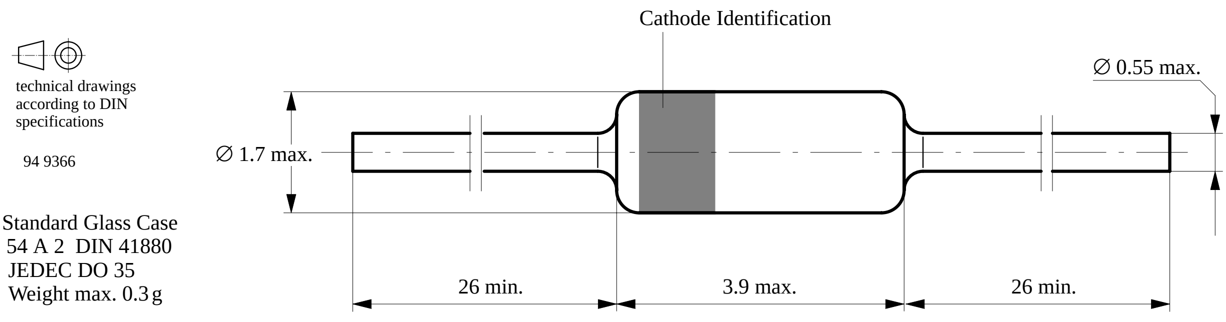


Figure 11. Thermal Response

Dimensions in mm



Standard Glass Case
54 A 2 DIN 41880
JEDEC DO 35
Weight max. 0.3 g

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 operating systems 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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