



# ZMY1 thru ZMY100

Zener Diodes

$V_z$  Range: 1.0, 3.9 to 100 Volts Power Dissipation: 1.0W

## Features

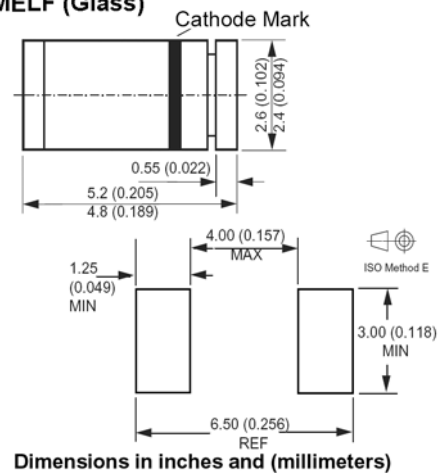
- ◆ Silicon Planar Power Zener Diodes
- ◆ For use in stabilizing and clipping circuits with higher power rating.
- ◆ The Zener voltages are graded according to the international E 24 standard. Smaller voltage tolerances are available upon request.
- ◆ These diodes are also available in the DO-41 case with the type designation ZPY1 ... ZPY100.

## Mechanical Data

- ◆ Case: MELF Glass Case
- ◆ Weight: approx. 0.25g



MELF (Glass)



## Maximum Ratings and Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Value	Unit
Zener current (see Table "Characteristics")			
Power dissipation at $T_{amb}=25^{\circ}\text{C}$	$P_{tot}$	1.0 <sup>(1)</sup>	W
Thermal resistance junction to ambient (Max.)	$R_{\theta JA}$	170 <sup>(1)</sup>	$^{\circ}\text{C}/\text{W}$
Thermal resistance junction to case (Typ.)	$R_{\theta JC}$	60	$^{\circ}\text{C}/\text{W}$
Junction temperature	$T_j$	175	$^{\circ}\text{C}$
Storage temperature range	$T_s$	-55 to +175	$^{\circ}\text{C}$

Notes: 1. Valid provided that electrodes are kept at ambient temperature.

# Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Type number	Zener voltage <sup>(2)</sup> at $I_{ZT}$ $V_Z$ (Volts)		Dynamic resistance at $I_{ZT}$ $r_{zj}$ ( $\Omega$ )	Temp. coefficient of zener voltage at $I_{ZT}$ $\alpha_{VZ}$ ( $10^{-4}/^{\circ}\text{C}$ )		Test current $I_{ZT}$ (mA)	Reverse voltage at $I_R=0.5\mu\text{A}$ $V_R$ (Volts)	Admissible zener current <sup>(1)</sup> at $T_{\text{amb}}=25^{\circ}\text{C}$ $I_Z$ (mA)
	Min.	Max.		Min.	Max.			
ZMY1 <sup>(3)</sup>	0.65	0.75	6.5 (< 8)	-26	-23	5	-	406
ZMY3.9	3.7	4.1	4 (< 7)	-7	+2	100	-	203
ZMY4.3	4.0	4.6	4 (< 7)	-7	+3	100	-	182
ZMY4.7	4.4	5.0	4 (< 7)	-7	+4	100	-	165
ZMY5.1	4.8	5.4	2 (< 5)	-6	+5	100	> 0.7	150
ZMY5.6	5.2	6.0	1 (< 2)	-3	+5	100	> 1.5	135
ZMY6.2	5.8	6.6	1 (< 2)	-1	+6	100	> 2.0	128
ZMY6.8	6.4	7.2	1 (< 2)	0	+7	100	> 3.0	110
ZMY7.5	7.0	7.9	1 (< 2)	0	+7	100	> 5.0	100
ZMY8.2	7.7	8.7	1 (< 2)	+3	+8	100	> 6.0	89
ZMY9.1	8.5	9.6	2 (< 4)	+3	+8	50	> 7.0	82
ZMY10	9.4	10.6	2 (< 4)	+5	+9	50	> 7.5	74
ZMY11	10.4	11.6	3 (< 7)	+5	+10	50	> 8.5	66
ZMY12	11.4	12.7	3 (< 7)	+5	+10	50	> 9.0	60
ZMY13	12.4	14.1	4 (< 9)	+5	+10	50	> 10	55
ZMY15	13.8	15.8	4 (< 9)	+5	+10	50	> 11	49
ZMY16	15.3	17.1	5 (< 10)	+7	+11	25	> 12	44
ZMY18	16.8	19.1	5 (< 11)	+7	+11	25	> 14	40
ZMY20	18.8	21.2	6 (< 12)	+7	+11	25	> 15	36
ZMY22	20.8	23.3	7 (< 13)	+7	+11	25	> 17	34
ZMY24	22.8	25.6	8 (< 14)	+7	+12	25	> 18	29
ZMY27	25.1	28.9	9 (< 15)	+7	+12	25	> 20	27
ZMY30	28	32	10 (< 20)	+7	+12	25	> 22.5	25
ZMY33	31	35	11 (< 20)	+7	+12	25	> 25	22
ZMY36	34	38	25 (< 60)	+7	+12	10	> 27	20
ZMY39	37	41	30 (< 60)	+8	+12	10	> 29	18
ZMY43	40	46	35 (< 80)	+8	+13	10	> 32	17
ZMY47	44	50	40 (< 80)	+8	+13	10	> 35	15
ZMY51	48	54	45 (< 100)	+8	+13	10	> 38	14
ZMY56	52	60	50 (< 100)	+8	+13	10	> 42	13
ZMY62	58	66	60 (< 130)	+8	+13	10	> 47	11
ZMY68	64	72	65 (< 130)	+8	+13	10	> 51	10
ZMY75	70	79	70 (< 160)	+8	+13	10	> 56	9
ZMY82	77	88	80 (< 160)	+8	+13	10	> 61	8
ZMY91	85	96	120 (< 250)	+9	+13	5	> 68	7.5
ZMY100	94	106	130 (< 250)	+9	+13	5	> 75	7

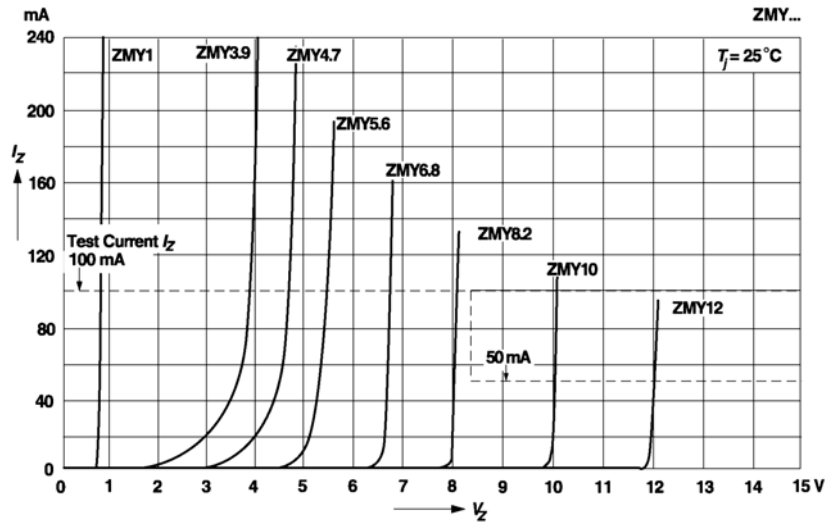
- Notes:**
- Valid provided that electrodes are kept at ambient temperature
  - Tested with pulses  $t_p=5\text{ms}$
  - The ZMY1 is a silicon diode operated in forward direction. Hence, the index of all characteristics and maximum ratings should be "F" instead of "Z".  
Connect the cathode terminal to the negative pole
- For devices in glass case MELF with higher Zener voltage but same power dissipation see types ZMU100 ... ZMU180

# RATINGS AND CHARACTERISTIC CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

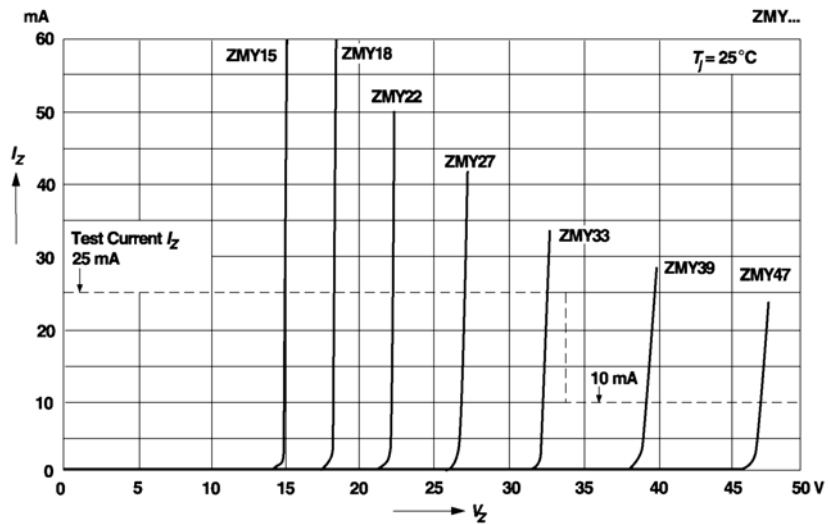
## Breakdown characteristics

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



## Breakdown characteristics

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

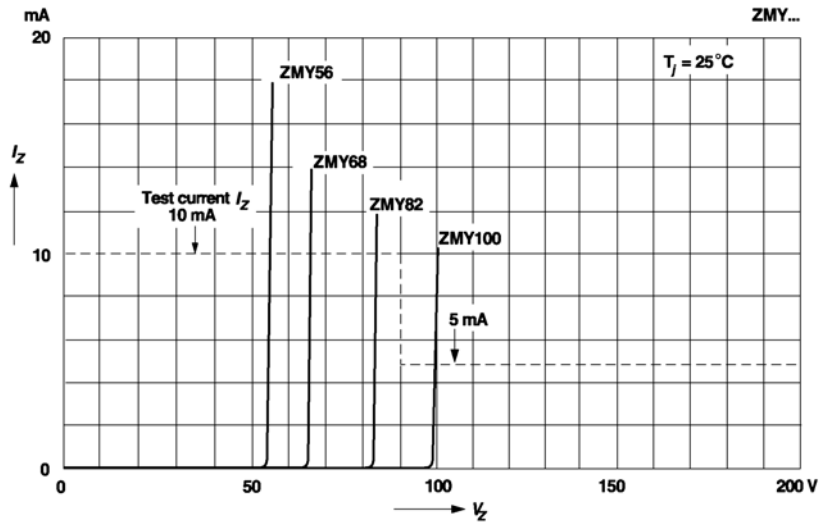


# RATINGS AND CHARACTERISTIC CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

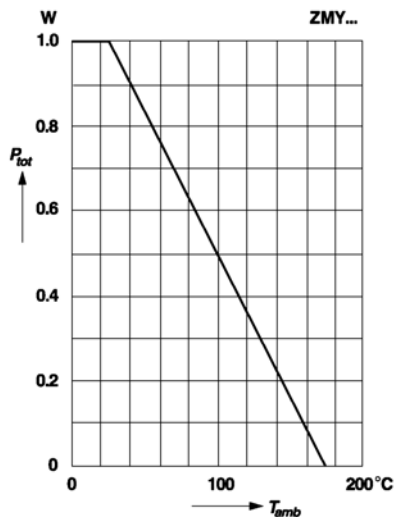
## Breakdown characteristics

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



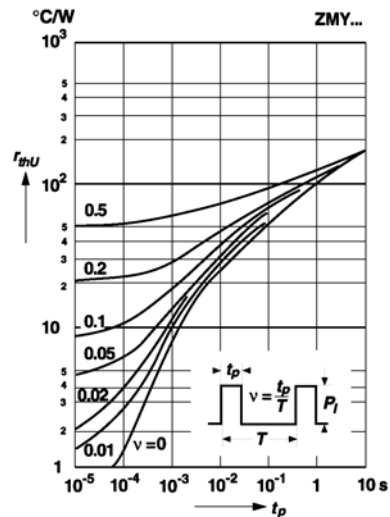
## Admissible power dissipation versus ambient temperature

Valid provided that electrodes are kept at ambient temperature



## Pulse thermal resistance versus pulse duration

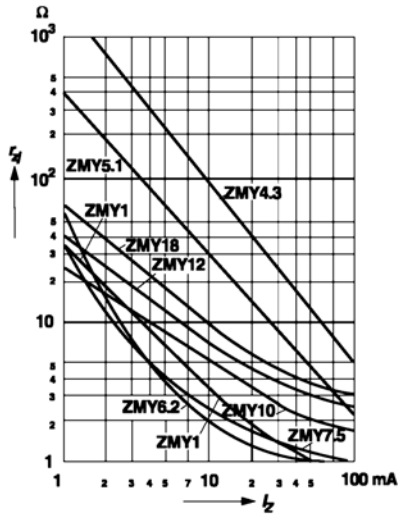
Valid provided that electrodes are kept at ambient temperature



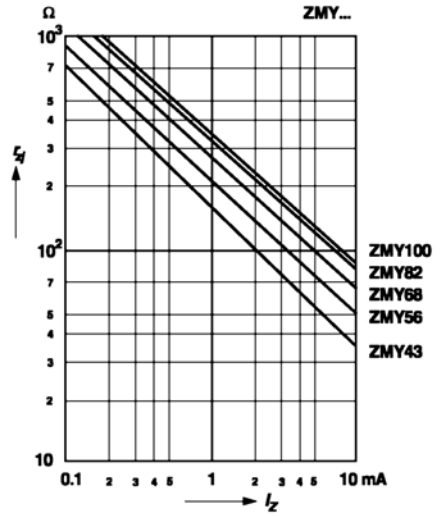
# RATINGS AND CHARACTERISTIC CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Dynamic resistance  
versus Zener current



Dynamic resistance  
versus Zener current



Dynamic resistance  
versus Zener current

