Zener diode

Features

1. Low leakage
2. High reliability

Applications

Voltage stabilization

Construction

Silicon epitaxial planar

Absolute Maximum Ratings

T_j=25℃

Parameter	Test Conditions	Type	Symbol	Value	Unit
Power dissipation	R_{thJA}≦300K/W		P_V	500	mW
Junction temperature			T_j	175	℃
Storage temperature range			T_{stg}	-65~+175	℃

Maximum Thermal Resistance

T_j=25℃

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	on PC board 50mm×50mm×1.6mm	R_{thJA}	500	K/W

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

Electrical Characteristics

T_j=25℃

Type	Zener voltage				Operating resistance		Rising operating resistance		Reverse current	
		Vz (V)			Zzt (Ω)		Zzk (Ω)		I_R (μA)	
	Rank	Min.	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Iz (mA)	Max.	V_R (V)
ZJ 2.0	A	1.88	2.10	5	100	5	1000	0.5	120	0.5
	B	2.02	2.20							
ZJ 2.2	A	2.12	2.30	5	100	5	1000	0.5	100	0.7
	B	2.22	2.41							
ZJ 2.4	A	2.33	2.52	5	100	5	1000	0.5	120	1.0
	B	2.43	2.63							
ZJ 2.7	A	2.54	2.75	5	110	5	1000	0.5	100	1.0
	B	2.69	2.91							
ZJ 3.0	A	2.85	3.07	5	120	5	1000	0.5	50	1.0
	B	3.01	3.22							
ZJ 3.3	A	3.16	3.38	5	120	5	1000	0.5	20	1.0
	B	3.32	3.53							
ZJ 3.6	A	3.46	3.69	5	100	5	1000	1	10	1.0
	B	3.60	3.84							
ZJ 3.9	A	3.74	4.01	5	100	5	1000	1	5	1.0
	B	3.89	4.16							
ZJ 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							
ZJ 4.7	A	4.44	4.68	5	90	5	900	1	5	1.0
	B	4.55	4.80							
	C	4.68	4.93							
ZJ 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							
ZJ 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							
ZJ 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							
ZJ 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							
ZJ 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							
ZJ 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							
ZJ 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							

Type	Zener voltage				Operating resistance		Rising operating resistance		Reverse current	
		Vz (V)			Zzt (Ω)		Zzk (Ω)		I_R (μA)	
	Rank	Min.	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Iz (mA)	Max.	V_R (V)
ZJ 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							
ZJ 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							
ZJ 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							
ZJ 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							
ZJ 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							
ZJ 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							
ZJ 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							
ZJ 20	A	18.20	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							
ZJ 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							
ZJ 24	A	22.05	23.18	5	35	5	200	0.5	0.2	19
	B	22.61	23.77							
	C	23.12	24.13							
	D	23.63	24.85							
ZJ 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							
ZJ 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							

Type	Zener voltage				Operating resistance		Rising operating resistance		Reverse current	
		Vz (V)			Zzt (Ω)		Zzk (Ω)		I_R (μA)	
	Rank	Min.	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Iz (mA)	Max.	V_R (V)
ZJ 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							
ZJ 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							
ZJ 39	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							

Characteristics (T_j=25℃ unless otherwise specified)

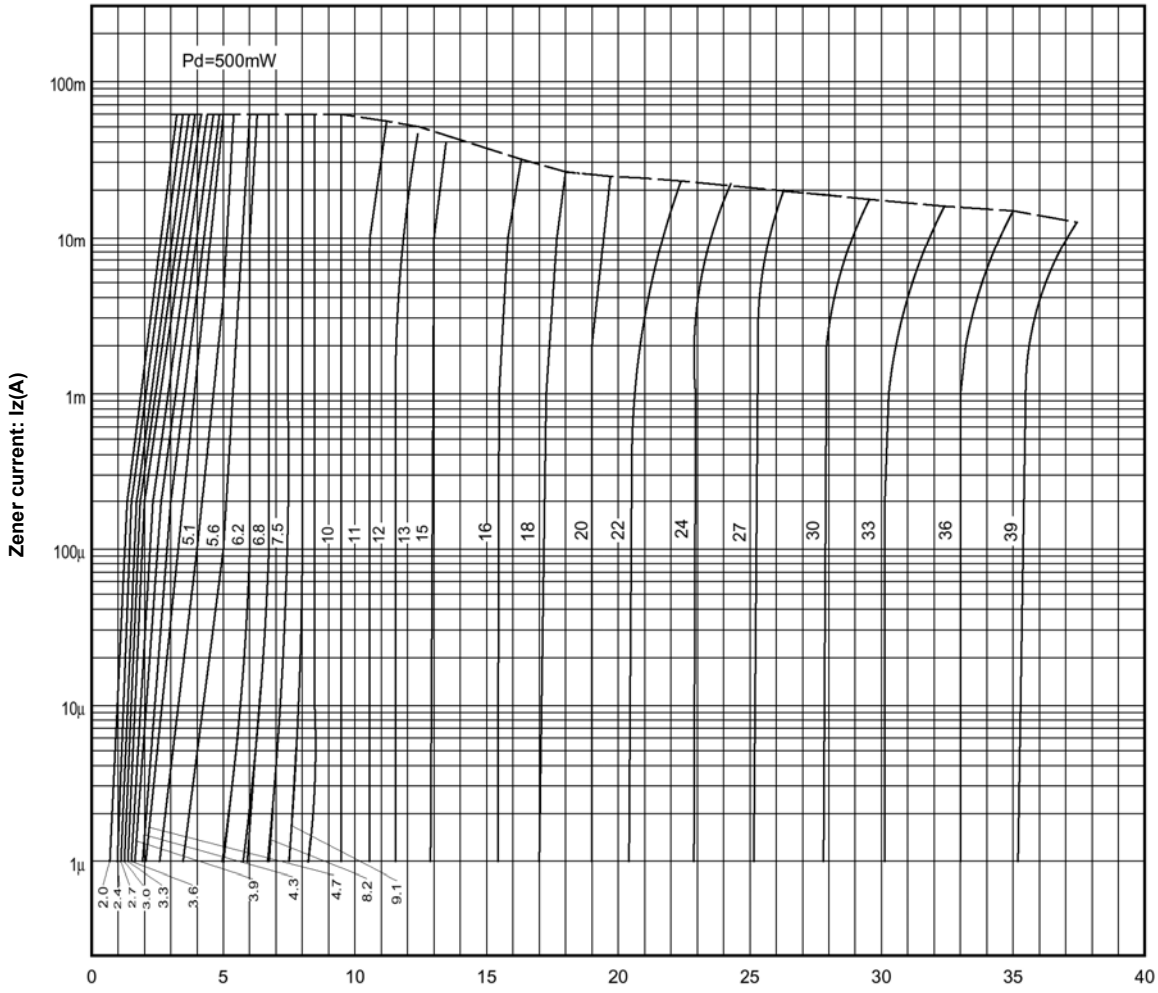


Figure 1. Zener characteristics

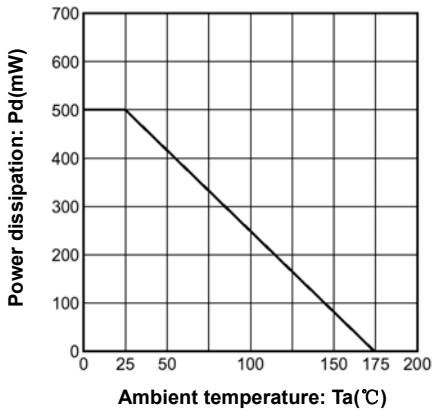
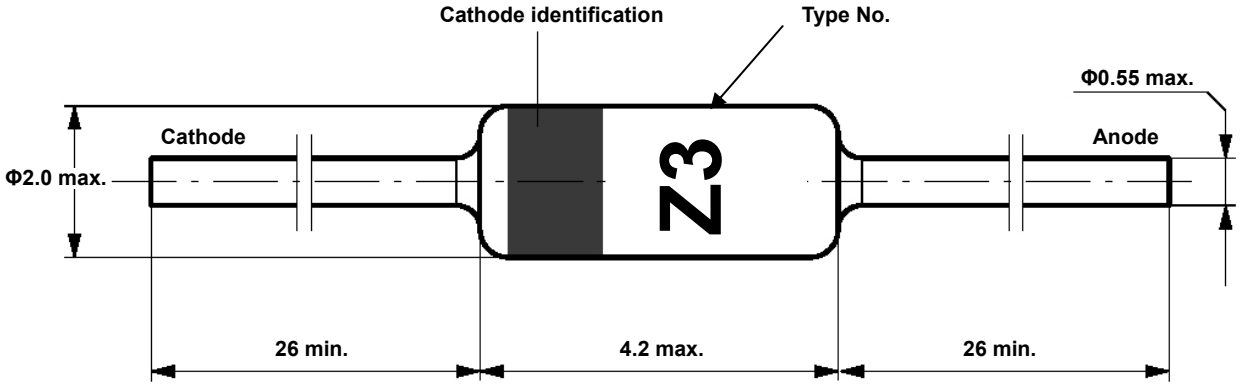


Figure 2. Derating curve

Dimensions in mm



Standard Glass Case
JEDEC DO-35

Marking