

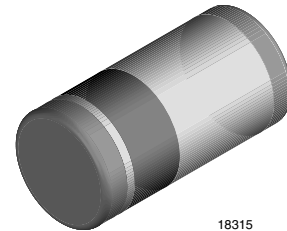
Zener Diodes

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 E 24 standard. Smaller voltage tolerances are available upon request
- These diodes are also available in the DO-41 case with the type designation ZPY3V9 to ZPY100
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



RoHS
COMPLIANT
HALOGEN
FREE



18315

Mechanical Data

Case: MELF DO-213AB (glass)

Weight: approx. 135 mg

Cathode band color: black

Packaging codes/options:

GS18/5 k per 13" reel (12 mm tape), 10 k/box

GS08/1.5 k per 7" reel (12 mm tape), 12 k/box

Absolute Maximum Ratings

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Zener current (see Table "Characteristics")				
Power dissipation		P_{tot}	1 ¹⁾	W

Note

¹⁾ Valid provided that electrodes are kept at ambient temperature.

Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R_{thJA}	170 ¹⁾	K/W
Thermal resistance junction to case		R_{thJC}	60	K/W
Junction temperature		T_j	175	$^{\circ}\text{C}$
Storage temperature		T_{stg}	- 55 to + 175	$^{\circ}\text{C}$

Note

¹⁾ Valid provided that electrodes are kept at ambient temperature.

Electrical Characteristics

Part number	Zener voltage ²⁾		Dynamic resistance		Temperature coefficient of Zener voltage		Test current	Reverse voltage	Admissible Zener current ¹⁾
	V_Z at I_{ZT}		r_{zj} at I_{ZT} , $f = 1$ kHz		α_{VZ} at I_{ZT}		I_{ZT}	V_R at $I_R = 0.5 \mu A$	I_Z at $T_{amb} = 25^\circ C$
	V		Ω		$10^{-4}/^\circ C$		mA	V	mA
	min.	max.	typ.	min.	max.				
ZMY3V9	3.7	4.1	7	4	- 7	2	100	-	203
ZMY4V3	4	4.6	7	4	- 7	3	100	-	182
ZMY4V7	4.4	5	7	4	- 7	4	100	-	165
ZMY5V1	4.8	5.4	5	2	- 6	5	100	0.7	150
ZMY5V6	5.2	6	2	1	- 3	5	100	1.5	135
ZMY6V2	5.8	6.6	2	1	- 1	6	100	2	128
ZMY6V8	6.4	7.2	2	1	0	7	100	3	110
ZMY7V5	7	7.9	2	1	0	7	100	5	100
ZMY8V2	7.7	8.7	2	1	3	8	100	6	89
ZMY9V1	8.5	9.6	4	2	3	8	50	7	82
ZMY10	9.4	10.6	4	2	5	9	50	7.5	74
ZMY11	10.4	11.6	7	3	5	10	50	8.5	66
ZMY12	11.4	12.7	7	3	5	10	50	9	60
ZMY13	12.4	14.1	9	4	5	10	50	10	55
ZMY15	13.8	15.8	9	4	5	10	50	11	49
ZMY16	15.3	17.1	10	5	7	11	25	12	44
ZMY18	16.8	19.1	11	5	7	11	25	14	40
ZMY20	18.8	21.2	12	6	7	11	25	15	36
ZMY22	20.8	23.3	13	7	7	11	25	17	34
ZMY24	22.8	25.6	14	8	7	12	25	18	29
ZMY27	25.1	28.9	15	9	7	12	25	20	27
ZMY30	28	32	20	10	7	12	25	22.5	25
ZMY33	31	35	20	11	7	12	25	25	22
ZMY36	34	38	60	25	7	12	10	27	20
ZMY39	37	41	60	30	8	12	10	29	18
ZMY43	40	46	80	35	8	13	10	32	17
ZMY47	44	50	80	40	8	13	10	35	15
ZMY51	48	54	100	45	8	13	10	38	14
ZMY56	52	60	100	50	8	13	10	42	13
ZMY62	58	66	130	60	8	13	10	47	11
ZMY68	64	72	130	65	8	13	10	51	10
ZMY75	70	79	160	70	8	13	10	56	9
ZMY82	77	88	160	80	8	13	10	61	8
ZMY91	85	96	250	120	9	13	5	68	7.5
ZMY100	94	106	250	130	9	13	5	75	7

Notes

¹⁾ Valid provided that electrodes are kept at ambient temperature

²⁾ Tested with pulses $t_p = 5$ ms

Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

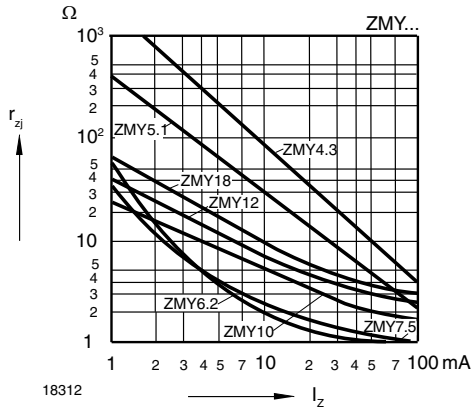


Figure 1. Dynamic Resistance vs. Zener Current

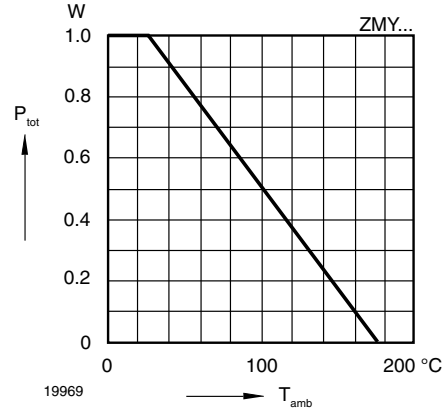


Figure 4. Admissible Power Dissipation vs. Ambient Temperature

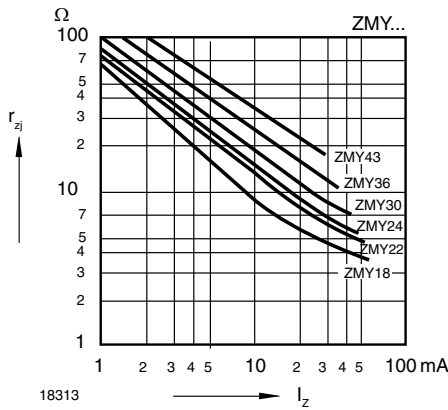


Figure 2. Dynamic Resistance vs. Zener Current

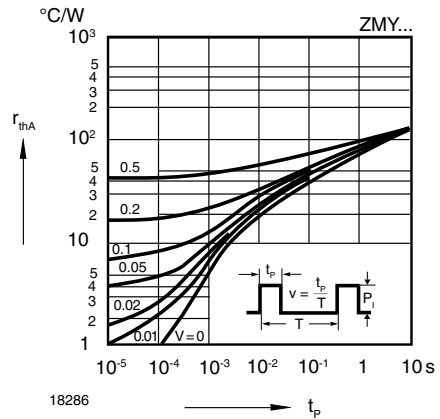


Figure 5. Pulse Thermal Resistance vs. Pulse Duration

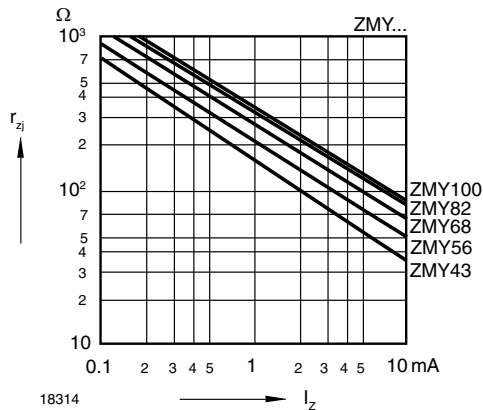


Figure 3. Dynamic Resistance vs. Zener Current

ZMY3V9 to ZMY100

Vishay Semiconductors

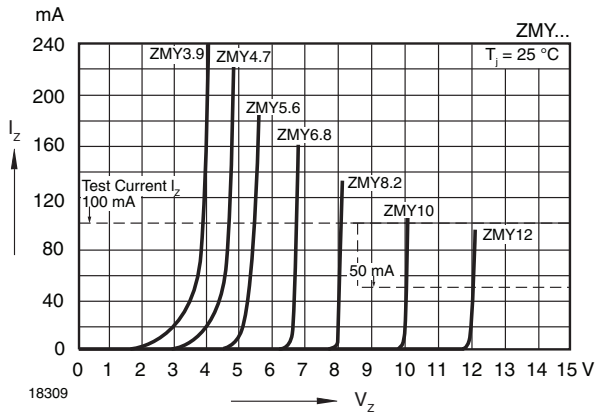


Figure 6. Breakdown Characteristics

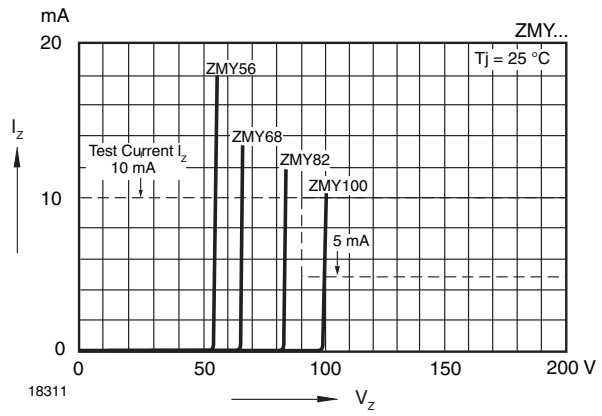


Figure 8. Breakdown Characteristics

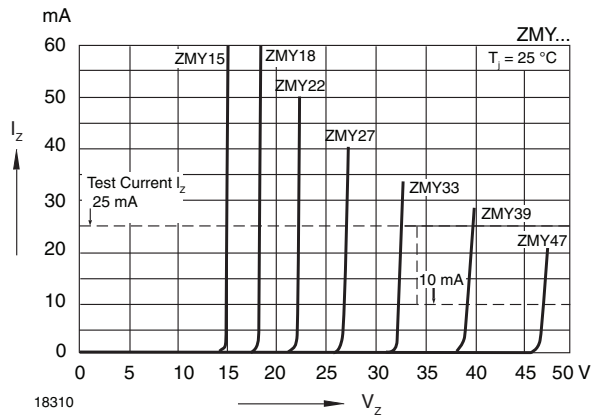
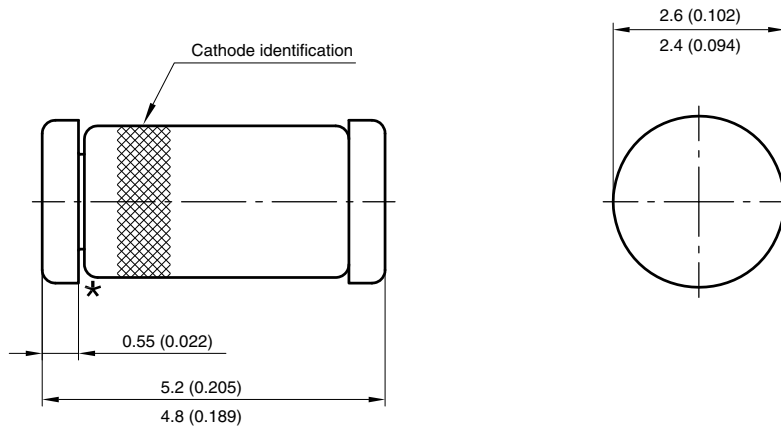


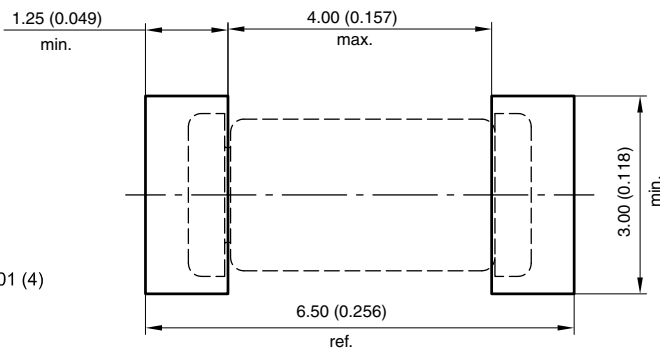
Figure 7. Breakdown Characteristics

Package Dimensions in millimeters (inches): MELF DO-213AB (glass)



★ The gap between plug and glass can be either on cathode or anode side

Foot print recommendation:



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