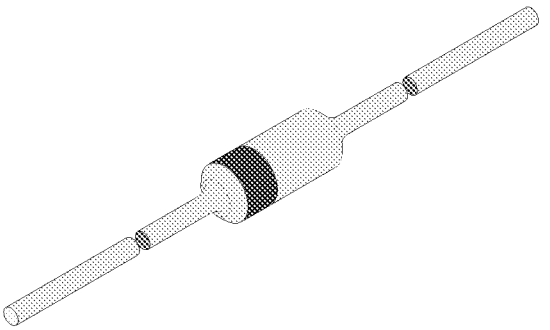
Silicon Epitaxial Planar Z–Diodes

Features

- Zener voltage specified at 50 A
- Maximum delta V_Z given from 10 A to 100 A
- Very high stability
- Low noise



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Applications

Voltage stabilization

Absolute Maximum Ratings

T_j = 25 C

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	l=4mm, 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=4mm, 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=100mA		V_F			1.5	V

Type [1]	Zener Voltage V_Z @ I_Z = 50 A			Max. Reverse Current	Test Voltage	Max. Zener Current	Max. Voltage Change
	Typ. [1]	Min.	Max.	I_R [3]	V_R [3]	I_{ZM} [2]	V_Z [4]
	V	V	V	A	V	mA	V
1N4678	1.8	1.710	1.890	7.5	1.0	120	0.70
1N4679	2.0	1.900	2.100	5.0	1.0	110	0.70
1N4680	2.2	2.090	2.310	4.0	1.0	100	0.75
1N4681	2.4	2.280	2.520	2.0	1.0	95	0.80
1N4682	2.7	2.565	2.835	1.0	1.0	90	0.85
1N4683	3.0	2.850	3.150	0.8	1.0	85	0.90
1N4684	3.3	3.135	3.465	7.5	1.5	80	0.95
1N4685	3.6	3.420	3.780	7.5	2.0	75	0.95
1N4686	3.9	3.705	4.095	5.0	2.0	70	0.97
1N4687	4.3	4.085	4.515	4.0	2.0	65	0.99
1N4688	4.7	4.465	4.935	10	3.0	60	0.99
1N4689	5.1	4.845	5.355	10	3.0	55	0.97
1N4690	5.6	5.320	5.880	10	4.0	50	0.96
1N4691	6.2	5.890	6.510	10	5.0	45	0.95
1N4692	6.8	6.460	7.140	10	5.1	35	0.90
1N4693	7.5	7.125	7.875	10	5.7	31.8	0.75
1N4694	8.2	7.790	8.610	1.0	6.2	29.0	0.50
1N4695	8.7	8.265	9.135	1.0	6.6	27.4	0.10
1N4696	9.1	8.645	9.555	1.0	6.9	26.2	0.08
1N4697	10	9.500	10.50	1.0	7.6	24.8	0.10
1N4698	11	10.45	11.55	0,05	8.4	21.6	0.11
1N4699	12	11.40	12.60	0.05	9.1	20.4	0.12
1N4700	13	12.35	13.65	0.05	9.8	19.0	0.13
1N4701	14	13.30	14.70	0.05	10.6	17.5	0.14
1N4702	15	14.25	15.75	0.05	11.4	16.3	0.15
1N4703	16	15.20	16.80	0.05	12.1	15.4	0.16
1N4704	17	16.15	17.85	0.05	12.9	14.5	0.17
1N4705	18	17.10	18.90	0.05	13.6	13.2	0.18
1N4706	19	18.05	19.95	0.05	14.4	12.5	0.19
1N4707	20	19.00	21.00	0.01	15.2	11.9	0.20
1N4708	22	20.90	23.10	0.01	16.7	10.8	0.22
1N4709	24	22.80	25.20	0.01	18.2	9.9	0.24
1N4710	25	23.75	26.25	0.01	19.0	9.5	0.25
1N4711	27	25.65	28.35	0.01	20.4	8.8	0.27
1N4712	28	26.60	29.40	0.01	21.2	8.5	0.28
1N4713	30	28.50	31.50	0.01	22.8	7.9	0.30
1N4714	33	31.35	34.65	0.01	25.0	7.2	0.33
1N4715	36	34.20	37.80	0.01	27.3	6.6	0.36
1N4716	39	37.05	40.95	0.01	29.6	6.1	0.39
1N4717	43	40.85	45.15	0.01	32.6	5.5	0.43

1.) Toleranzing and voltage designation (V_Z).
The type numbers shown have a standard tolerance of ± 5% on the nominal zener voltage.
2.) Maximum zener current ratings (I_{ZM}).
Maximum zener current ratings are based on maximum zener voltage of the individual units.
3.) Reverse leakage current (I_R).
Reverse leakage currents are guaranteed and measured at V_R as shown on the table.
4.) Maximum voltage change (V_Z).
Voltage change is equal to the difference between V_Z at 100 A and V_Z at 10 A.

Characteristics (T_j = 25 C unless otherwise specified)

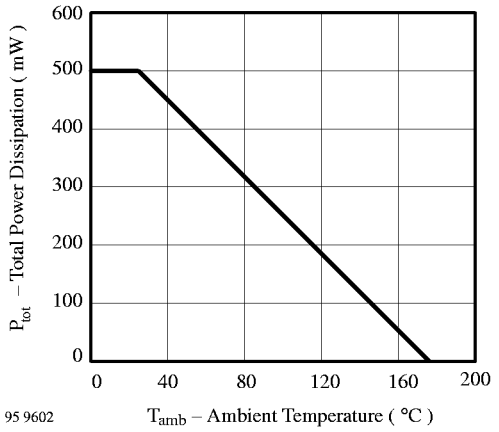


Figure 1. Total Power Dissipation vs. Ambient Temperature

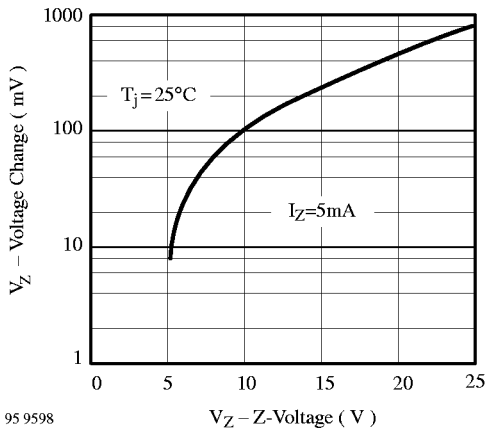


Figure 2. Typical Change of Working Voltage under Operating Conditions at T_{amb}=25 C

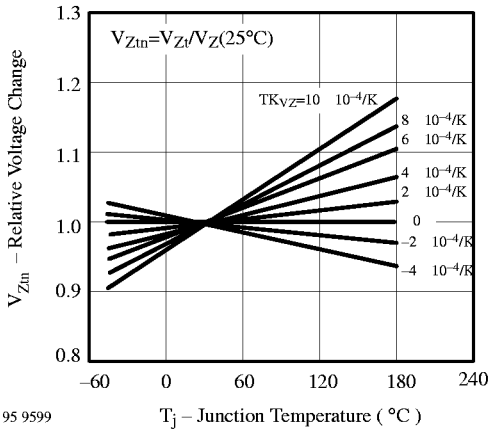


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

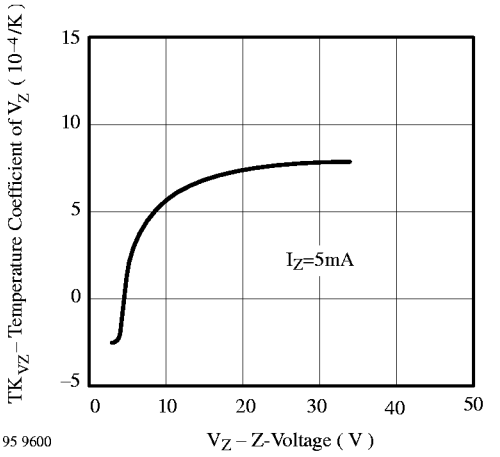


Figure 4. Temperature Coefficient of Vz vs. Z–Voltage

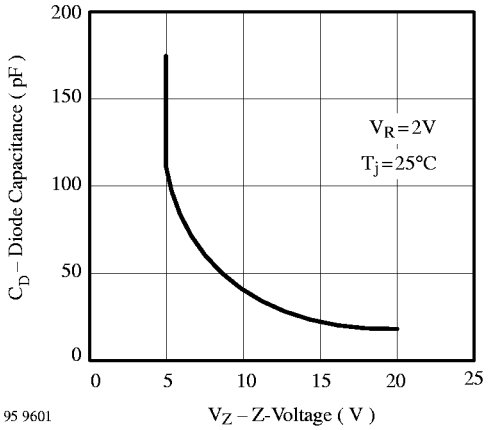


Figure 5. Diode Capacitance vs. Z–Voltage

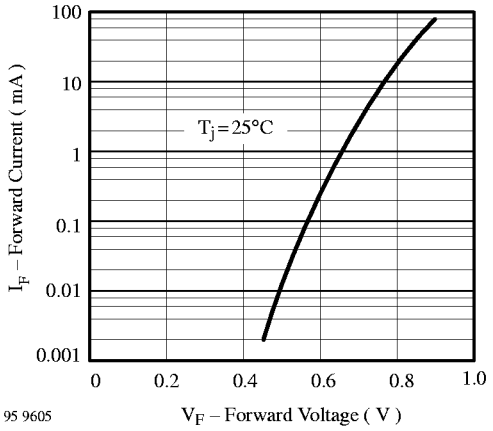


Figure 6. Forward Current vs. Forward Voltage

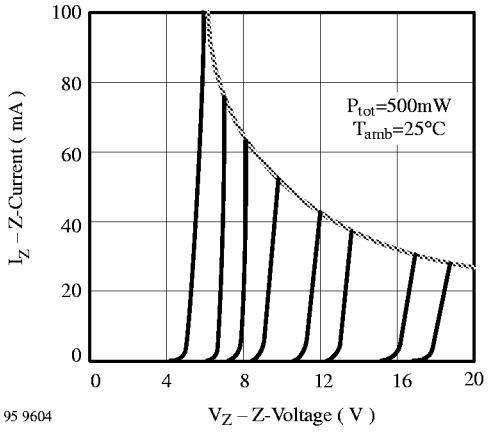


Figure 7. Z–Current vs. Z–Voltage

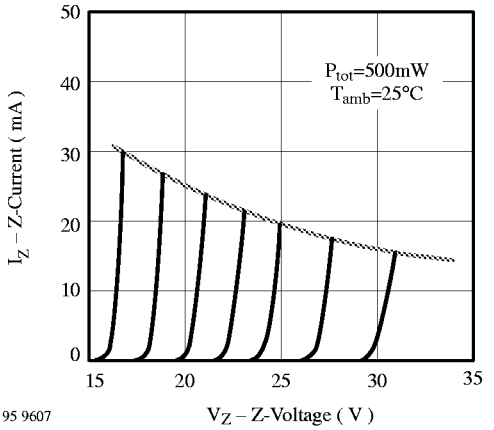


Figure 8. Z–Current vs. Z–Voltage

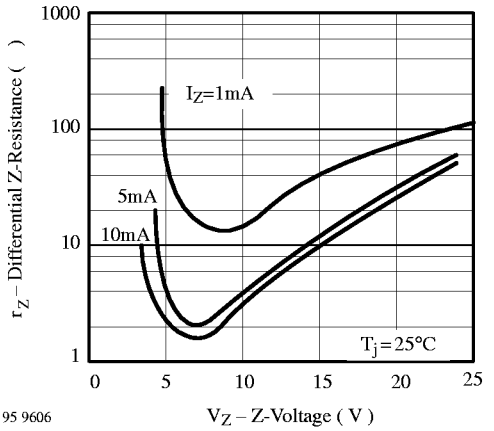


Figure 9. Differential Z–Resistance vs. Z–Voltage

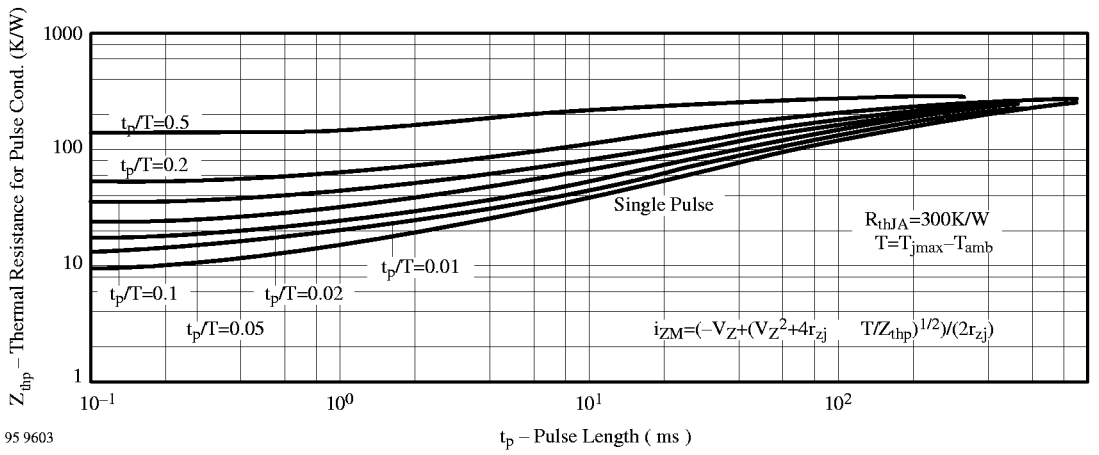
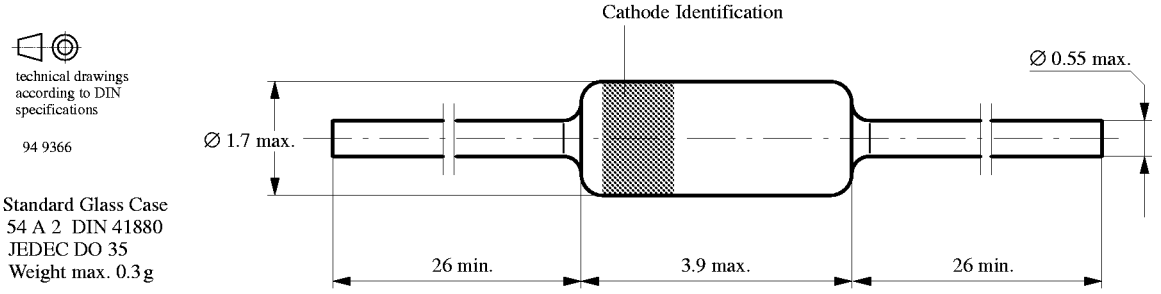


Figure 10. Thermal Response

Dimensions in mm



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