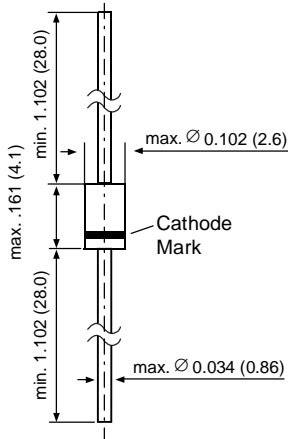


# ZPY1 THRU ZPY100

## ZENER DIODES

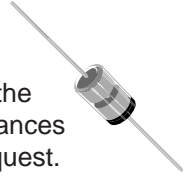
### DO-41 Glass



Dimensions are in inches and (millimeters)

### FEATURES

- ◆ 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 E12 standard. Smaller voltage tolerances and other Zener voltages are available upon request.
- ◆ These diode are also available in the MELF case with type designation ZMY1 ... ZMY100.



### MECHANICAL DATA

Case: DO-41 Glass Case

Weight: approx. 0.35 g

### MAXIMUM RATINGS

Ratings at 25°C ambient temperature unless otherwise specified.

	SYMBOL	VALUE	UNIT
Zener Current (see Table "Characteristics")			
Power Dissipation at $T_{amb} = 25^{\circ}\text{C}$	$P_{tot}$	1.3 <sup>1)</sup>	Watts
Junction Temperature	$T_j$	175	$^{\circ}\text{C}$
Storage Temperature Range	$T_s$	- 55 to +175	$^{\circ}\text{C}$

	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance Junction to Ambient Air	$R_{thJA}$	-	-	130 <sup>1)</sup>	$^{\circ}\text{C}/\text{W}$

NOTES:

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

# ZPY1 THRU ZPY100

## ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Type	Zener voltage <sup>(2)</sup> at I <sub>ZT</sub> V <sub>Z</sub> (V)	Dynamic resistance at I <sub>ZT</sub> f = 1 kHz max r <sub>zj</sub> (Ω)	Temp. coeff. of Zener volt. at I <sub>ZT</sub> α <sub>VZ</sub> (10 <sup>-4</sup> /K)	Test current I <sub>ZT</sub> (mA)	Reverse voltage at I <sub>R</sub> = 0.5μA V <sub>R</sub> (V)	Admissible Zener current <sup>(1)</sup> at T <sub>amb</sub> = 25°C I <sub>Z</sub> (mA)
ZPY1 <sup>(3)</sup>	0.65 ... 0.75	6.5 (< 8)	- 26 ... - 23	5	-	580
ZPY3.9	3.7 ... 4.1	4 (< 7)	- 7 ... +2	100	-	290
ZPY4.3	4.0 ... 4.6	4 (< 7)	- 7 ... +3	100	-	260
ZPY4.7	4.4 ... 5.0	4 (< 7)	- 7 ... +4	100	-	235
ZPY5.1	4.8 ... 5.4	2 (< 5)	- 6 ... +5	100	> 0.7	215
ZPY5.6	5.2 ... 6.0	1 (< 2)	- 3 ... +5	100	> 1.5	193
ZPY6.2	5.8 ... 6.6	1 (< 2)	- 1 ... +6	100	> 2.0	183
ZPY6.8	6.4 ... 7.2	1 (< 2)	0 ... +7	100	> 3.0	157
ZPY7.5	7.0 ... 7.9	1 (< 2)	0 ... +7	100	> 5.0	143
ZPY8.2	7.7 ... 8.7	1 (< 2)	+3 ... +8	100	> 6.0	127
ZPY9.1	8.5 ... 9.6	2 (< 4)	+3 ... +8	50	> 7.0	117
ZPY10	9.4 ... 10.6	2 (< 4)	+5 ... +9	50	> 7.5	105
ZPY11	10.4 ... 11.6	3 (< 7)	+5 ... +10	50	> 8.5	94
ZPY12	11.4 ... 12.7	3 (< 7)	+5 ... +10	50	> 9.0	85
ZPY13	12.4 ... 14.1	4 (< 9)	+5 ... +10	50	> 10	78
ZPY15	13.8 ... 15.8	4 (< 9)	+5 ... +10	50	> 11	70
ZPY16	15.3 ... 17.1	5 (< 10)	+7 ... +11	25	> 12	63
ZPY18	16.8 ... 19.1	5 (< 11)	+7 ... +11	25	> 14	57
ZPY20	18.8 ... 21.2	6 (< 12)	+7 ... +11	25	> 15	52
ZPY22	20.8 ... 23.3	7 (< 13)	+7 ... +11	25	> 17	48
ZPY24	22.8 ... 25.6	8 (< 14)	+7 ... +12	25	> 18	42
ZPY27	25.1 ... 28.9	9 (< 15)	+7 ... +12	25	> 20	38
ZPY30	28 ... 32	10 (< 20)	+7 ... +12	25	> 22.5	35
ZPY33	31 ... 35	11 (< 20)	+7 ... +12	25	> 25	31
ZPY36	34 ... 38	25 (< 60)	+7 ... +12	10	> 27	29
ZPY39	37 ... 41	30 (< 60)	+8 ... +12	10	> 29	26
ZPY43	40 ... 46	35 (< 80)	+8 ... +13	10	> 32	24
ZPY47	44 ... 50	40 (< 80)	+8 ... +13	10	> 35	22
ZPY51	48 ... 54	45 (< 100)	+8 ... +13	10	> 38	20
ZPY56	52 ... 60	50 (< 100)	+8 ... +13	10	> 42	18
ZPY62	58 ... 66	60 (< 130)	+8 ... +13	10	> 47	16
ZPY68	64 ... 72	65 (< 130)	+8 ... +13	10	> 51	14
ZPY75	70 ... 79	70 (< 160)	+8 ... +13	10	> 56	13
ZPY82	77 ... 88	80 (< 160)	+8 ... +13	10	> 61	12
ZPY91	85 ... 96	120 (< 250)	+9 ... +13	5	> 68	11
ZPY100	94 ... 106	130 (< 250)	+9 ... +13	5	> 75	10

### NOTES:

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

(2) Tested with pulses t<sub>p</sub> = 5 ms

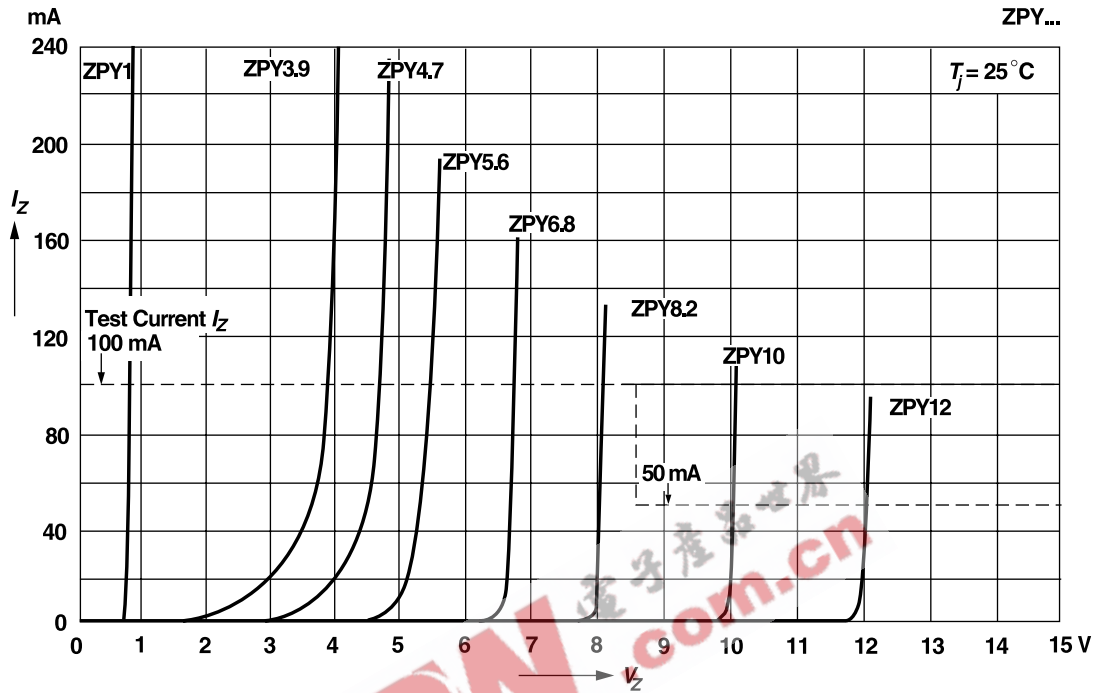
(3) The ZPY1 is a silicon diode operated in forward direction. Hence, the index of all characteristics and maximum ratings should be "F" instead of "Z"  
Connect the cathode terminal to the negative pole

For devices in glass case DO-41 with higher Zener voltage but same power dissipation see types ZPU100 ... ZPU180

# RATINGS AND CHARACTERISTIC CURVES ZPY1 THRU ZPY100

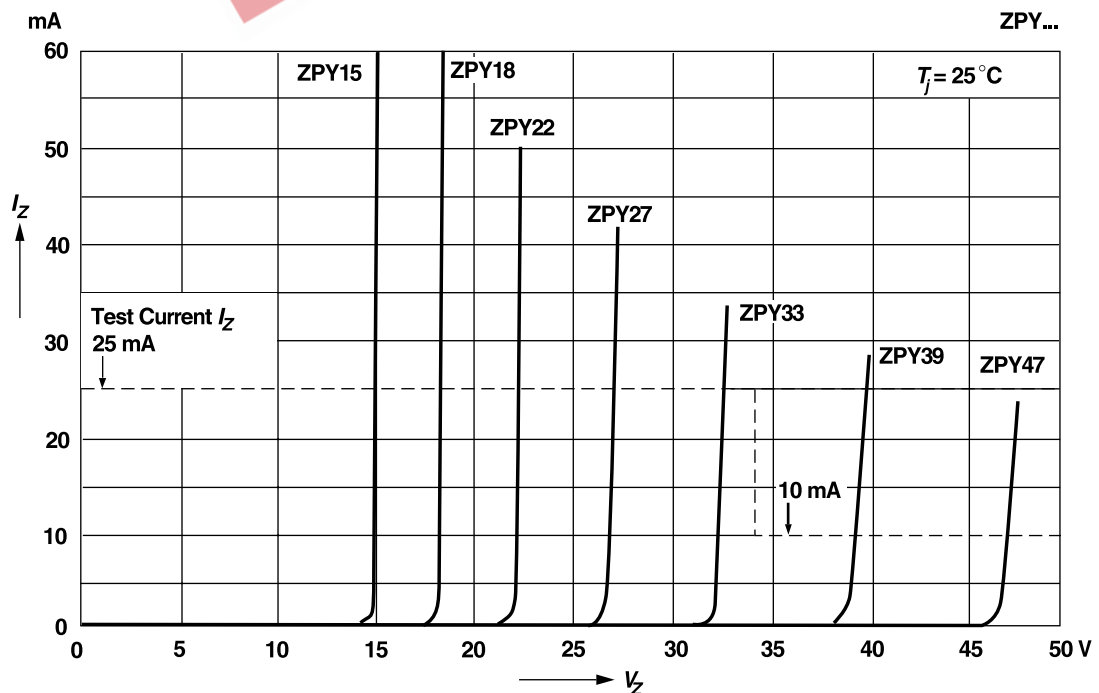
## Breakdown characteristics

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



## Breakdown characteristics

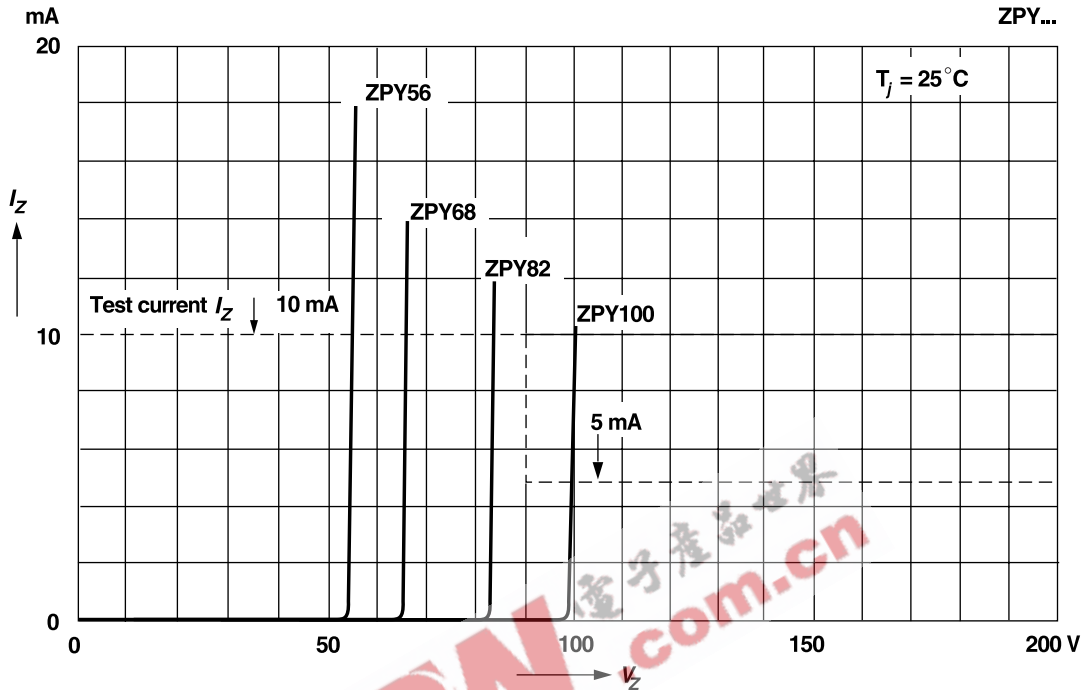
$T_j = \text{constant (pulsed)}$



# RATINGS AND CHARACTERISTIC CURVES ZPY1 THRU ZPY100

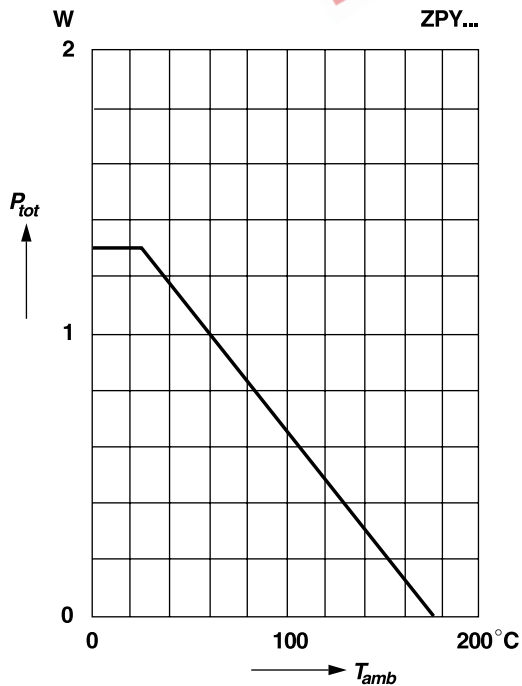
## Breakdown characteristics

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



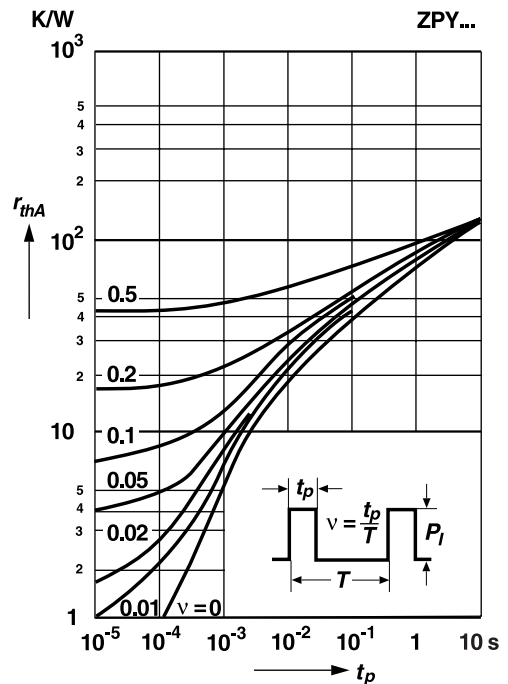
## Admissible power dissipation versus ambient temperature

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



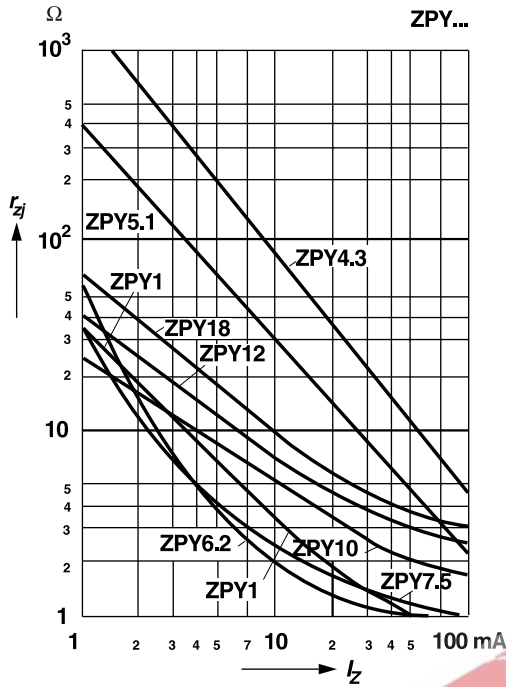
## Pulse thermal resistance versus pulse duration

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

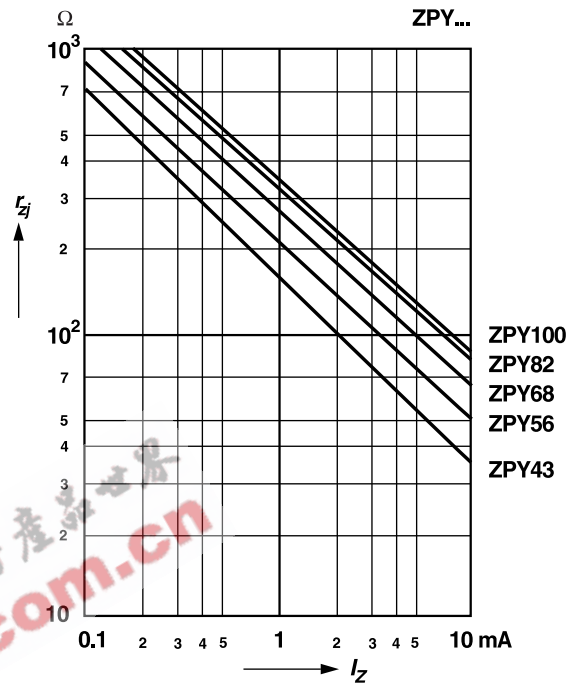


# RATINGS AND CHARACTERISTIC CURVES ZPY1 THRU ZPY100

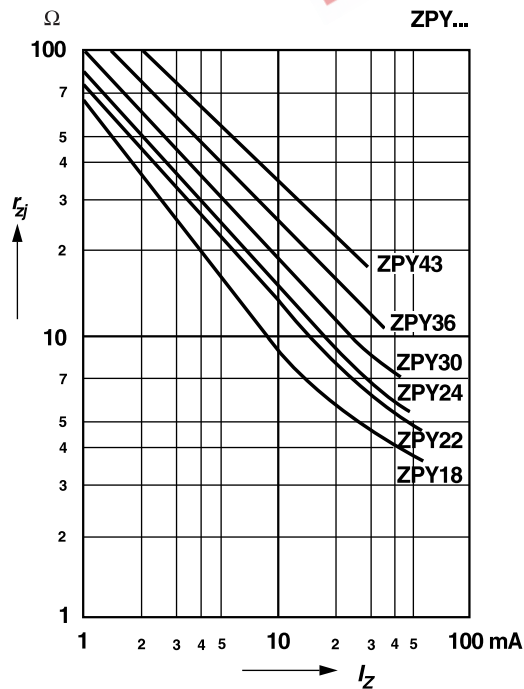
Dynamic resistance versus Zener current



Dynamic resistance versus Zener current



Dynamic resistance versus Zener current



Thermal resistance versus lead length

