



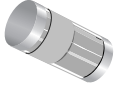
New Product

GLZ Series

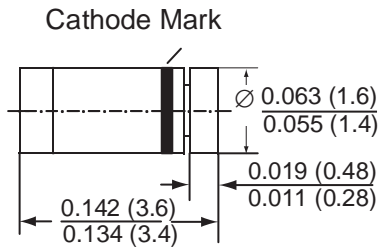
Vishay Semiconductors  
formerly General Semiconductor

## Zener Diodes

Vz Range 3.3 to 39V  
Power Dissipation 500mW

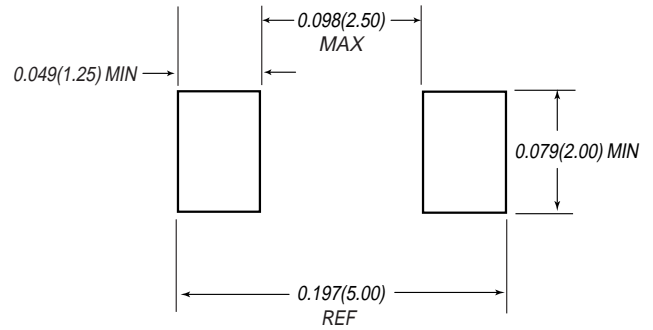


### MiniMELF (SOD-80C)



Dimensions in inches and (millimeters)

### Mounting Pad Layout



## Mechanical Data

**Case:** MiniMELF Glass Case (SOD-80C)

**Weight:** approx. 0.05g

**Packaging codes/options:**

D1/10K per 13" reel (8mm tape), 20K/box

D2/2.5K per 7" reel (8mm tape), 20K/box

## Features

- Silicon Planar Zener Diodes
- In MiniMELF case especially for automatic insertion
- The Zener voltages are graded according to voltage bands instead of by tolerance.
- Low Zener impedance and low leakage current
- Popular in Asian designs

## Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Zener Current see Table "Characteristics"			
Power Dissipation (see fig. 1)	P <sub>D</sub>	500 <sup>(1)</sup>	mW
Thermal Resistance Junction to Ambient Air	R <sub>θJA</sub>	300 <sup>(1)</sup>	°C/W
Junction temperature	T <sub>j</sub>	175	°C
Storage temperature range	T <sub>s</sub>	-55 to +175	°C

**Note:**

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

## Electrical Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

Type	Zener Voltage				Dynamic Resistance <sup>(3)</sup>				Reverse Leakage Current	
	Rank	V <sub>Z</sub> (V) at I <sub>ZT</sub>			Z <sub>Z</sub> (Ω) at I <sub>ZT</sub>		Z <sub>ZK</sub> (Ω) at I <sub>ZK</sub>		I <sub>R</sub> (μA)	
		Min	Max	I <sub>ZT</sub> (mA)	Max	I <sub>Z</sub> (mA)	Max	I <sub>ZK</sub> (mA)	Max.	V <sub>R</sub> (V)
GLZ3.3	A	3.160	3.380	20	70	20	1000	1	20	1.0
	B	3.320	3.530							
GLZ3.6	A	3.455	3.695	20	60	20	1000	1	10	1.0
	B	3.600	3.845							
GLZ3.9	A	3.74	4.01	20	50	20	1000	1	5	1.0
	B	3.89	4.16							
GLZ4.3	A	4.04	4.29	20	40	20	1000	1	5	1.0
	B	4.17	4.43							
	C	4.30	4.57							
GLZ4.7	A	4.44	4.68	20	25	20	900	1	5	1.0
	B	4.55	4.80							
	C	4.68	4.93							
GLZ5.1	A	4.81	5.07	20	20	20	800	1	5	1.5
	B	4.94	5.20							
	C	5.09	5.37							
GLZ5.6	A	5.28	5.55	20	13	20	500	1	5	2.5
	B	5.45	5.73							
	C	5.61	5.91							
GLZ6.2	A	5.78	6.09	20	10	20	300	1	5	3.0
	B	5.96	6.27							
	C	6.12	6.44							
GLZ6.8	A	6.29	6.63	20	8	20	150	0.5	2	3.5
	B	6.49	6.83							
	C	6.66	7.01							
GLZ7.5	A	6.85	7.22	20	8	20	120	0.5	0.5	4.0
	B	7.07	7.45							
	C	7.29	7.67							
GLZ8.2	A	7.53	7.92	20	8	20	120	0.5	0.5	5.0
	B	7.78	8.19							
	C	8.03	8.45							
GLZ9.1	A	8.29	8.73	20	8	20	120	0.5	0.5	6.0
	B	8.57	9.01							
	C	8.83	9.30							
GLZ10	A	9.12	9.59	20	8	20	120	0.5	0.2	7.0
	B	9.41	9.90							
	C	9.70	10.20							
	D	9.94	10.44							
GLZ11	A	10.18	10.71	10	10	10	120	0.5	0.2	8.0
	B	10.50	11.05							
	C	10.82	11.38							
GLZ12	A	11.13	11.71	10	12	10	110	0.5	0.2	9.0
	B	11.44	12.03							
	C	11.74	12.35							



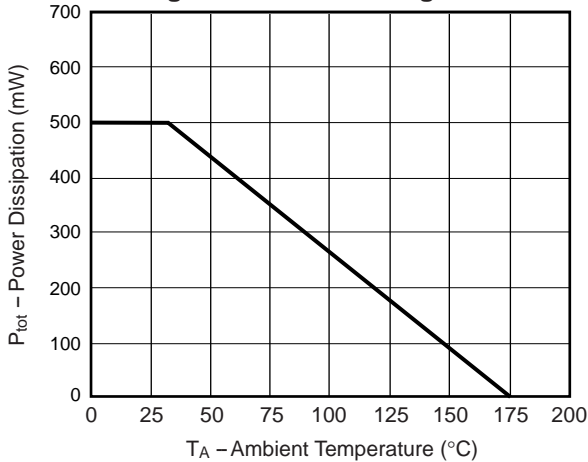
**Electrical Characteristics** (T<sub>A</sub> = 25°C unless otherwise noted)

Type	Zener Voltage				Dynamic Resistance <sup>(3)</sup>				Reverse Leakage Current	
	Rank	V <sub>Z</sub> (V) at I <sub>ZT</sub>			Z <sub>Z</sub> (Ω) at I <sub>ZT</sub>		Z <sub>ZK</sub> (Ω) at I <sub>ZK</sub>		I <sub>R</sub> (μA)	
		Min	Max	I <sub>ZT</sub> (mA)	Max	I <sub>Z</sub> (mA)	Max	I <sub>ZK</sub> (mA)	Max.	V <sub>R</sub> (V)
GLZ13	A	12.11	12.75	10	14	10	110	0.5	0.2	10
	B	12.55	13.21							
	C	12.99	13.66							
GLZ15	A	13.44	14.13	10	16	10	110	0.5	0.2	11
	B	13.89	14.62							
	C	14.35	15.09							
GLZ16	A	14.80	15.57	10	18	10	150	0.5	0.2	12
	B	15.25	16.04							
	C	15.69	16.51							
GLZ18	A	16.22	17.06	10	23	10	150	0.5	0.2	13
	B	16.82	17.70							
	C	17.42	18.33							
GLZ20	A	18.02	18.96	10	28	10	200	0.5	0.2	15
	B	18.63	19.59							
	C	19.23	20.22							
	D	19.72	20.72							
GLZ22	A	20.15	21.20	5	30	5	200	0.5	0.2	17
	B	20.64	21.71							
	C	21.08	22.17							
	D	21.52	22.63							
GLZ24	A	22.05	23.18	5	35	5	200	0.5	0.2	19
	B	22.61	23.77							
	C	23.12	24.31							
	D	23.63	24.85							
GLZ27	A	24.26	25.52	5	45	5	250	0.5	0.2	21
	B	24.97	26.26							
	C	25.63	26.95							
	D	26.29	27.64							
GLZ30	A	26.99	28.39	5	55	5	250	0.5	0.2	23
	B	27.70	29.13							
	C	28.36	29.82							
	D	29.02	30.51							
GLZ33	A	29.68	31.22	5	65	5	250	0.5	0.2	25
	B	30.32	31.88							
	C	30.90	32.50							
	D	31.49	33.11							
GLZ36	A	32.14	33.79	5	75	5	250	0.5	0.2	27
	B	32.79	34.49							
	C	33.40	35.13							
	D	34.01	35.77							
GLZ39	A	34.68	36.47	5	85	5	250	0.5	0.2	30
	B	35.36	37.19							
	C	36.00	37.85							
	D	36.63	38.52							

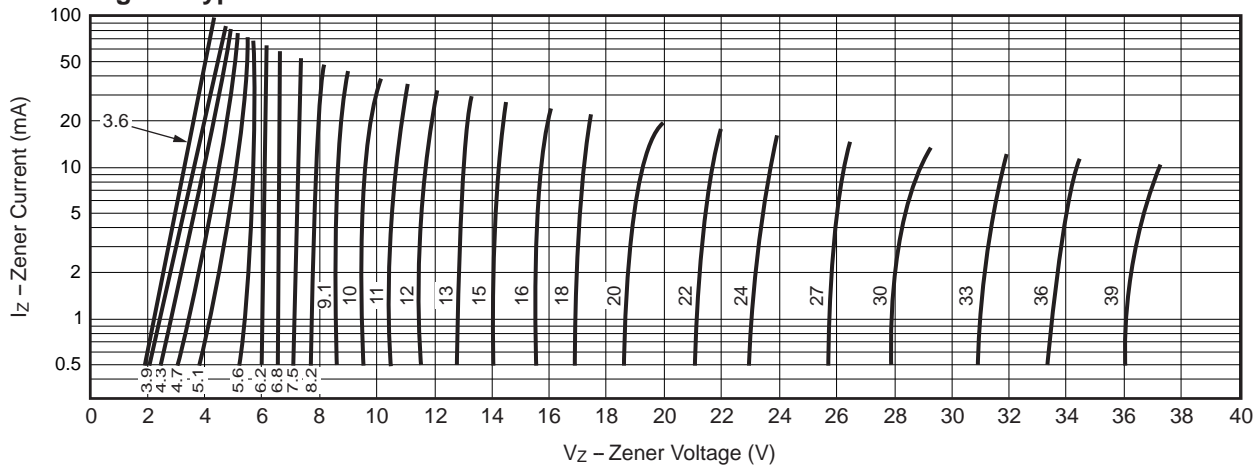
**Notes:** (1) The Zener voltage is measured 40ms after power is supplied.  
 (2) Specify Zener voltage rank (A, B, C, or D) when ordering parts  
 (3) Dynamic Zener resistance is measured with f = 1kHz

## Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

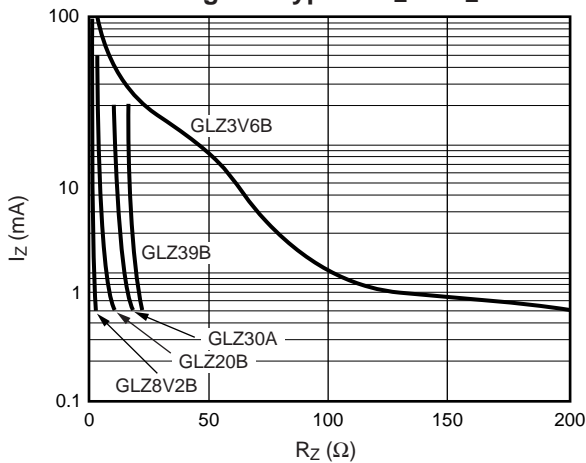
**Fig. 1 – Power Derating Curve**



**Fig. 2 – Typical Breakdown Characteristics**



**Fig. 3 – Typical  $R_Z$  vs.  $I_Z$**



**Fig. 4 – Typical Forward Characteristics**

