

500mW Zener Mini Diode

MTZ J Series

● Applications

Constant voltage control

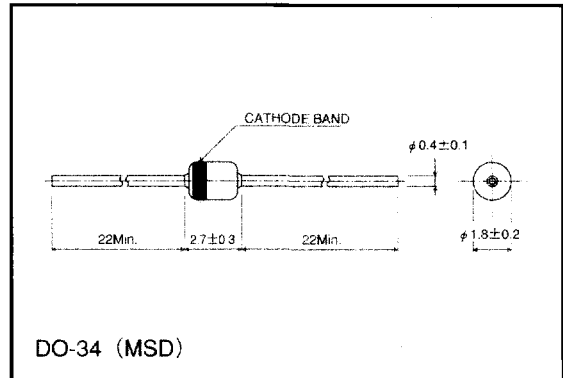
● Features

- 1) Glass sealed envelope (JEDEC: DO-34)
- 2) High reliability

● Construction

Silicon epitaxial planar

● External dimensions (Units: mm)



● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power dissipation	P_d	500	mW
Junction temperature	T_j	175	°C
Storage temperature	T_{stg}	-65~175	°C

● Cathode band colors

Type	Color
MTZ J Series	Black

The Zener voltage value is stamped on the body as a digital marking.

● Electrical characteristics (Ta=25°C)

Type	Rank	Zener voltage		I_z (mA)	Operating resistance		Rising operating resistance		Reverse current	
		V_z (V)			Z_z (Ω)		Z_{zk} (Ω)		I_R (μ A)	
		Min.	Max.	Max.	I_z (mA)	Max.	I_z (mA)	Max.	V_R (V)	Max.
MTZ J 2.0	A	1.880	2.100	5	100	5	1000	0.5	120	0.5
	B	2.020	2.200							
MTZ J 2.2	A	2.120	2.300	5	100	5	1000	0.5	100	0.7
	B	2.220	2.410							
MTZ J 2.4	A	2.330	2.520	5	100	5	1000	0.5	120	1.0
	B	2.430	2.630							
MTZ J 2.7	A	2.540	2.750	5	110	5	1000	0.5	100	1.0
	B	2.690	2.910							
MTZ J 3.0	A	2.850	3.070	5	120	5	1000	0.5	50	1.0
	B	3.010	3.220							
MTZ J 3.3	A	3.160	3.380	5	120	5	1000	0.5	20	1.0
	B	3.320	3.530							
MTZ J 3.6	A	3.455	3.695	5	100	5	1000	1	10	1.0
	B	3.600	3.845							
MTZ J 3.9	A	3.74	4.01	5	100	5	1000	1	5	1.0
	B	3.89	4.16							
MTZ J 4.3	A	4.04	4.29	5	100	5	1000	1	5	1.0
	B	4.17	4.43							
	C	4.30	4.57							
MTZ J 4.7	A	4.44	4.68	5	80	5	900	1	5	1.0
	B	4.55	4.80							
	C	4.68	4.93							

Type	Rank	Zener voltage			Operating resistance		Rising operating resistance		Reverse current	
		V _Z (V)		I _Z (mA)	Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)	
		Min.	Max.		Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)
MTZ J 5.1	A	4.81	5.07	5	80	5	800	1	5	1.5
	B	4.94	5.20							
	C	5.09	5.37							
MTZ J 5.6	A	5.28	5.55	5	60	5	500	1	5	2.5
	B	5.45	5.73							
	C	5.61	5.91							
MTZ J 6.2	A	5.78	6.09	5	60	5	300	1	5	3.0
	B	5.96	6.27							
	C	6.12	6.44							
MTZ J 6.8	A	6.29	6.63	5	20	5	150	0.5	2	3.5
	B	6.49	6.83							
	C	6.66	7.01							
MTZ J 7.5	A	6.85	7.22	5	20	5	120	0.5	0.5	4.0
	B	7.07	7.45							
	C	7.29	7.67							
MTZ J 8.2	A	7.53	7.92	5	20	5	120	0.5	0.5	5.0
	B	7.78	8.19							
	C	8.03	8.45							
MTZ J 9.1	A	8.29	8.73	5	25	5	120	0.5	0.5	6.0
	B	8.57	9.01							
	C	8.83	9.30							
MTZ J 10	A	9.12	9.59	5	30	5	120	0.5	0.2	7.0
	B	9.41	9.90							
	C	9.70	10.20							
	D	9.94	10.44							
MTZ J 11	A	10.18	10.71	5	30	5	120	0.5	0.2	8.0
	B	10.50	11.05							
	C	10.82	11.38							
MTZ J 12	A	11.13	11.71	5	30	5	110	0.5	0.2	9.0
	B	11.44	12.03							
	C	11.74	12.35							
MTZ J 13	A	12.11	12.75	5	35	5	110	0.5	0.2	10
	B	12.55	13.21							
	C	12.99	13.66							
MTZ J 15	A	13.44	14.13	5	40	5	110	0.5	0.2	11
	B	13.89	14.62							
	C	14.35	15.09							
MTZ J 16	A	14.80	15.57	5	40	5	150	0.5	0.2	12
	B	15.25	16.04							
	C	15.69	16.51							
MTZ J 18	A	16.22	17.06	5	45	5	150	0.5	0.2	13
	B	16.82	17.70							
	C	17.42	18.33							
MTZ J 20	A	18.02	18.96	5	55	5	200	0.5	0.2	15
	B	18.63	19.59							
	C	19.23	20.22							
	D	19.72	20.72							
MTZ J 22	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							
MTZ J 24	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							
MTZ J 27	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							

Type	Rank	Zener voltage			Operating resistance		Rising operating resistance		Reverse current	
		V _Z (V)		I _Z (mA)	Z _Z (Ω)		Z _{ZK} (Ω)		I _R (μA)	
		Min.	Max.		Max.	I _Z (mA)	Max.	I _Z (mA)	Max.	V _R (V)
MTZ J 30	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							
MTZ J 33	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							
MTZ J 36	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							
MTZ J 39 Note) 3	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							
	E	37.36	39.29							
	F	38.14	40.11							
	G	38.94	40.80							
MTZ J 43	—	40.00	45.00	5	90	5	—	—	0.2	33
MTZ J 47	—	44.00	49.00	5	90	5	—	—	0.2	36
MTZ J 51	—	48.00	54.00	5	110	5	—	—	0.2	39
MTZ J 56	—	53.00	60.00	5	110	5	—	—	0.2	43

- Note)
1. The Zener voltage is measured 40 ms after power is supplied
 2. For the Zener voltage subdivisions, the free ranks (A, B, or C) or recommended when ordering.
 3. Zener voltages 43 ~ 56 do not carry subdivision rankings.

● Zener characteristic curves

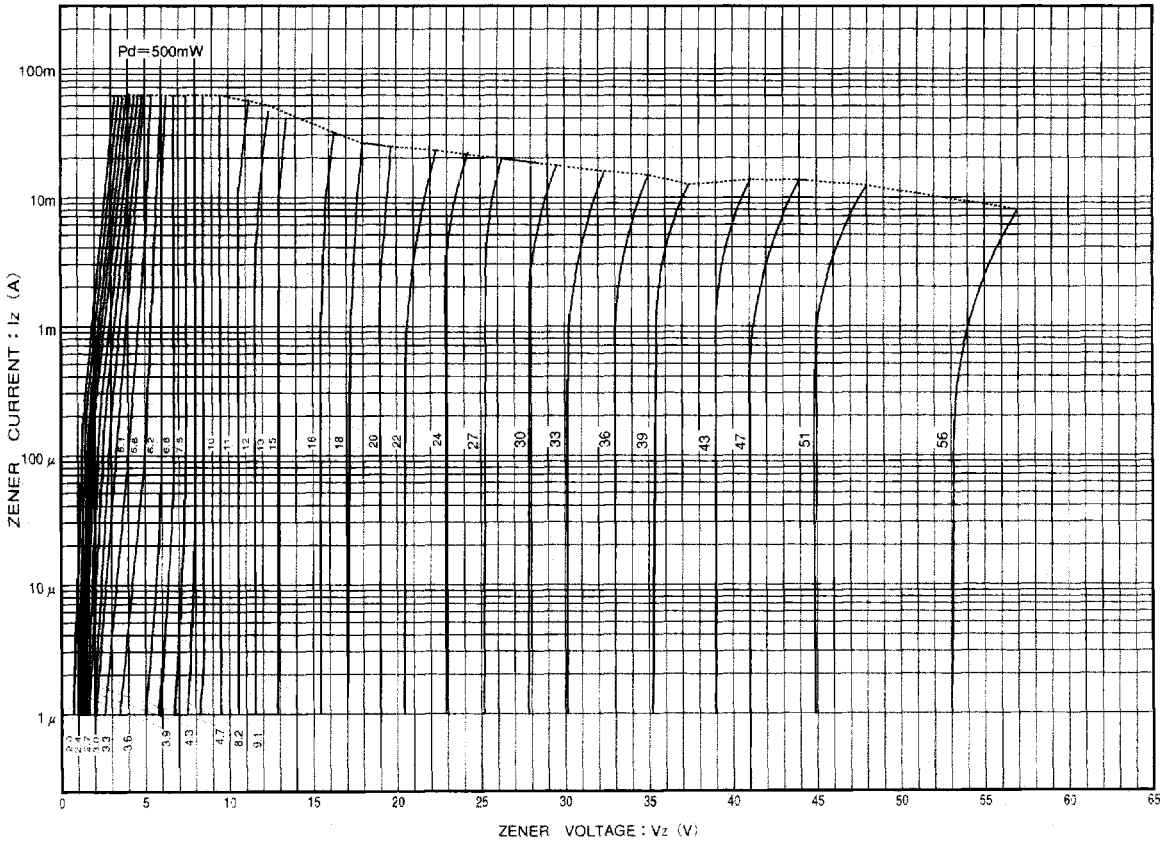


Fig. 1 Zener characteristic

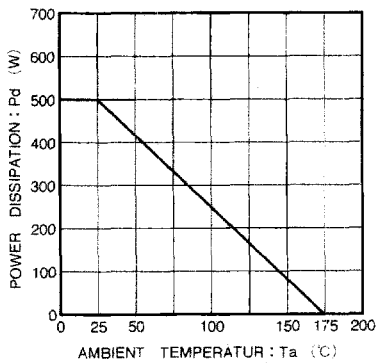


Fig. 2 Derating curve

Zener diodes

Zener diodes