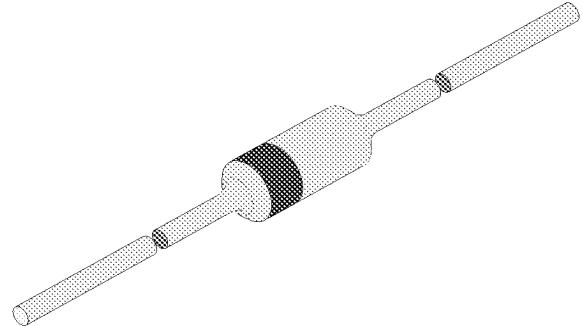


Silicon Epitaxial Planar Z-Diodes

Features

- Very sharp reverse characteristic
- Low reverse current level
- Low noise
- Very high stability
- Available with tighter tolerances
- V_Z -tolerance $\pm 2\%$



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_{stg}	$-65\dots+175$	$^\circ\text{C}$

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_{thJA}	300	K/W

Electrical Characteristics

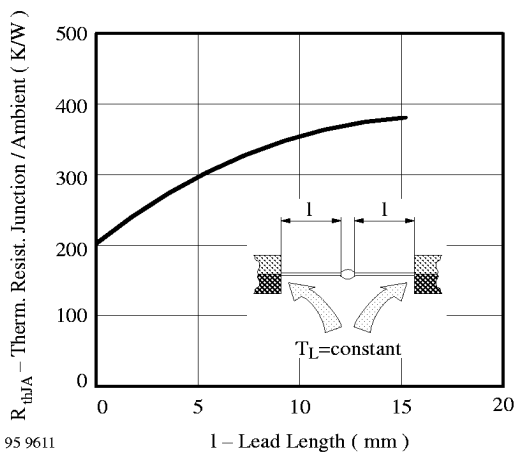
$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=100\text{mA}$		V_F			1.5	V



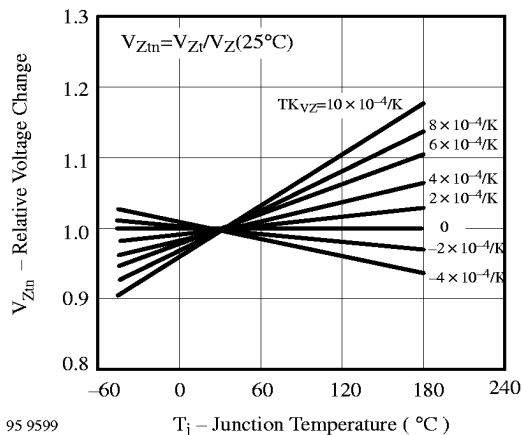
Type	V _{Znom}	I _{ZT} for	V _{ZT} and	r _{zT}	r _{zik} at	I _{ZK}	I _R and	I _R at	V _R	TK _{VZ}
BZX55B...	V	mA	V	Ω	Ω	mA	μA	μA ²⁾	V	%/K
2V7	2.7	5	2.64 to 2.76	< 85	< 600	1	< 10	< 50	1	-0.09 to -0.06
3V0	3.0	5	2.94 to 3.06	< 90	< 600	1	< 4	< 40	1	-0.08 to -0.05
3V3	3.3	5	3.24 to 3.36	< 90	< 600	1	< 2	< 40	1	-0.08 to -0.05
3V6	3.6	5	3.52 to 3.68	< 90	< 600	1	< 2	< 40	1	-0.08 to -0.05
3V9	3.9	5	3.82 to 3.98	< 90	< 600	1	< 2	< 40	1	-0.08 to -0.05
4V3	4.3	5	4.22 to 4.38	< 90	< 600	1	< 1	< 20	1	-0.06 to -0.03
4V7	4.7	5	4.60 to 4.80	< 80	< 600	1	< 0.5	< 10	1	-0.05 to +0.02
5V1	5.1	5	5.00 to 5.20	< 60	< 550	1	< 0.1	< 2	1	-0.02 to +0.02
5V6	5.6	5	5.48 to 5.72	< 40	< 450	1	< 0.1	< 2	1	-0.05 to +0.05
6V2	6.2	5	6.08 to 6.32	< 10	< 200	1	< 0.1	< 2	2	0.03 to 0.06
6V8	6.8	5	6.66 to 6.94	< 8	< 150	1	< 0.1	< 2	3	0.03 to 0.07
7V5	7.5	5	7.35 to 7.65	< 7	< 50	1	< 0.1	< 2	5	0.03 to 0.07
8V2	8.2	5	8.04 to 8.36	< 7	< 50	1	< 0.1	< 2	6.2	0.03 to 0.08
9V1	9.1	5	8.92 to 9.28	< 10	< 50	1	< 0.1	< 2	6.8	0.03 to 0.09
10	10	5	9.80 to 10.20	< 15	< 70	1	< 0.1	< 2	7.5	0.03 to 0.1
11	11	5	10.78 to 11.22	< 20	< 70	1	< 0.1	< 2	8.2	0.03 to 0.11
12	12	5	11.76 to 12.24	< 20	< 90	1	< 0.1	< 2	9.1	0.03 to 0.11
13	13	5	12.74 to 13.26	< 26	< 110	1	< 0.1	< 2	10	0.03 to 0.11
15	15	5	14.70 to 15.30	< 30	< 110	1	< 0.1	< 2	11	0.03 to 0.11
16	16	5	15.70 to 16.30	< 40	< 170	1	< 0.1	< 2	12	0.03 to 0.11
18	18	5	17.64 to 18.36	< 50	< 170	1	< 0.1	< 2	13	0.03 to 0.11
20	20	5	19.60 to 20.40	< 55	< 220	1	< 0.1	< 2	15	0.03 to 0.11
22	22	5	21.55 to 22.45	< 55	< 220	1	< 0.1	< 2	16	0.04 to 0.12
24	24	5	23.5 to 24.5	< 80	< 220	1	< 0.1	< 2	18	0.04 to 0.12
27	27	5	26.4 to 27.6	< 80	< 220	1	< 0.1	< 2	20	0.04 to 0.12
30	30	5	29.4 to 30.6	< 80	< 220	1	< 0.1	< 2	22	0.04 to 0.12
33	33	5	32.4 to 33.6	< 80	< 220	1	< 0.1	< 2	24	0.04 to 0.12
36	36	5	35.3 to 36.7	< 80	< 220	1	< 0.1	< 2	27	0.04 to 0.12
39	39	2.5	38.2 to 39.8	< 90	< 500	0.5	< 0.1	< 5	30	0.04 to 0.12
43	43	2.5	42.1 to 43.9	< 90	< 600	0.5	< 0.1	< 5	33	0.04 to 0.12
47	47	2.5	46.1 to 47.9	< 110	< 700	0.5	< 0.1	< 5	36	0.04 to 0.12
51	51	2.5	50.0 to 52.0	< 125	< 700	0.5	< 0.1	< 10	39	0.04 to 0.12
56	56	2.5	54.9 to 57.1	< 135	< 1000	0.5	< 0.1	< 10	43	0.04 to 0.12
62	62	2.5	60.8 to 63.2	< 150	< 1000	0.5	< 0.1	< 10	47	0.04 to 0.12
68	68	2.5	66.6 to 69.4	< 200	< 1000	0.5	< 0.1	< 10	51	0.04 to 0.12
75	75	2.5	73.5 to 76.5	< 250	< 1500	0.5	< 0.1	< 10	56	0.04 to 0.12

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



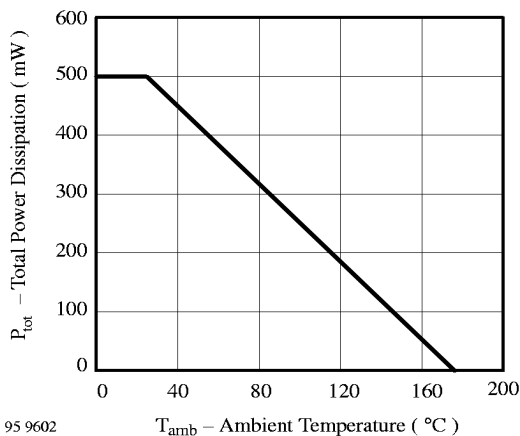
95 9611

Figure 1. Thermal Resistance vs. Lead Length



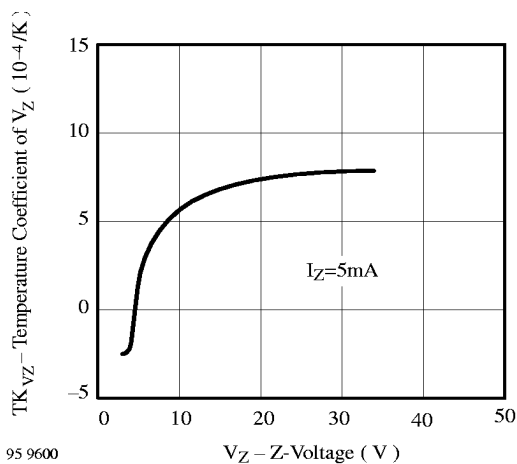
95 9599

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



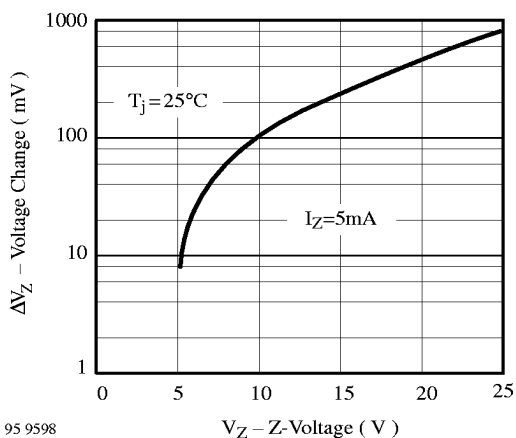
95 9602

Figure 2. Total Power Dissipation vs. Ambient Temperature



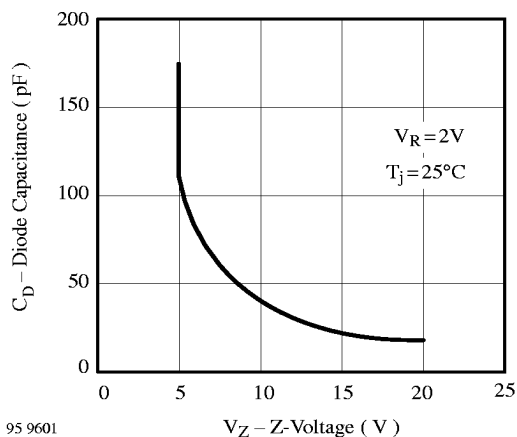
95 9600

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



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



95 9601

Figure 6. Diode Capacitance vs. Z -Voltage

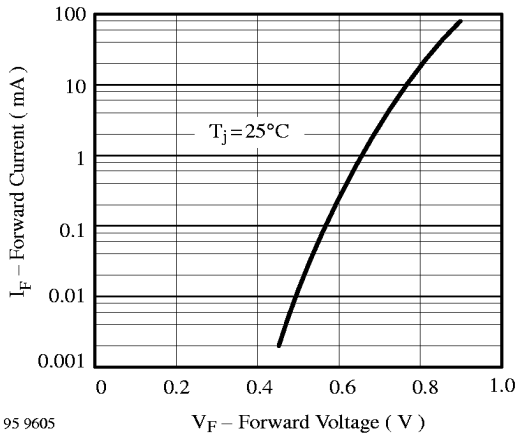


Figure 7. Forward Current vs. Forward Voltage

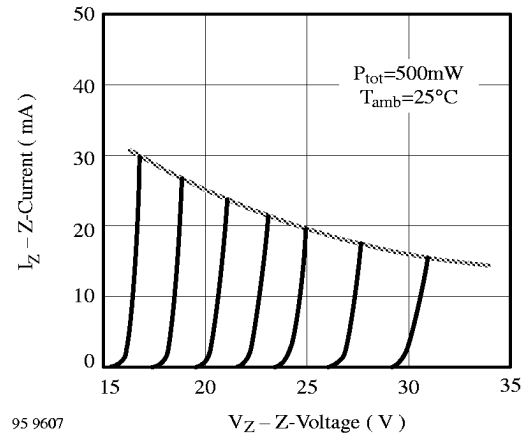


Figure 9. Z-Current vs. Z-Voltage

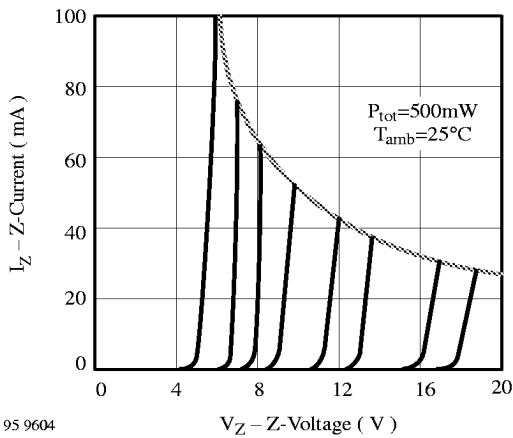


Figure 8. Z-Current vs. Z-Voltage

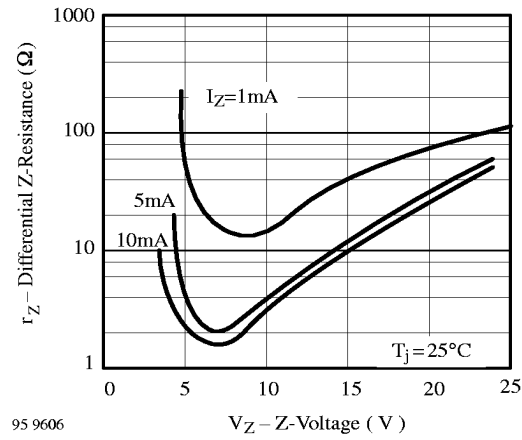


Figure 10. Differential Z-Resistance vs. Z-Voltage

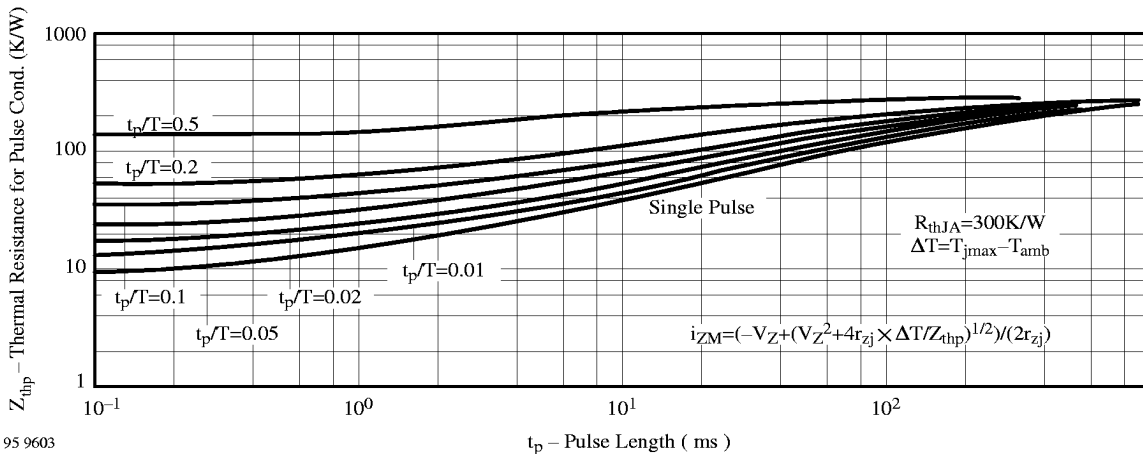


Figure 11. Thermal Response



Dimensions in mm


technical drawings
according to DIN
specifications

94 9366

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

