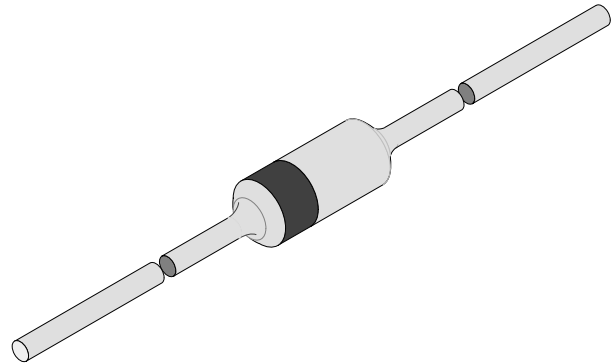


## Silicon Epitaxial Planar Z-Diodes

### Features

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



94 9367

### Applications

Voltage stabilization

### Absolute Maximum Ratings

$T_j = 25^\circ\text{C}$

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

### Maximum Thermal Resistance

$T_j = 25^\circ\text{C}$

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

### Characteristics

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=200\text{mA}$		$V_F$			1.5	V

Type BZX55C...	V <sub>Znom</sub> V	I <sub>ZT</sub> for mA	V <sub>ZT</sub> <sup>1)</sup> and V	r <sub>zjT</sub> Ω	r <sub>zjK</sub> at Ω	I <sub>ZK</sub> mA	I <sub>R</sub> and μA	I <sub>R</sub> <sup>2)</sup> at μA	V <sub>R</sub> V	TK <sub>VZ</sub> %/K
2V4	2.4	5	2.28 to 2.56	< 85	< 600	1	< 50	< 100	1	-0.09 to -0.06
2V7	2.7	5	2.5 to 2.9	< 85	< 600	1	< 10	< 50	1	-0.09 to -0.06
3V0	3.0	5	2.8 to 3.2	< 85	< 600	1	< 4	< 40	1	-0.08 to -0.05
3V3	3.3	5	3.1 to 3.5	< 85	< 600	1	< 2	< 40	1	-0.08 to -0.05
3V6	3.6	5	3.4 to 3.8	< 85	< 600	1	< 2	< 40	1	-0.08 to -0.05
3V9	3.9	5	3.7 to 4.1	< 85	< 600	1	< 2	< 40	1	-0.08 to -0.05
4V3	4.3	5	4.0 to 4.6	< 75	< 600	1	< 1	< 20	1	-0.06 to -0.03
4V7	4.7	5	4.4 to 5.0	< 60	< 600	1	< 0.5	< 10	1	-0.05 to +0.02
5V1	5.1	5	4.8 to 5.4	< 35	< 550	1	< 0.1	< 2	1	-0.02 to +0.02
5V6	5.6	5	5.2 to 6.0	< 25	< 450	1	< 0.1	< 2	1	-0.05 to +0.05
6V2	6.2	5	5.8 to 6.6	< 10	< 200	1	< 0.1	< 2	2	0.03 to 0.06
6V8	6.8	5	6.4 to 7.2	< 8	< 150	1	< 0.1	< 2	3	0.03 to 0.07
7V5	7.5	5	7.0 to 7.9	< 7	< 50	1	< 0.1	< 2	5	0.03 to 0.07
8V2	8.2	5	7.7 to 8.7	< 7	< 50	1	< 0.1	< 2	6.2	0.03 to 0.08
9V1	9.1	5	8.5 to 9.6	< 10	< 50	1	< 0.1	< 2	6.8	0.03 to 0.09
10	10	5	9.4 to 10.6	< 15	< 70	1	< 0.1	< 2	7.5	0.03 to 0.1
11	11	5	10.4 to 11.6	< 20	< 70	1	< 0.1	< 2	8.2	0.03 to 0.11
12	12	5	11.4 to 12.7	< 20	< 90	1	< 0.1	< 2	9.1	0.03 to 0.11
13	13	5	12.4 to 14.1	< 26	< 110	1	< 0.1	< 2	10	0.03 to 0.11
15	15	5	13.8 to 15.6	< 30	< 110	1	< 0.1	< 2	11	0.03 to 0.11
16	16	5	15.3 to 17.1	< 40	< 170	1	< 0.1	< 2	12	0.03 to 0.11
18	18	5	16.8 to 19.1	< 50	< 170	1	< 0.1	< 2	13	0.03 to 0.11
20	20	5	18.8 to 21.2	< 55	< 220	1	< 0.1	< 2	15	0.03 to 0.11
22	22	5	20.8 to 23.3	< 55	< 220	1	< 0.1	< 2	16	0.04 to 0.12
24	24	5	22.8 to 25.6	< 80	< 220	1	< 0.1	< 2	18	0.04 to 0.12
27	27	5	25.1 to 28.9	< 80	< 220	1	< 0.1	< 2	20	0.04 to 0.12
30	30	5	28 to 32	< 80	< 220	1	< 0.1	< 2	22	0.04 to 0.12
33	33	5	31 to 35	< 80	< 220	1	< 0.1	< 2	24	0.04 to 0.12
36	36	5	34 to 38	< 80	< 220	1	< 0.1	< 2	27	0.04 to 0.12
39	39	2.5	37 to 41	< 90	< 500	0.5	< 0.1	< 5	30	0.04 to 0.12
43	43	2.5	40 to 46	< 90	< 600	0.5	< 0.1	< 5	33	0.04 to 0.12
47	47	2.5	44 to 50	< 110	< 700	0.5	< 0.1	< 5	36	0.04 to 0.12
51	51	2.5	48 to 54	< 125	< 700	0.5	< 0.1	< 10	39	0.04 to 0.12
56	56	2.5	52 to 60	< 135	< 1000	0.5	< 0.1	< 10	43	0.04 to 0.12
62	62	2.5	58 to 66	< 150	< 1000	0.5	< 0.1	< 10	47	0.04 to 0.12
68	68	2.5	64 to 72	< 200	< 1000	0.5	< 0.1	< 10	51	0.04 to 0.12
75	75	2.5	70 to 79	< 250	< 1500	0.5	< 0.1	< 10	56	0.04 to 0.12

1) Tighter tolerances available on request

 2) T<sub>j</sub> = 150°C

## Typical Characteristics ( $T_j = 25^\circ\text{C}$ unless otherwise specified)

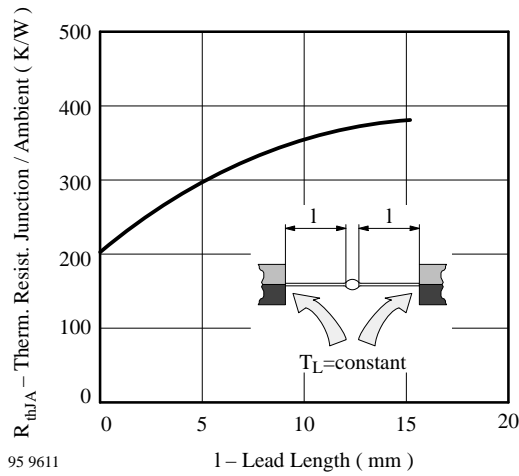


Figure 1 : Thermal Resistance vs. Lead Length

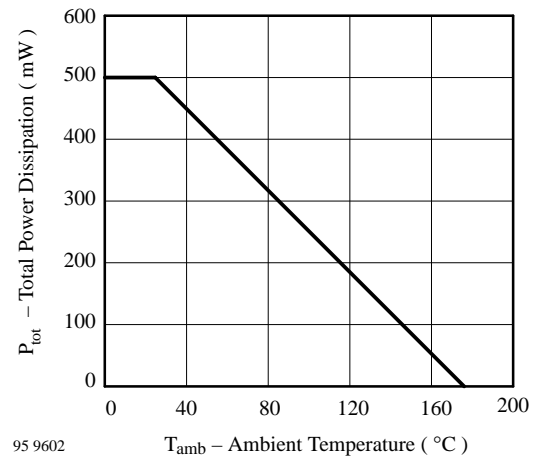


Figure 2 : Total Power Dissipation vs. Ambient Temperature

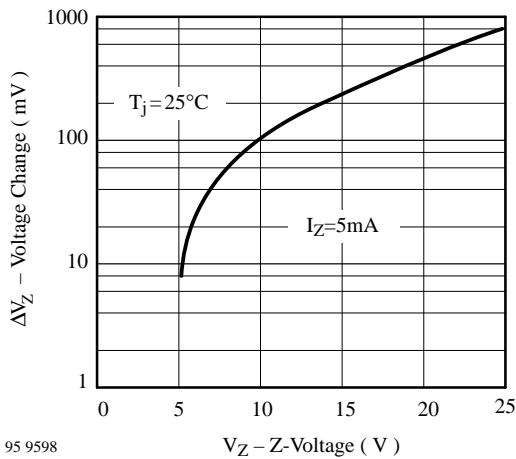


Figure 3 : Typical Change of Working Voltage under Operating Conditions at  $T_{\text{amb}}=25^\circ\text{C}$

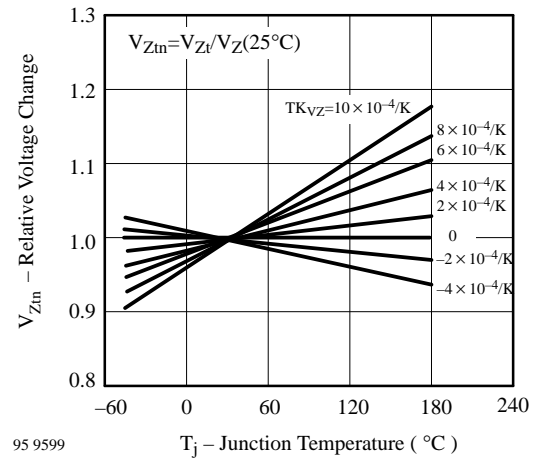


Figure 4 : Typical Change of Working Voltage vs. Junction Temperature

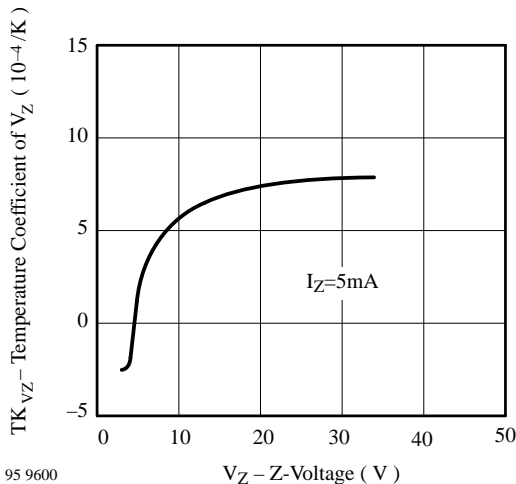


Figure 5 : Temperature Coefficient of  $V_Z$  vs. Z-Voltage

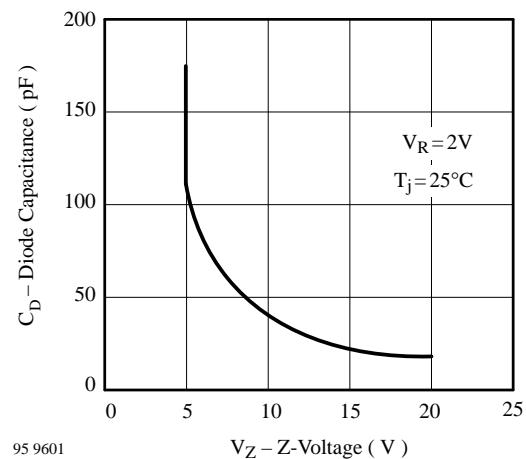


Figure 6 : Diode Capacitance vs. Z-Voltage

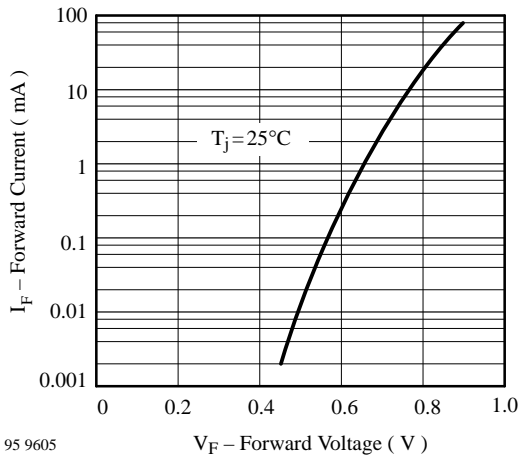


Figure 7 : Forward Current vs. Forward Voltage

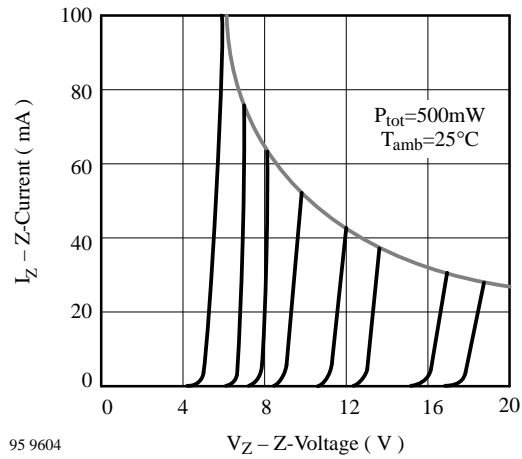


Figure 8 : Z-Current vs. Z-Voltage

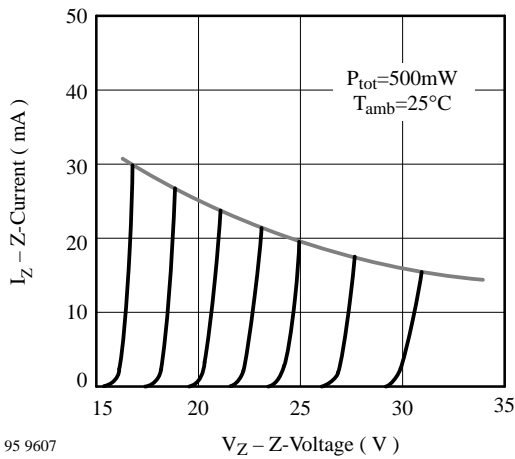


Figure 9 : Z-Current vs. Z-Voltage

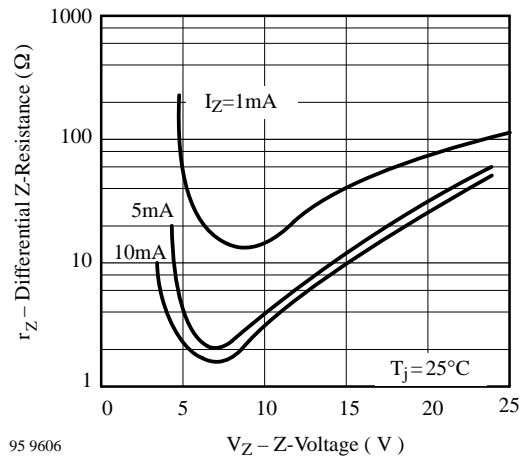


Figure 10 : Differential Z-Resistance vs. Z-Voltage

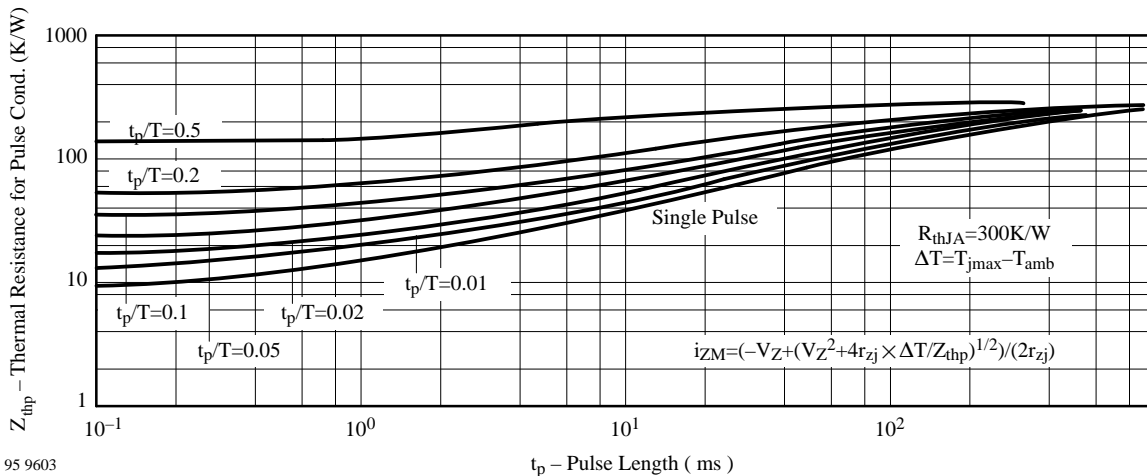


Figure 11 : Thermal Response

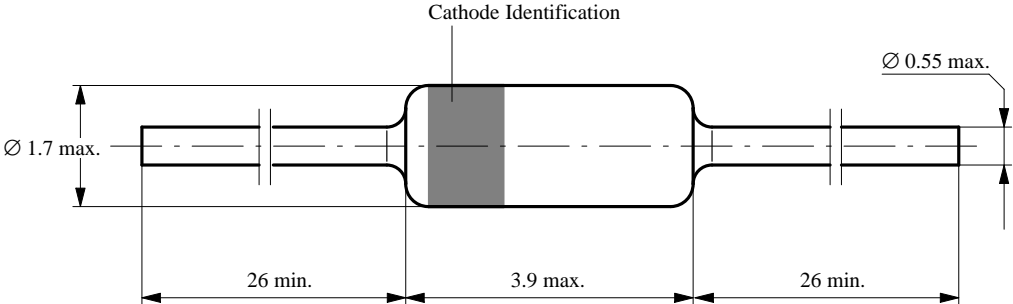
### Dimensions in mm



technical drawings according to DIN specifications

94 9366

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 **TEMIC TELEFUNKEN microelectronic GmbH** to

1. Meet all present and future national and international statutory requirements and
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.

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

The Montreal Protocol (1987) and its London Amendments (1990) will soon 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.

**TEMIC TELEFUNKEN microelectronic GmbH** semiconductor division has been able to use its policy of continuous improvements to eliminate the use of any 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 and
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

**TEMIC** can certify that our semiconductors are not manufactured with and do not contain ozone depleting substances.

**We reserve the right to make changes to improve technical design without further notice.**

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use TEMIC products for any unintended or unauthorized application, the buyer shall indemnify TEMIC against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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