

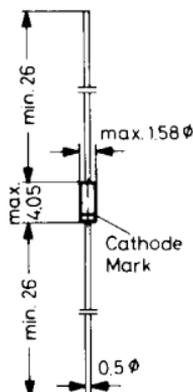
ZPD 1... ZPD 51 (500 mW, 5%)

Silicon Planar Zener Diodes

The Zener voltages are graded according to the international E 24 standard (tolerance $\pm 5\%$). Smaller voltage tolerances and higher Zener voltages on request.

Glass case DO-35
54 A 2 according to DIN 41880
Weight approx. 0.13 g
Dimensions in mm

These diodes are delivered taped.
Details see „Taping“.



Maximum Ratings

Zener current see table on next page

Power dissipation @ $T_{amb} = 25^\circ\text{C}$	P_{tot}	500 ²⁾	mW
Junction temperature	T_j	175	$^\circ\text{C}$
Storage temperature range	T_S	-55...+175	$^\circ\text{C}$

Characteristics @ $T_{amb} = 25^\circ\text{C}$

Thermal resistance junction to ambient air	R_{thA}	<0.3 ²⁾	$^\circ\text{C}/\text{mW}$
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1) tested with pulses

2) Valid provided that the leads are kept at ambient temperature at a distance of 8 mm from case.

3) The ZPD 1 is a silicon diode with operation in forward direction. Hence, the index of all parameters should be "F" instead of "Z". Connect the cathode lead to the negative pole.

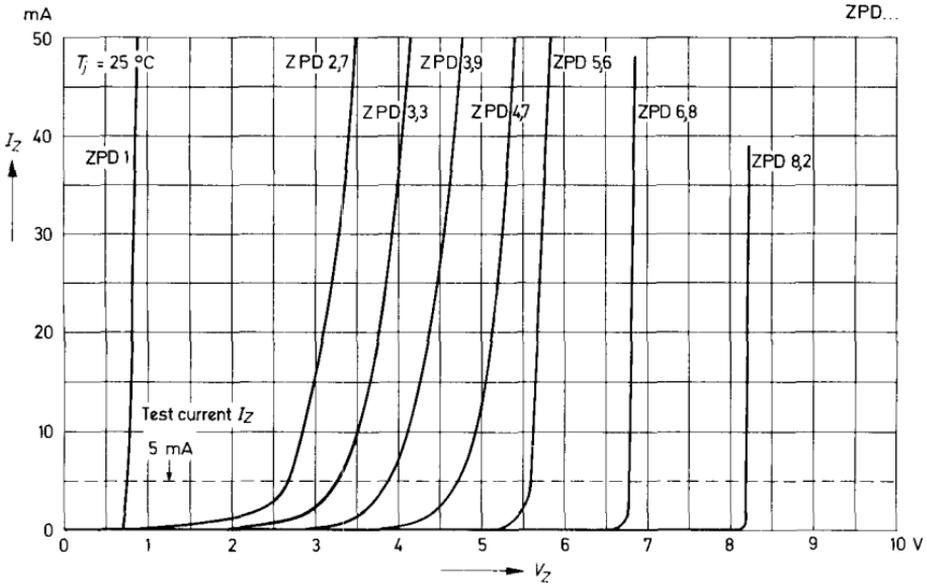
ZPD 1... ZPD 51 (500 mW, 5%)

Type	Zener voltage 1) @ $I_Z = 5 \text{ mA}$	Dynamic resistance		Temp. coeff. of Zener volt. @ $I_Z = 5 \text{ mA}$	Reverse voltage @ $I_R = 100 \text{ nA}$ $V_R \text{ V}$	Admissible Zener current 2)	
	$V_Z \text{ V}$	@ $I_Z = 5 \text{ mA}$ $f = 1 \text{ kHz}$ $r_{zj} \Omega$	@ $I_Z = 1 \text{ mA}$ $f = 1 \text{ kHz}$ $r_{zj} \Omega$	@ $I_Z = 5 \text{ mA}$ $\alpha_{VZ} 10^{-4}/^\circ\text{C}$		@ $T_{amb} = 45^\circ\text{C}$ $I_Z \text{ mA}$	@ $T_{amb} = 25^\circ\text{C}$ $I_Z \text{ mA}$
ZPD 1 ³⁾	0.7...0.8	6.5 (<8)	<50	-26...-23	-	280	340
ZPD 2,7	2.5...2.9	75 (<83)	<500	-9...-4	-	135	160
ZPD 3	2.8...3.2	80 (<95)	<500	-9...-3	-	117	140
ZPD 3,3	3.1...3.5	80 (<95)	<500	-8...-3	-	109	130
ZPD 3,6	3.4...3.8	80 (<95)	<500	-8...-3	-	101	120
ZPD 3,9	3.7...4.1	80 (<95)	<500	-7...-3	-	92	110
ZPD 4,3	4.0...4.6	80 (<95)	<500	-6...-1	-	85	100
ZPD 4,7	4.4...5.0	70 (<78)	<500	-5...+2	-	76	90
ZPD 5,1	4.8...5.4	30 (<60)	<480	-3...+4	>0.8	67	80
ZPD 5,6	5.2...6.0	10 (<40)	<400	-2...+6	>1	59	70
ZPD 6,2	5.8...6.6	4.8 (<10)	<200	-1...+7	>2	54	64
ZPD 6,8	6.4...7.2	4.5 (<8)	<150	+2...+7	>3	49	58
ZPD 7,5	7.0...7.9	4 (<7)	<50	+3...+7	>5	44	53
ZPD 8,2	7.7...8.7	4.5 (<7)	<50	+4...+7	>6	40	47
ZPD 9,1	8.5...9.6	4.8 (<10)	<50	+5...+8	>7	36	43
ZPD 10	9.4...10.6	5.2 (<15)	<70	+5...+8	>7.5	33	40
ZPD 11	10.4...11.6	6 (<20)	<70	+5...+9	>8.5	30	36
ZPD 12	11.4...12.7	7 (<20)	<90	+6...+9	>9	28	32
ZPD 13	12.4...14.1	9 (<25)	<110	+7...+9	>10	25	29
ZPD 15	13.8...15.6	11 (<30)	<110	+7...+9	>11	23	27
ZPD 16	15.3...17.1	13 (<40)	<170	+8...+9.5	>12	20	24
ZPD 18	16.8...19.1	18 (<50)	<170	+8...+9.5	>14	18	21
ZPD 20	18.8...21.2	20 (<50)	<220	+8...+10	>15	17	20
ZPD 22	20.8...23.3	25 (<55)	<220	+8...+10	>17	16	18
ZPD 24	22.8...25.6	28 (<80)	<220	+8...+10	>18	13	16
ZPD 27	25.1...28.9	30 (<80)	<250	+8...+10	>20	12	14
ZPD 30	28...32	35 (<80)	<250	+8...+10	>22.5	10	13
ZPD 33	31...35	40 (<80)	<250	+8...+10	>25	9	12
ZPD 36	34...38	40 (<90)	<250	+8...+10	>27	9	11
ZPD 39	37...41	50 (<90)	<300	+10...+12	>29	8	10
ZPD 43	40...46	60 (<100)	<700	+10...+12	>32	7	9
ZPD 47	44...50	70 (<100)	<750	+10...+12	>35	6	8
ZPD 51	48...54	70 (<100)	<750	+10...+12	>38	6	8

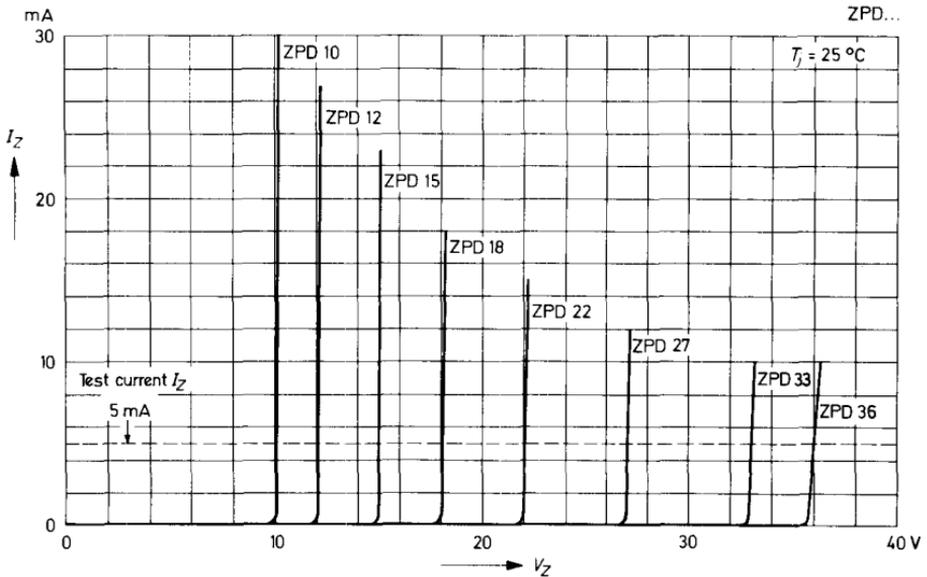
Notes see previous page.

ZPD 1 ... ZPD 51 (500 mW, 5%)

Breakdown characteristics @ $T_j = \text{constant}$ (pulsed)



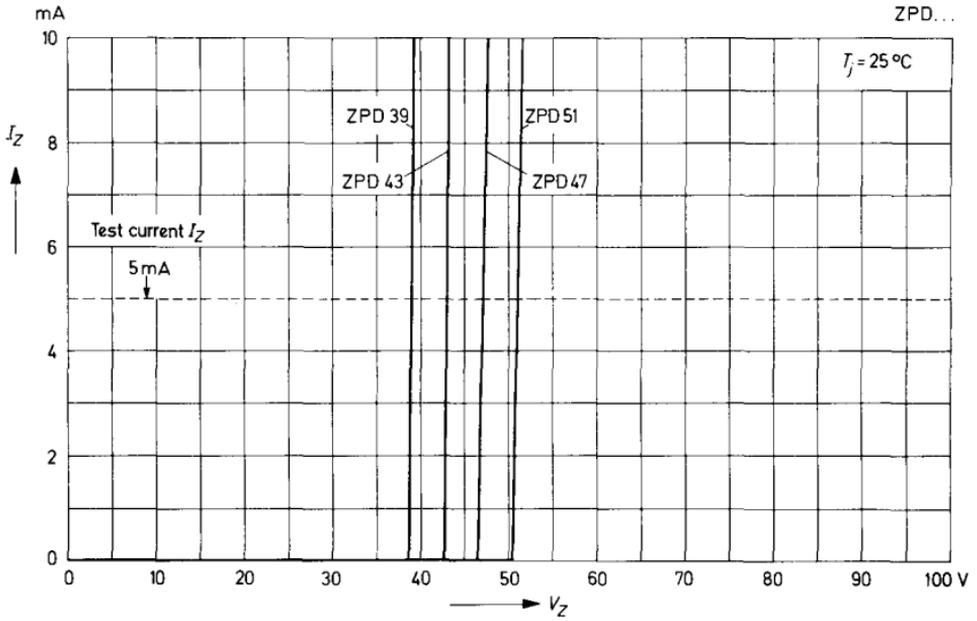
Breakdown characteristics @ $T_j = \text{constant}$ (pulsed)



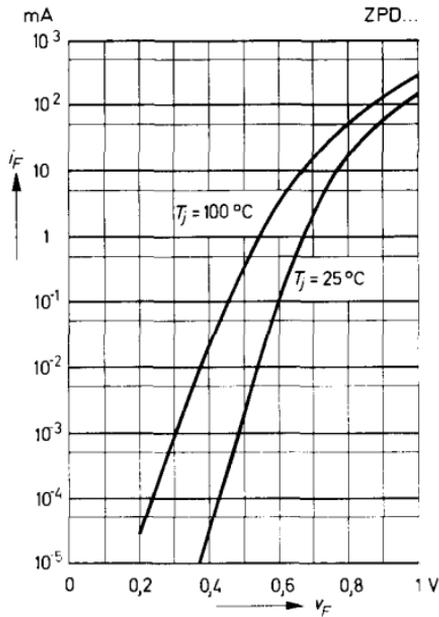
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Breakdown characteristics

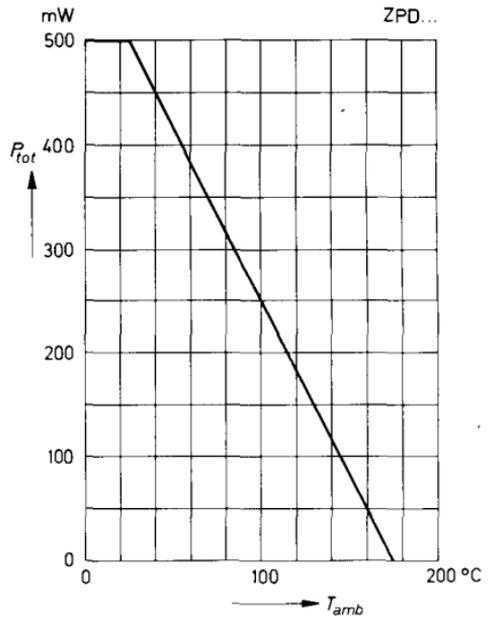
@ $T_j = \text{constant}$ (pulsed)



Forward characteristics

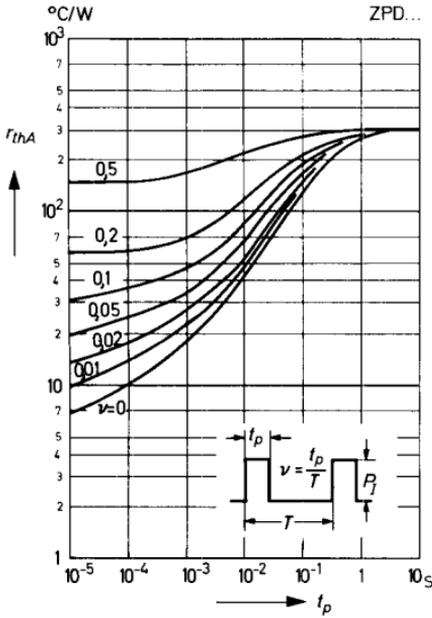


Admissible power dissipation versus ambient temperature (see note 2) on page 142)

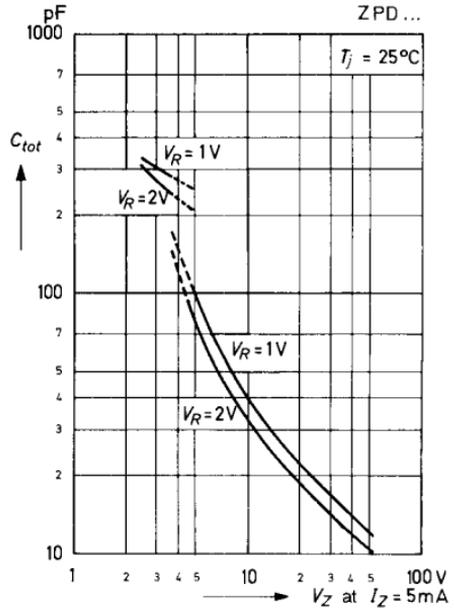


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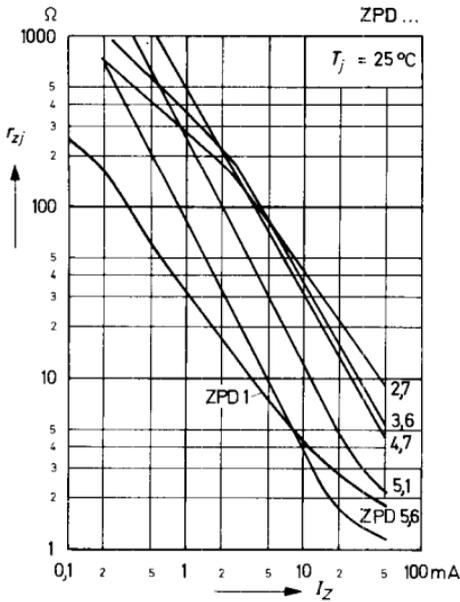
Pulse thermal resistance versus pulse duration
(see note 2) on page 142)



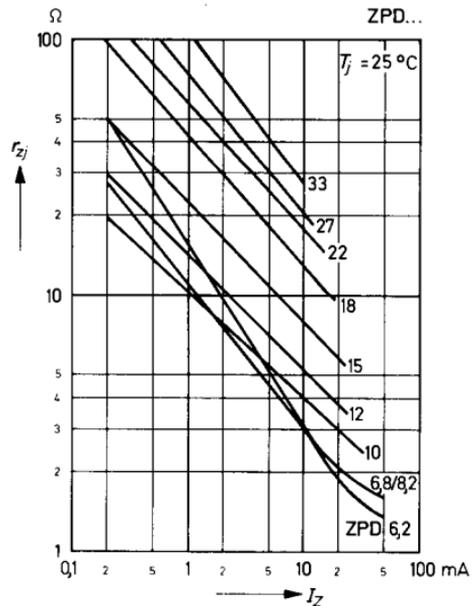
Capacitance versus Zener voltage



Dynamic resistance versus Zener current

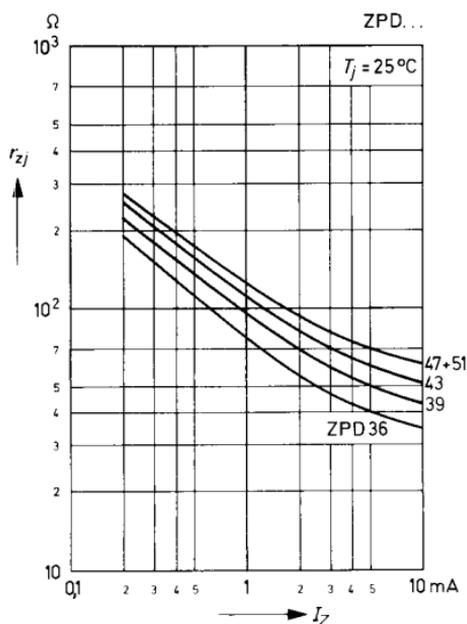


Dynamic resistance versus Zener current

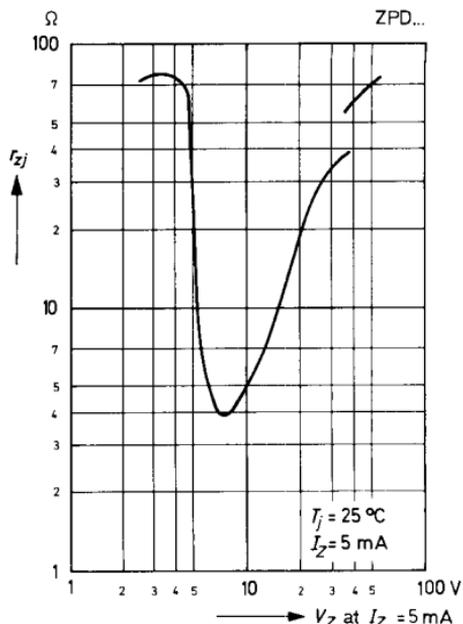


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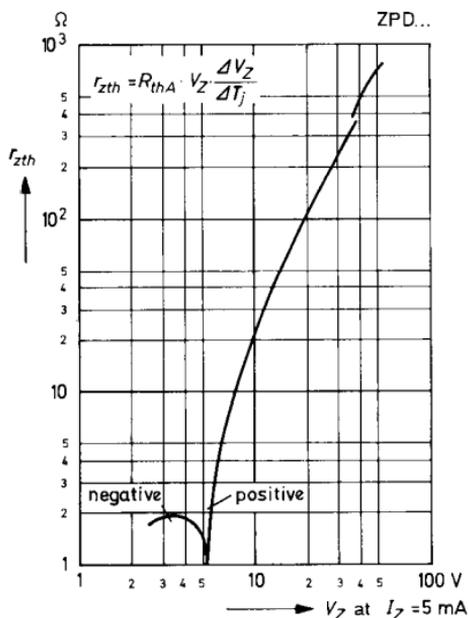
Dynamic resistance versus Zener current



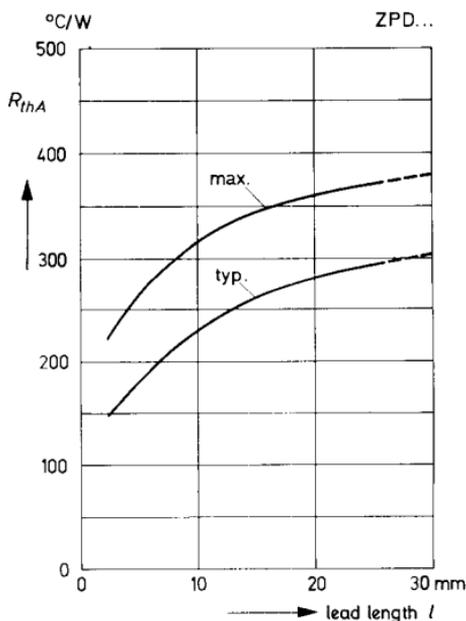
Dynamic resistance versus Zener voltage



Thermal differential resistance versus Zener voltage
 (see note 2) on page 142)

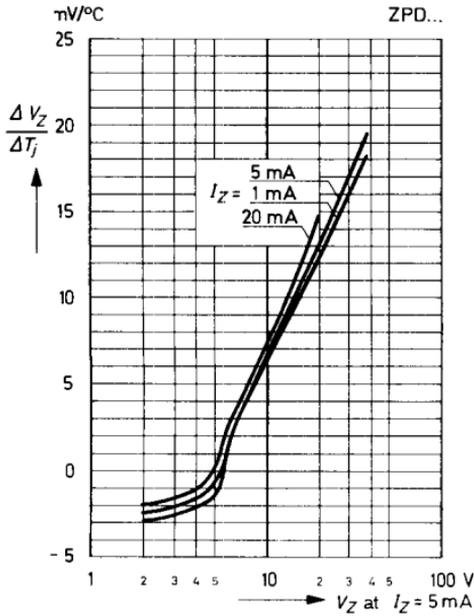


Thermal resistance versus lead length

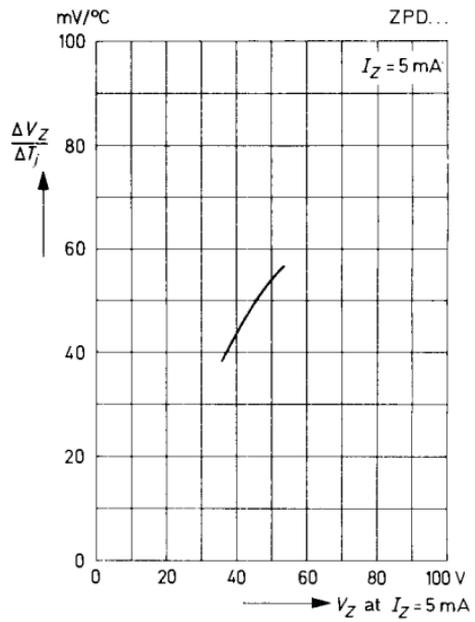


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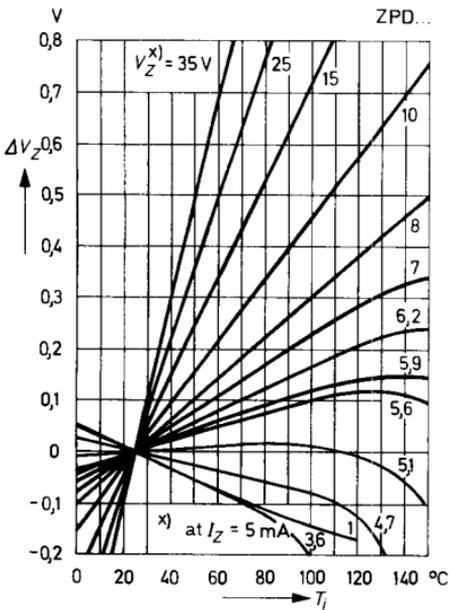
Temperature dependence of Zener voltage versus Zener voltage



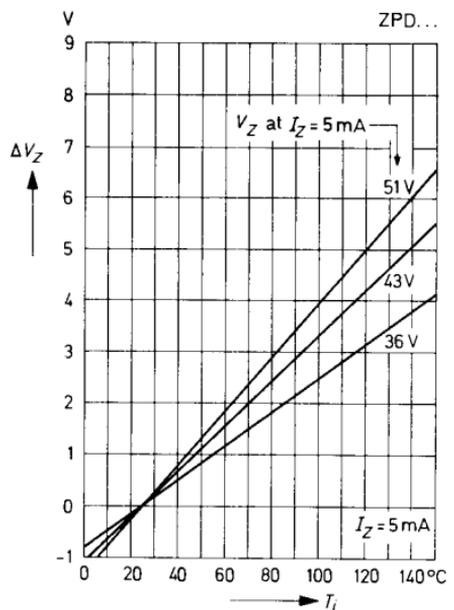
Temperature dependence of Zener voltage versus Zener voltage



Change of Zener voltage versus junction temperature

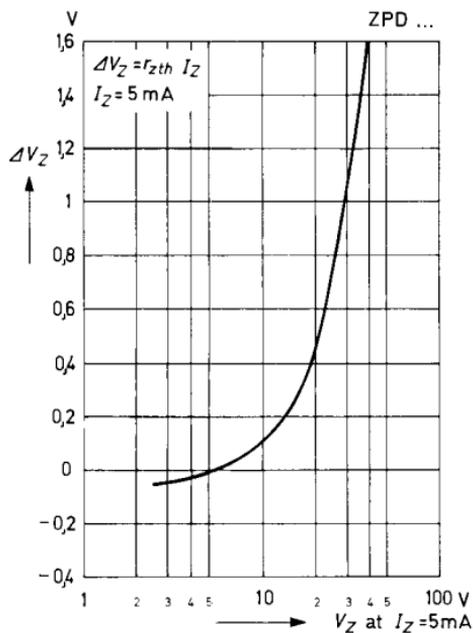


Change of Zener voltage versus junction temperature



ZPD 1 ... ZPD 51 (500 mW, 5%)

Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage



Change of Zener voltage from turn-on up to the point of thermal equilibrium versus Zener voltage

