

# Low Level Zener Diodes

These low level zener diodes are designed for use at current levels as low as 50 ua. They feature sharp knees, low leakage, low impedance and low noise. The devices are available in the DO-7 glass package and in die form.

## ULTRA LOW CURRENT: 50µA - Low Leakage

JEDEC Type No. (Note 1)	Nominal Zener Voltage $V_Z@50\mu A$ (volts)	Max. Reverse Leakage Current		Max. Regulation Factor 100uAdc to 10uAdc $\Delta V_Z$ (volts)	Maximum Regulator Current $I_{ZM}$ (mAdc)	JEDEC Type No. (Note 1)	Nominal Zener Voltage $V_Z@50\mu A$ (volts)	Max. Reverse Leakage Current		Max. Regulation Factor 100uAdc to 10uAdc $\Delta V_Z$ (volts)	Maximum Regulator Current $I_{ZM}$ (mAdc)
		$I_R$ (uAdc)	$V_R$ (Vdc)					$I_R$ (uAdc)	$V_R$ (Vdc)		
1N4678	1.8	7.5	1.0	0.70	120.0	1N4698	11.0	0.05	8.4	0.11	21.6
1N4679	2.0	5.0	1.0	0.70	110.0	1N4699	12.0	0.05	9.1	0.12	20.4
1N4680	2.2	4.0	1.0	0.75	100.0	1N4700	13.0	0.05	9.8	0.13	19.0
1N4681	2.4	2.0	1.0	0.80	95.0	1N4701	14.0	0.05	10.6	0.14	17.5
1N4682	2.7	1.0	1.0	0.85	90.0	1N4702	15.0	0.05	11.4	0.15	16.3
1N4683	3.0	0.8	1.0	0.90	85.0	1N4703	16.0	0.05	12.1	0.16	15.4
1N4684	3.3	7.5	1.5	0.95	80.0	1N4704	17.0	0.05	12.9	0.17	14.5
1N4685	3.6	7.5	2.0	0.95	75.0	1N4705	18.0	0.05	13.6	0.18	13.2
1N4686	3.9	5.0	2.0	0.97	70.0	1N4706	19.0	0.05	14.4	0.19	12.5
1N4687	4.3	4.0	2.0	0.99	65.0	1N4707	20.0	0.01	15.2	0.20	11.9
1N4688	4.7	10.0	3.0	0.99	60.0	1N4708	22.0	0.01	16.7	0.22	10.8
1N4689	5.1	10.0	3.0	0.97	55.0	1N4709	24.0	0.01	18.2	0.24	9.9
1N4690	5.6	10.0	4.0	0.96	50.0	1N4710	25.0	0.01	19.0	0.25	9.5
1N4691	6.2	10.0	5.0	0.95	45.0	1N4711	27.0	0.01	20.4	0.27	8.8
1N4692	6.8	10.0	5.1	0.90	35.0	1N4712	28.0	0.01	21.2	0.28	8.5
1N4693	7.5	10.0	5.7	0.75	31.8	1N4713	30.0	0.01	22.8	0.30	7.9
1N4694	8.2	1.0	6.2	0.50	29.0	1N4714	33.0	0.01	25.0	0.33	7.2
1N4695	8.7	1.0	6.6	0.10	27.6						
1N4696	9.1	1.0	6.9	0.08	26.2						
1N4697	10.0	1.0	7.6	0.10	24.8						

Note 1: All types  $\pm 5\%$  tolerance

## JEDEC REGISTERED: 250µA - Low Current, Low Noise

Type No. (Note 1)	Nominal Zener Voltage $V_Z@250\mu A$ (volts)	Maximum Zener Impedance $Z_{ZT}@250\mu A$ (ohms)	Max. Reverse Leakage Current		Max. Noise Density at $I_Z=250\mu A$ $\mu V/\sqrt{Hz}$	Maximum Regulator Current $I_{ZM}$ (mAdc)	Type No. (Note 1)	Nominal Zener Voltage $V_Z@250\mu A$ (volts)	Maximum Zener Impedance $Z_{ZT}@250\mu A$ (ohms)	Max. Reverse Leakage Current		Max. Noise Density at $I_Z=250\mu A$ $\mu V/\sqrt{Hz}$	Maximum Regulator Current $I_{ZM}$ (mAdc)
			$I_R$ (uAdc)	$V_R$ (Vdc)						$I_R$ (uAdc)	$V_R$ (Vdc)		
1N4614	1.8	1200	7.5	1.0	1	120.0	1N4105	11.0	200	0.05	8.5	40	21.6
1N4615	2.0	1250	5.0	1.0	1	110.0	1N4106	12.0	200	0.05	9.2	40	20.4
1N4616	2.2	1300	4.0	1.0	1	100.0	1N4107	13.0	200	0.05	9.9	40	19.0
1N4617	2.4	1400	2.0	1.0	1	95.0	1N4108	14.0	200	0.05	10.7	40	17.5
1N4618	2.7	1500	1.0	1.0	1	90.0	1N4109	15.0	200	0.05	11.4	40	16.3
1N4619	3.0	1600	0.8	1.0	1	85.0	1N4110	16.0	100	0.05	12.2	40	15.4
1N4620	3.3	1650	7.5	1.5	1	80.0	1N4111	17.0	100	0.05	13.0	40	14.5
1N4621	3.6	1700	7.5	2.0	1	75.0	1N4112	18.0	100	0.05	13.7	40	13.2
1N4622	3.9	1650	5.0	2.0	1	70.0	1N4113	19.0	150	0.05	14.5	40	12.5
1N4623	4.3	1600	4.0	2.0	1	65.0	1N4114	20.0	150	0.01	15.2	40	11.9
1N4624	4.7	1550	10.0	3.0	1	60.0	1N4115	22.0	150	0.01	16.8	40	10.8
1N4625	5.1	1500	10.0	3.0	2	55.0	1N4116	24.0	150	0.01	18.3	40	9.9
1N4626	5.6	1400	10.0	4.0	4	50.0	1N4117	25.0	150	0.01	19.0	40	9.5
1N4627	6.2	1200	10.0	5.0	5	45.0	1N4118	27.0	150	0.01	20.5	40	8.8
1N4099	6.8	200	10.0	5.2	40	35.0	1N4119	28.0	200	0.01	21.3	40	8.5
1N4100	7.5	200	10.0	5.7	40	31.8	1N4120	30.0	200	0.01	22.8	40	7.9
1N4101	8.2	200	1.0	6.3	40	29.0	1N4121	33.0	200	0.01	25.1	40	7.2
1N4102	8.7	200	1.0	6.7	40	27.4							
1N4103	9.1	200	1.0	7.0	40	26.2							
1N4104	10.0	200	1.0	7.6	40	24.8							

Note 1: All types  $\pm 5\%$  tolerance