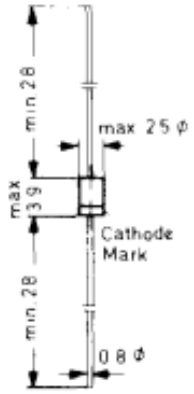
ZPY 1 ... ZPY 100 (1.3 W, 5%)

Silicon Planar Power Zener Diodes
for use in stabilizing and clipping circuits with high power rating. The Zener voltages are graded according to the international E 24 standard (tolerance ±5%). Smaller voltage tolerances on request.



Glass case JEDEC DO-41
54 B 2 according to DIN 41880
Weight approx. 0.35 g
Dimensions in mm

These diodes are delivered taped.
Details see "Taping".

Maximum Ratings

Zener current see table

Power dissipation @ T_{amb} = 25 °C	P_{tot}	1.3 [1]	W
Junction temperature	T_j	200	°C
Storage temperature range	T_S	−55...+200	°C

Characteristics @ T_{amb} = 25 °C

Thermal resistance junction to ambient air	R_{thA}	<130 [1]	°C/W

Type	Zener voltage [2] @ $I_{Z\,test}$ V_Z V	Dynamic resistance @ I_{Ztest} f = 1 kHz r_{zj} Ω	Temp. coeff. of Zener volt. @ $I_{Z\,test}$ α_{VZ} 10^{-4}/°C	Test current $I_{Z\,test}$ mA	Reverse voltage @ I_R = 0.5 µA V_R V	Admissible Zener current [1] @ T_{amb} = 45 °C I_Z mA
ZPY 1 [3]	0.65...0.75	6.5 (<8)	−26...−23	5	–	580
ZPY 3,9	3.7...4.1	4 (<7)	−7...+2	100	–	290
ZPY 4,3	4.0...4.6	4 (<7)	−7...+3	100	–	260
ZPY 4,7	4.4...5.0	4 (<7)	−7...+4	100	–	235
ZPY 5,1	4.8...5.4	2 (<5)	−6...+5	100	>0.7	215
ZPY 5,6	5.2...6.0	1 (<2)	−3...+5	100	>1.5	193
ZPY 6,2	5.8...6.6	1 (<2)	−1...+6	100	>2.0	183
ZPY 6,8	6.4...7.2	1 (<2)	0...+7	100	>3.0	157
ZPY 7,5	7.0...7.9	1 (<2)	0...+7	100	>5.0	143
ZPY 8,2	7.7...8.7	1 (<2)	+3...+8	100	>6.0	127

Notes see next page

ZPY 1 ... ZPY 100 (1.3 W, 5%)

Type	Zener voltage [2] @ $I_{Z\,test}$ V_Z V	Dynamic resistance @ $I_{Z\,test}$ $f = 1$ kHz r_{zj} Ω	Temp. coeff. of Zener volt. @ $I_{Z\,test}$ α_{VZ} $10^{-4}/°C$	Test current $I_{Z\,test}$ mA	Reverse voltage @ $I_R = 0.5\,\mu A$ V_R V	Admissible Zener current [1] @ $T_{amb} = 45\,°C$ I_Z mA
ZPY 9,1	8.5...9.6	2 (<4)	+3...+8	50	>7.0	117
ZPY 10	9.4...10.6	2 (<4)	+5...+9	50	>7.5	105
ZPY 11	10.4...11.6	3 (<7)	+5...+10	50	>8.5	94
ZPY 12	11.4...12.7	3 (<7)	+5...+10	50	>9.0	85
ZPY 13	12.4...14.1	4 (<9)	+5...+10	50	>10	78
ZPY 15	13.8...15.8	4 (<9)	+5...+10	50	>11	70
ZPY 16	15.3...17.1	5 (<10)	+7...+11	25	>12	63
ZPY 18	16.8...19.1	5 (<11)	+7...+11	25	>14	57
ZPY 20	18.8...21.2	6 (<12)	+7...+11	25	>15	52
ZPY 22	20.8...23.3	7 (<13)	+7...+11	25	>17	48
ZPY 24	22.8...25.6	8 (<14)	+7...+12	25	>18	42
ZPY 27	25.1...28.9	9 (<15)	+7...+12	25	>20	38
ZPY 30	28...32	10 (<20)	+7...+12	25	>22.5	35
ZPY 33	31...35	11 (<20)	+7...+12	25	>25	31
ZPY 36	34...38	25 (<60)	+7...+12	10	>27	29
ZPY 39	37...41	30 (<60)	+8...+12	10	>29	26
ZPY 43	40...46	35 (<80)	+8...+13	10	>32	24
ZPY 47	44...50	40 (<80)	+8...+13	10	>35	22
ZPY 51	48...54	45 (<100)	+8...+13	10	>38	20
ZPY 56	52...60	50 (<100)	+8...+13	10	>42	18
ZPY 62	58...66	60 (<130)	+8...+13	10	>47	16
ZPY 68	64...72	65 (<130)	+8...+13	10	>51	14
ZPY 75	70...79	70 (<160)	+8...+13	10	>56	13
ZPY 82	77...88	80 (<160)	+8...+13	10	>61	12
ZPY 91	85...96	120 (<250)	+9...+13	5	>68	11
ZPY 100	94...106	130 (<250)	+9...+13	5	>75	10

For devices in glass case DO-41 with higher Zener voltage but same power dissipation see types ZPU 100...ZPU 180.

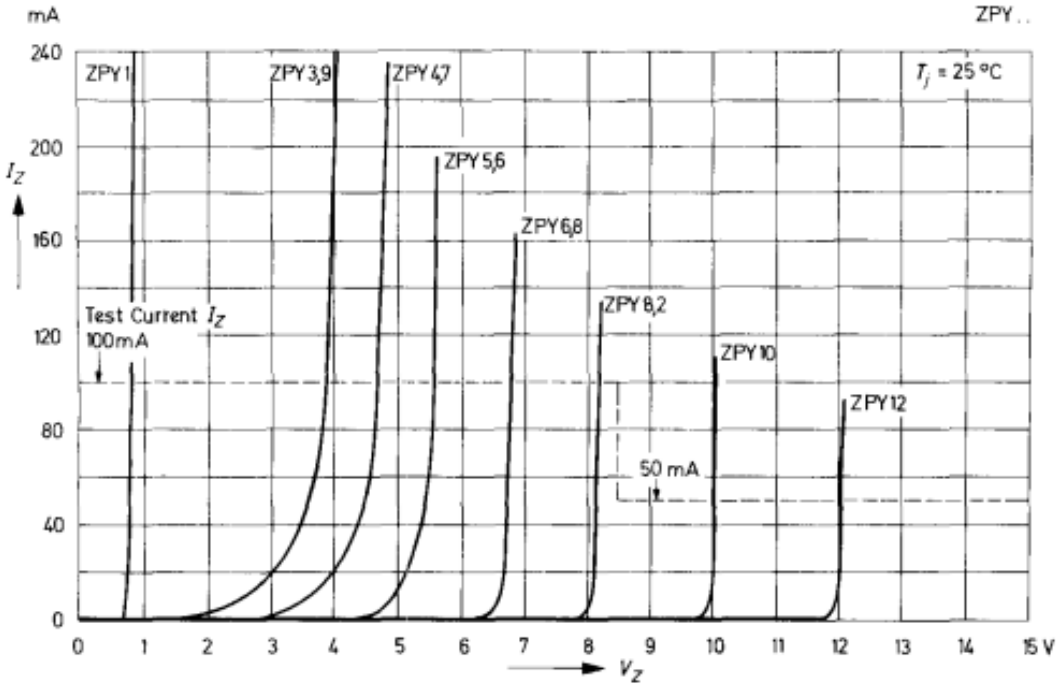
1) Valid provided that leads are kept at ambient temperature at a distance of 10 mm from case.

2) tested with pulses

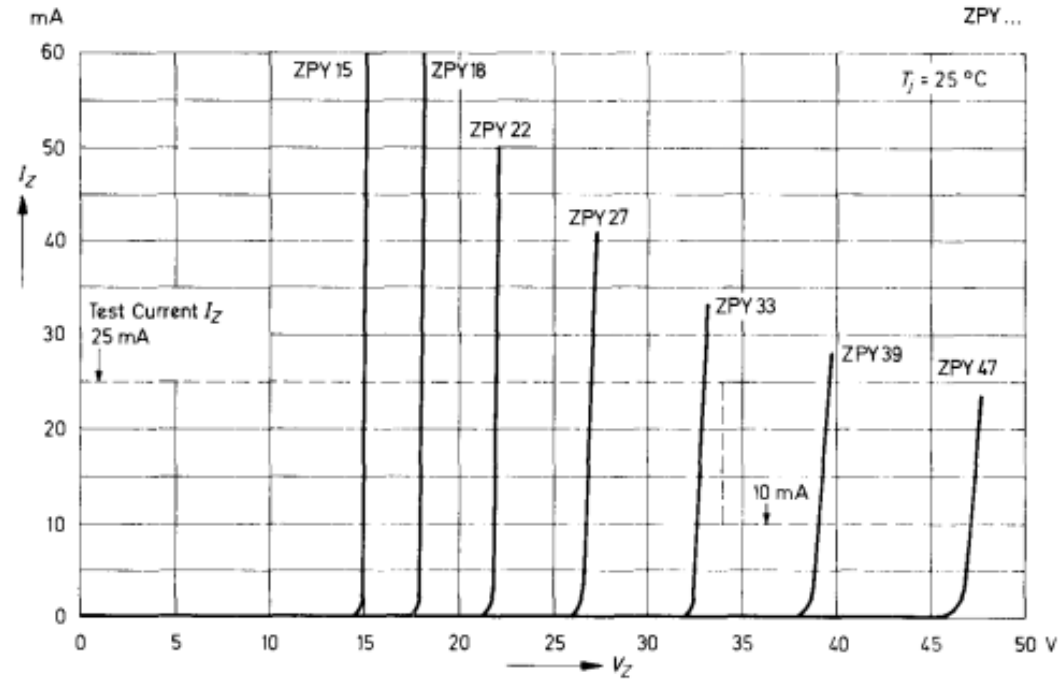
3) The ZPY 1 is a silicon diode operated in forward direction. Hence, the in dex of all characteristics and maximum ratings should be "F" instead of "Z". Connect the cathode terminal to negative pole.

ZPY 1 ... ZPY 100 (1.3 W, 5%)

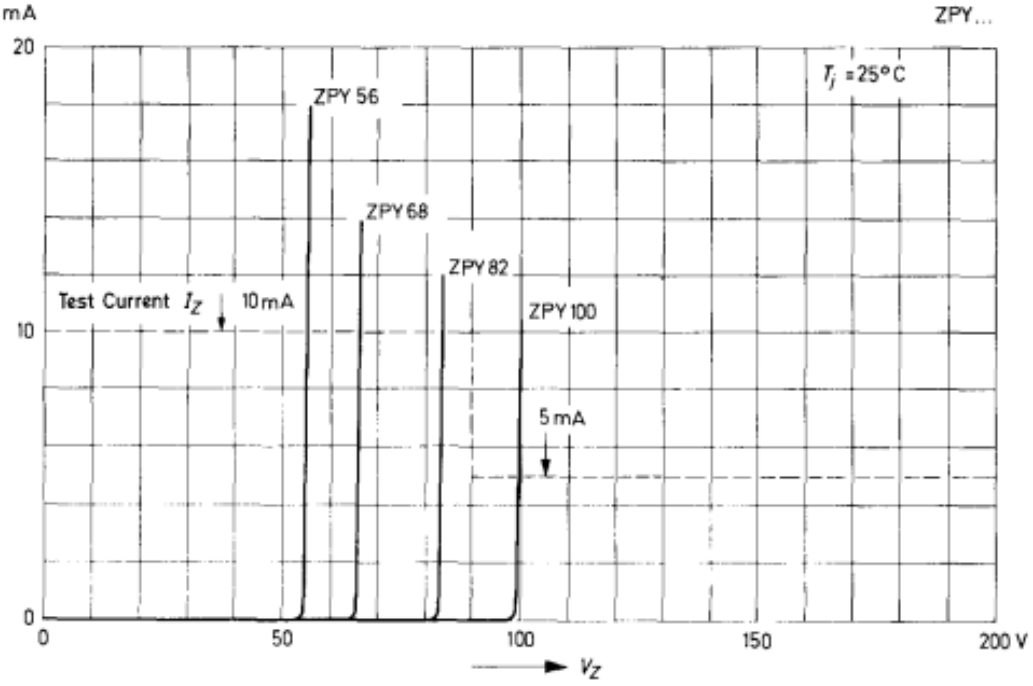
Breakdown characteristics
@ T_j = constant (pulsed)



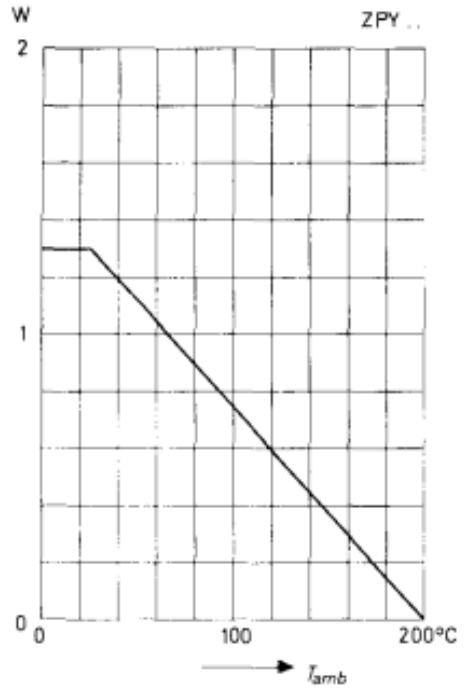
Breakdown characteristics
@ T_j = constant (pulsed)



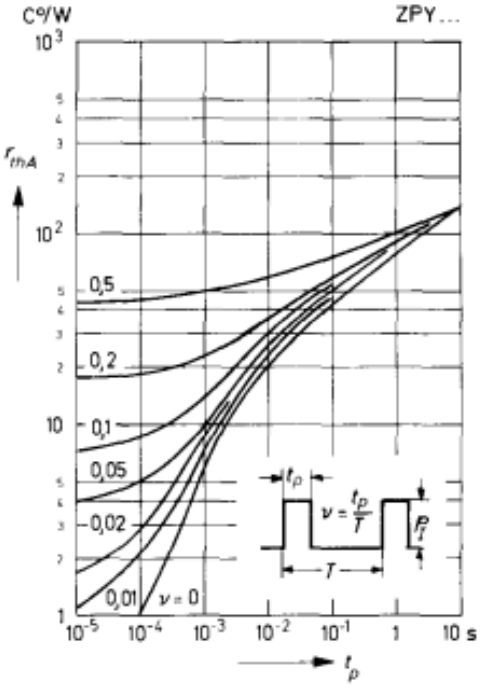
Breakdown characteristics
@ T_j = constant (pulsed)



Admissible power dissipation versus ambient temperature
(see note [1]) on page 171)

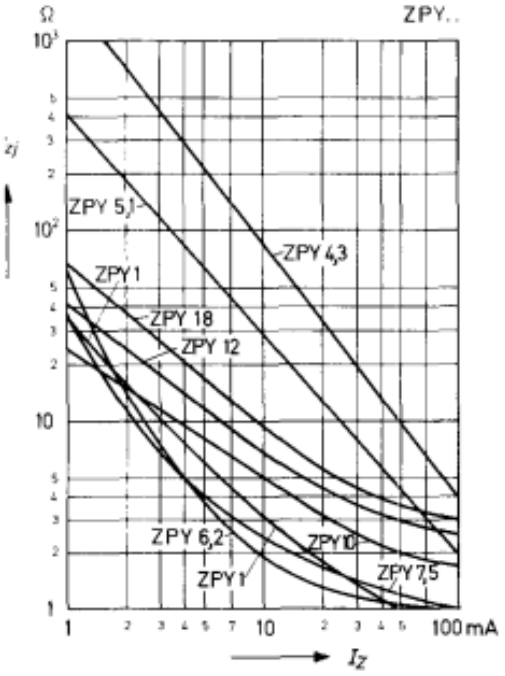


Pulse thermal resistance versus pulse duration
(see note [1]) on page 171)

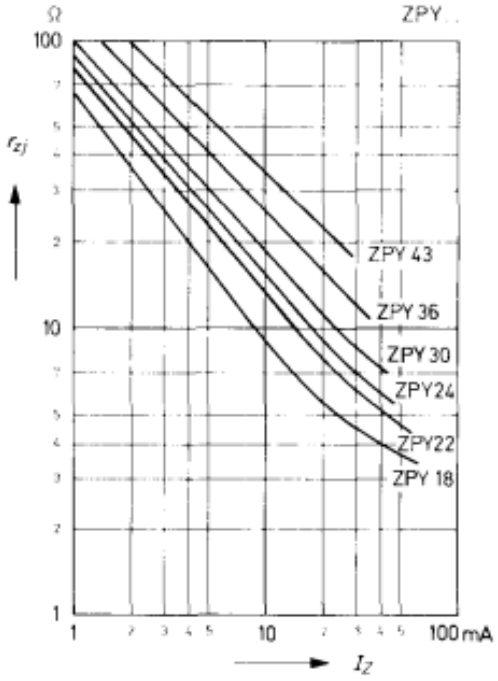


ZPY 1 ... ZPY 100 (1.3 W, 5%)

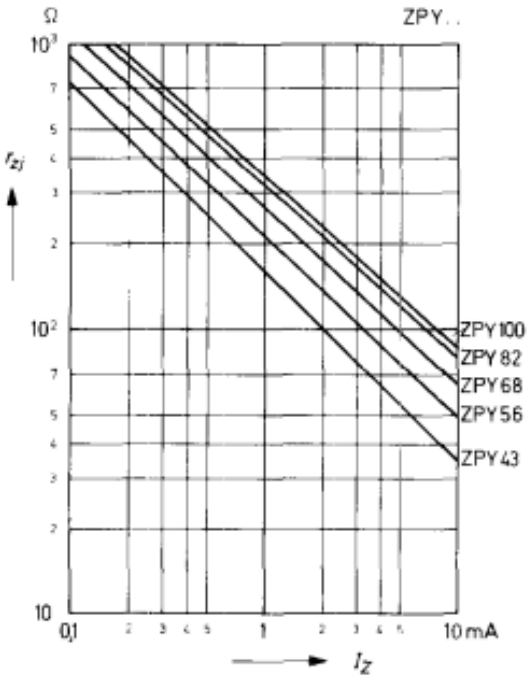
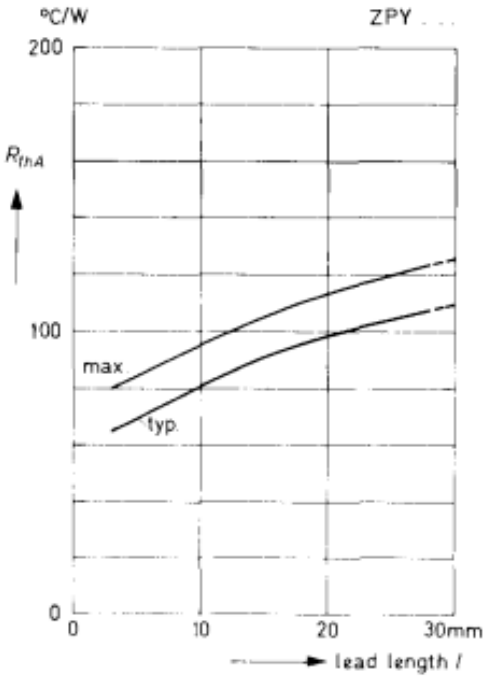
Dynamic resistance versus Zener current



Dynamic resistance versus Zener current



Dynamic resistance versus Zener current



Thermal resistance versus lead length