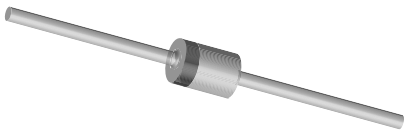
Zener Diodes

Features

- Silicon Planar Power Zener Diodes.
- For use in stablilizing and clipping circuits with high power rating.
- The Zener voltages are graded according to the international E 24 standard. Smaller voltage tolerances are available upon request.



Mechanical Data

Case: DO-41 PLASTIC (DO-204AM)
molded plastic body

Weight: approx. 340 mg

Packaging Codes/Options:
TR/ 5 k per 13 " reel (52 mm tape), 25 k/box

Absolute Maximum Ratings

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

Parameter	Test condition	Symbol	Value	Unit
Zener current (see table "Characteristics"				
Power dissipation	T_{amb} = 60 °C	P_{tot}	1.5 [1]	W

[1] Valid provided that leads at a distance of 3/8 " from case are kept at ambient temperature.

Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		$R_{\theta JA}$	60 [1]	°C/W
Junction temperature		T_j	150	°C
Storage temperature		T_S	- 55 to + 150	°C

[1] Valid provided that leads at a distance of 3/8 " from case are kept at ambient temperature.

Electrical Characteristics

Partnumber	Zener Voltage Range [1]		Dynamic Resistance	Temp. Coefficient of Zener Voltage	Test Current	Leakage Current	Reverse Voltage	Admis. Zener Current	
	V_Z @ I_{ZT}		r_{zj} @ I_{ZT}, f = 1 kHz	@ I_{ZT}	I_{ZT}	I_R	V_R	I_Z @ T_{amb} = 60 °C	I_{ZSM}, t_p = 10 ms
	V	V	Ω	$\alpha_{VZ}(10^{-4}/K)$	mA	µA	V	mA	A
	min	max		typ					
BZY97C3V9	3.7	4.1	7	-0.025	100	15	1	366	3.7
BZY97C4V3	4	4.6	7	-0.02	100	10	1	327	3.4
BZY97C4V7	4.4	5	7	-0.02	100	5	1	300	3.1
BZY97C5V1	4.8	5.4	5	-0.01	100	3	1	278	2.8
BZY97C5V6	5.2	6	2	0.02	100	1	1	250	2.6
BZY97C6V2	5.8	6.6	2	0.05	100	1	1	227	2.3
BZY97C6V8	6.4	7.2	2	0.35	100	1	1	208	2.1
BZY97C7V5	7	7.9	2	0.35	100	1	2	190	1.9
BZY97C8V2	7.7	8.7	2	0.055	100	1	3.5	175	1.8
BZY97C9V1	8.5	9.6	4	0.055	50	1	3.5	156	1.6
BZY97C10	9.4	10.6	4	0.07	50	1	5	142	1.4
BZY97C11	10.4	11.6	7	+5 to +10	50	1	5	129	1.3
BZY97C12	11.4	12.7	7	+5 to +10	50	1	7	118	1.2
BZY97C13	12.4	14.1	10	+5 to +10	50	1	7	106	1.1
BZY97C15	13.8	15.8	10	+5 to +10	50	1	10	96	1
BZY97C16	15.3	17.1	15	+6 to +11	25	1	10	88	0.9
BZY97C18	16.8	19.1	15	+6 to +11	25	1	10	79	0.81
BZY97C20	18.8	21.2	15	+6 to +11	25	1	10	71	0.73
BZY97C22	20.8	23.3	15	+6 to +11	25	1	12	64	0.66
BZY97C24	22.8	25.6	15	+6 to +11	25	1	12	59	0.6
BZY97C27	25.1	28.9	15	+6 to +11	25	1	14	52	0.53
BZY97C30	28	32	15	+6 to +11	25	1	14	47	0.48
BZY97C33	31	35	15	+6 to +11	25	1	17	43	0.44
BZY97C36	34	38	40	+6 to +11	10	1	17	40	0.4
BZY97C39	37	41	40	+6 to +11	10	1	20	37	0.38
BZY97C43	40	46	45	+7 to +12	10	1	20	33	0.33
BZY97C47	44	50	45	+7 to +12	10	1	24	30	0.31
BZY97C51	48	54	60	+7 to +12	10	1	24	28	0.28
BZY97C56	52	60	60	+7 to +12	10	1	28	25	0.26
BZY97C62	58	66	80	+7 to +12	10	1	28	23	0.23
BZY97C68	64	72	80	+7 to +12	10	1	34	21	0.21
BZY97C75	70	79	100	+7 to +12	10	1	34	19	0.19
BZY97C82	77	88	100	+7 to +12	10	1	41	17	0.18
BZY97C91	85	96	200	+8 to +13	5	1	41	16	0.16
BZY97C100	94	106	200	+8 to +13	5	1	50	14	0.15
BZY97C110	104	116	250	+8 to +13	5	1	50	13	0.13
BZY97C120	114	127	250	+8 to +13	5	1	60	12	0.12
BZY97C130	124	141	300	+8 to +13	5	1	60	11	0.11
BZY97C150	138	156	300	+8 to +13	5	1	75	10	0.1
BZY97C160	153	171	350	+8 to +13	5	1	75	9	0.09
BZY97C180	168	191	350	+8 to +13	5	1	90	8	0.08
BZY97C200	188	212	350	+8 to +13	5	1	90	7	0.07

[1] Tested with pulses t_p = 5 ms

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

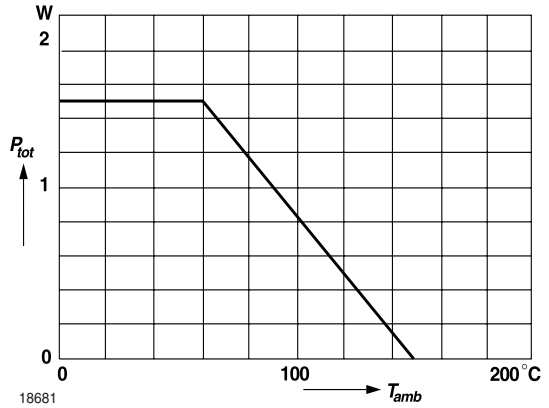


Figure 1. Admissible Power Dissipation vs. Ambient Temperature

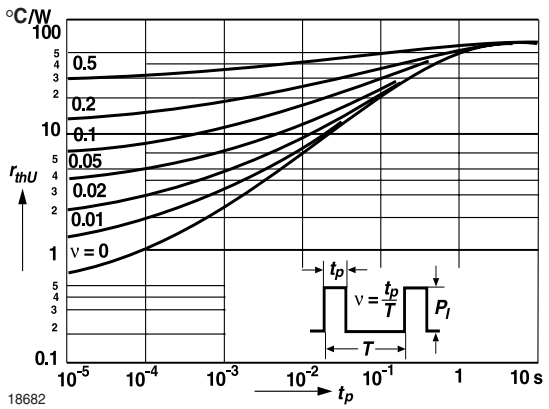


Figure 2. Pulse Thermal Resistance vs. Pulse Duration

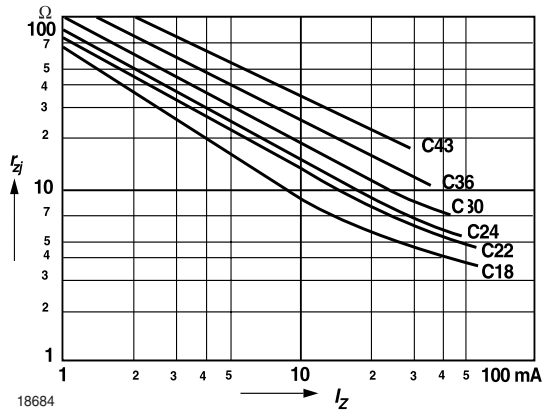


Figure 3. Dynamic Resistance vs. Zener Current

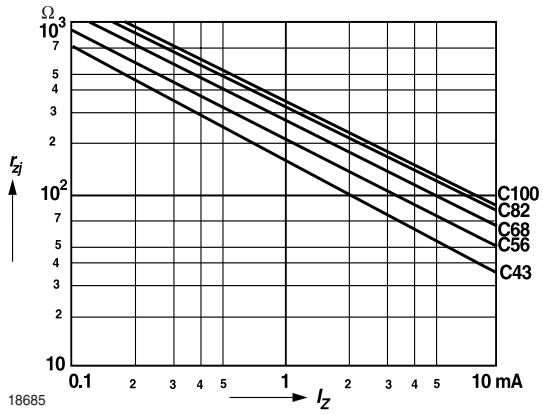


Figure 4. Dynamic Resistance vs. Zener Current

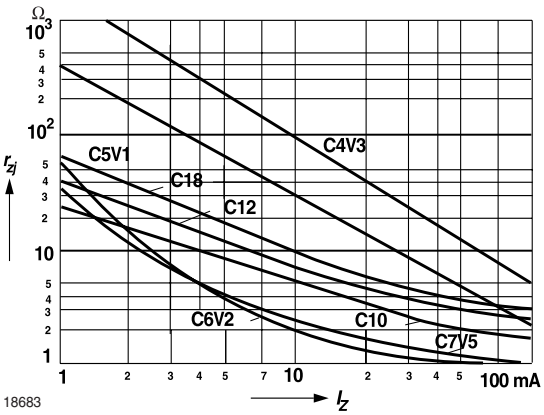


Figure 5. Dynamic Resistance vs. Zener Current

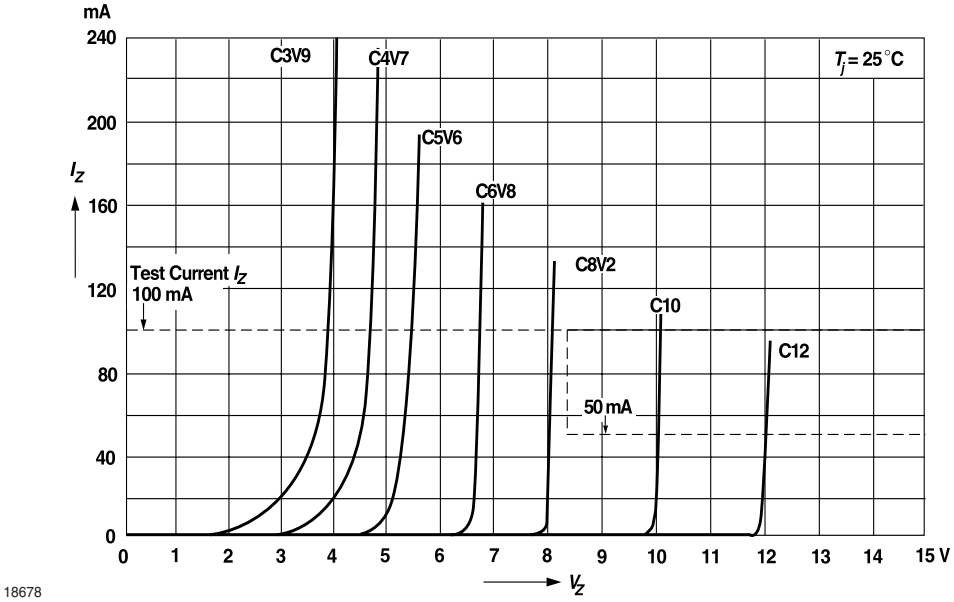


Figure 6. Breakdown Characteristics

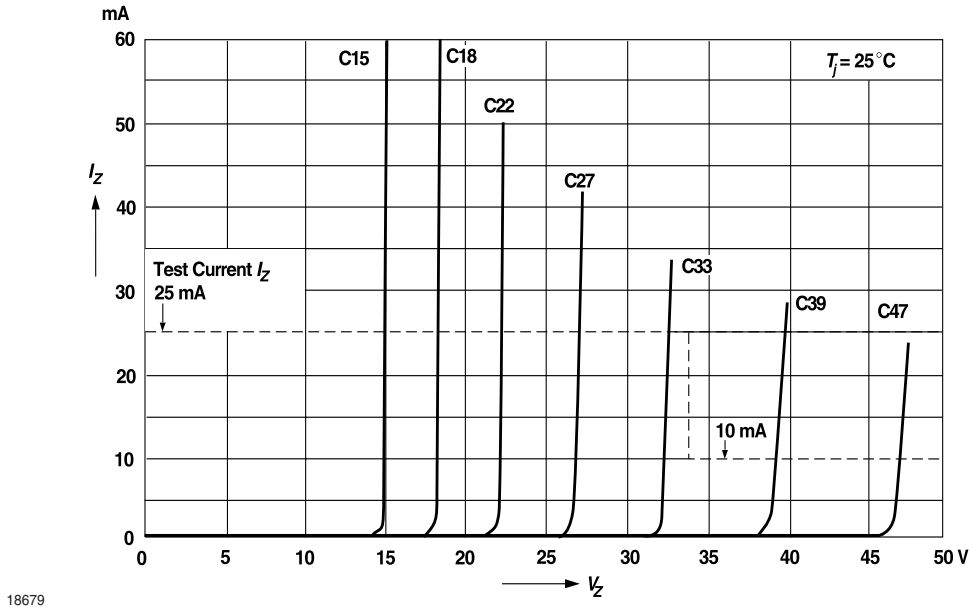


Figure 7. Breakdown Characteristics

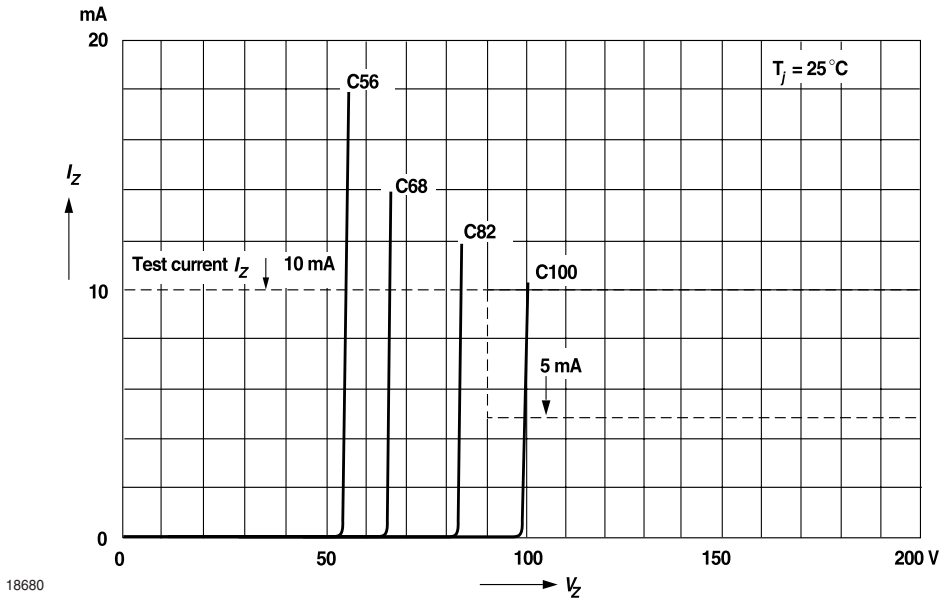
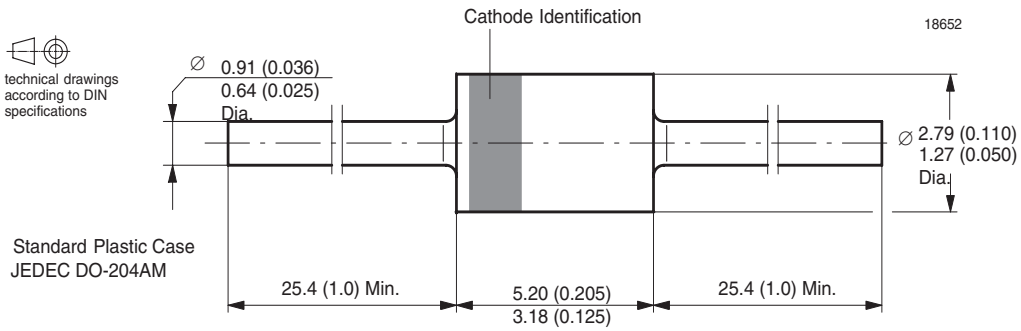


Figure 8. Breakdown Characteristics

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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