

# 500mW Zener Leadless Diode

## RLZ Series

● Applications

Constant voltage control

● Features

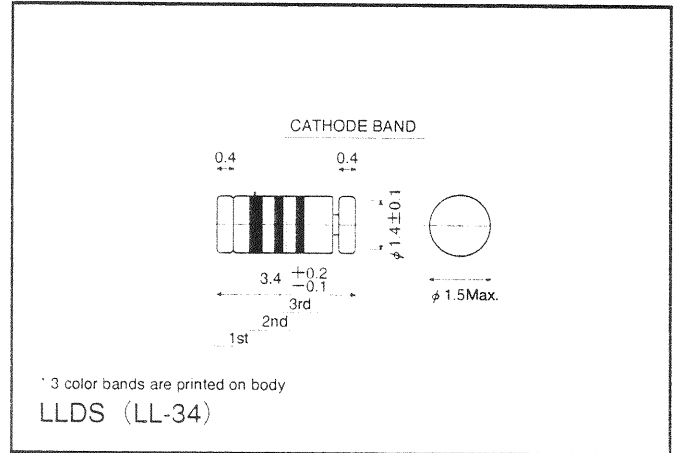
- 1) Designed for mounting on small surface areas (LLDS (LL-34) )
- 2) High reliability

● Construction

Silicon epitaxial planar

● Cathode band colors

● External dimensions (Units: mm)



Type	1st Color Band	2nd Color Band	3rd Color Band	Type	1st Color Band	2nd Color Band	3rd Color Band
RLZ 2.0	Black	Brown	※ A : Yellow B : Green C : Blue D : White	RLZ 13	Red	Brown	※ A : Yellow B : Green C : Blue D : White
RLZ 2.2	Black	Red		RLZ 15	Red	Red	
RLZ 2.4	Black	Orange		RLZ 16	Red	Orange	
RLZ 2.7	Black	Yellow		RLZ 18	Red	Yellow	
RLZ 3.0	Black	Green		RLZ 20	Red	Green	
RLZ 3.3	Black	Blue		RLZ 22	Red	Blue	
RLZ 3.6	Black	Purple		RLZ 24	Red	Purple	
RLZ 3.9	Black	Gray		RLZ 27	Red	Gray	
RLZ 4.3	Black	White		RLZ 30	Red	White	
RLZ 4.7	Brown	Black		RLZ 33	Orange	Black	
RLZ 5.1	Brown	Brown		RLZ 36	Orange	Brown	
RLZ 5.6	Brown	Red		RLZ 39	Orange	Red	
RLZ 6.2	Brown	Orange		RLZ 39 E	Yellow	White	
RLZ 6.8	Brown	Yellow		RLZ 39 F	Yellow	White	Green
RLZ 7.5	Brown	Green		RLZ 39 G	Yellow	White	Blue
RLZ 8.2	Brown	Blue		RLZ 43	Orange	Orange	—
RLZ 9.1	Brown	Purple		RLZ 47	Orange	Yellow	—
RLZ 10	Brown	Gray		RLZ 51	Orange	Green	—
RLZ 11	Brown	White		RLZ 56	Orange	Blue	—
RLZ 12	Red	Black					

※Products are grouped into colors A, B, C, and D, and listed in order within each group.  
For RLZ2.0A, 3rd color band is yellow.

● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limite	Unit
Power dissipation	P	500	mW
Junction temperature	T <sub>j</sub>	175	°C
Storage temperature	T <sub>stg</sub>	-65~175	°C

## ●Electrical characteristics (Ta=25°C)

Type	Rank	Zener voltage		I <sub>z</sub> (mA)	Operating resistance		Rising operating resistance		Reverse current	
		V <sub>z</sub> (V)			Z <sub>z</sub> (Ω)		Z <sub>zk</sub> (Ω)		I <sub>R</sub> (μA)	
		Min.	Max.	Max.	I <sub>z</sub> (mA)	Max.	I <sub>z</sub> (mA)	Max.	I <sub>z</sub> (mA)	Max.
RLZ 2.0	A	1.880	2.100	20	140	20	2000	1	120	0.5
	B	2.020	2.200							
RLZ 2.2	A	2.120	2.300	20	120	20	2000	1	120	0.7
	B	2.220	2.410							
RLZ 2.4	A	2.330	2.520	20	100	20	2000	1	120	1.0
	B	2.430	2.630							
RLZ 2.7	A	2.540	2.750	20	100	20	1000	1	100	1.0
	B	2.690	2.910							
RLZ 3.0	A	2.850	3.070	20	80	20	1000	1	50	1.0
	B	3.010	3.220							
RLZ 3.3	A	3.160	3.380	20	70	20	1000	1	20	1.0
	B	3.320	3.530							
RLZ 3.6	A	3.455	3.695	20	60	20	1000	1	10	1.0
	B	3.600	3.845							
RLZ 3.9	A	3.74	4.01	20	50	20	1000	1	5	1.0
	B	3.89	4.16							
RLZ 4.3	A	4.04	4.29	20	40	20	1000	1	5	1.0
	B	4.17	4.43							
	C	4.30	4.57							
RLZ 4.7	A	4.44	4.68	20	25	20	900	1	5	1.0
	B	4.55	4.80							
	C	4.68	4.93							
RLZ 5.1	A	4.81	5.07	20	20	20	800	1	5	1.5
	B	4.94	5.20							
	C	5.09	5.37							
RLZ 5.6	A	5.28	5.55	20	13	20	500	1	5	2.5
	B	5.45	5.73							
	C	5.61	5.91							
RLZ 6.2	A	5.78	6.09	20	10	20	300	1	5	3.0
	B	5.96	6.27							
	C	6.12	6.44							
RLZ 6.8	A	6.29	6.63	20	8	20	150	0.5	2	3.5
	B	6.49	6.83							
	C	6.66	7.01							
RLZ 7.5	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							
RLZ 8.2	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							
RLZ 9.1	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							
RLZ 10	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							
RLZ 11	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							
RLZ 12	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							
RLZ 13	A	12.11	12.75	10	14	10	110	0.5	0.2	10
	B	12.55	13.21							
	C	12.99	13.66							

## ●Electrical characteristics (Ta=25°C)

Type	Zener voltage			Operating resistance		Rising operating resistance		Reverse current		
	Rank	Vz (V)		Zz (Ω)		Zzk (Ω)		IR (μA)		
		Min.	Max.	Iz (mA)	Max.	Iz (mA)	Max.	Iz (mA)	Max.	VR (V)
RLZ 15	A	13.44	14.13	10	16	10	110	0.5	0.2	11
	B	13.89	14.62							
	C	14.35	15.09							
RLZ 16	A	14.80	15.57	10	18	10	150	0.5	0.2	12
	B	15.25	16.04							
	C	15.69	16.51							
RLZ 18	A	16.22	17.06	10	23	10	150	0.5	0.2	13
	B	16.82	17.70							
	C	17.42	18.33							
RLZ 20	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							
RLZ 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							
RLZ 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							
RLZ 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							
RLZ 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							
RLZ 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							
RLZ 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							
RLZ 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							
RLZ 43	—	40.00	45.00	5	90	5	—	—	0.2	33
RLZ 47	—	44.00	49.00	5	90	5	—	—	0.2	36
RLZ 51	—	48.00	54.00	5	100	5	—	—	0.2	39
RLZ 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 between 43 and 56 are grouped together in no particular order. 39E and above are available only on special order.

● Zener characteristic curves

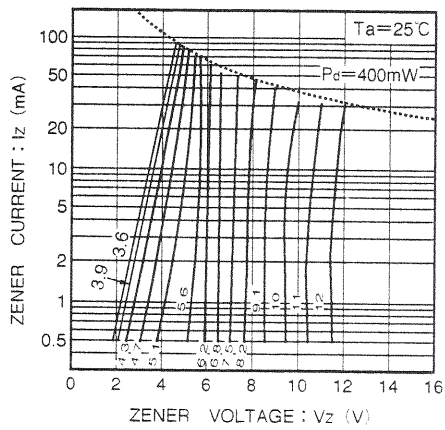


Fig. 1 RLZ3.9 ~ RLZ12 Zener characteristic

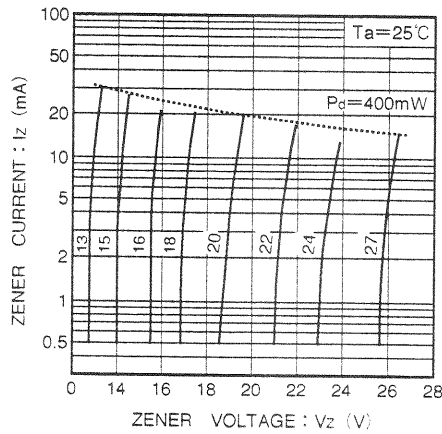


Fig. 2 RLZ13 ~ RLZ27 Zener characteristic

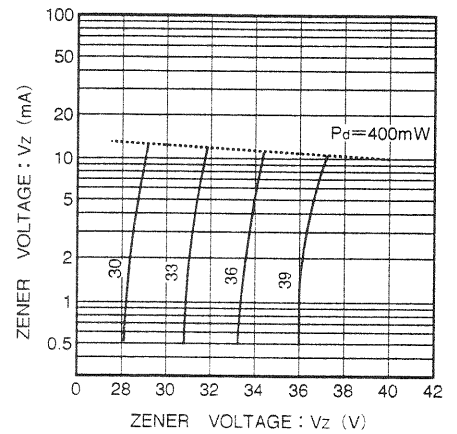


Fig. 3 RLZ30 ~ RLZ39 Zener characteristic

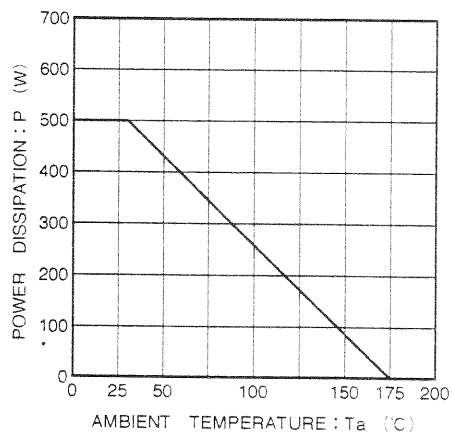


Fig. 4 Derating curve