

DIODE TRANSISTOR CO., INC.

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(201) 686-0400 • Telex: 139-385 • Outside NY & NJ area call TOLL FREE 800-526-4581
 FAX No. 201-575-5863

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.

ULTRA-LOW CURRENT: 50 ua — Low Leakage

| JEDEC Type No. (Note 1) | Nominal Zener Voltage VZ@50uA (volts) | Max. Reverse Leakage IR (uAdc) | Current @VR (Vdc) | Max. Regulation Factor 100uAdc to 10uAdc aVZ (volts) | Maximum Regulator Current IZM (mAdc) |
|-------------------------|---------------------------------------|--------------------------------|-------------------|--|--------------------------------------|
| 1N4678 | 1.8 | 7.5 | 1.0 | 0.70 | 120.0 |
| 1N4679 | 2.0 | 5.0 | 1.0 | 0.70 | 110.0 |
| 1N4680 | 2.2 | 4.0 | 1.0 | 0.75 | 100.0 |
| 1N4681 | 2.4 | 2.0 | 1.0 | 0.80 | 95.0 |
| 1N4682 | 2.7 | 1.0 | 1.0 | 0.85 | 90.0 |
| 1N4683 | 3.0 | 0.8 | 1.0 | 0.90 | 85.0 |
| 1N4684 | 3.3 | 7.5 | 1.5 | 0.95 | 80.0 |
| 1N4685 | 3.6 | 7.5 | 2.0 | 0.95 | 75.0 |
| 1N4686 | 3.9 | 5.0 | 2.0 | 0.97 | 70.0 |
| 1N4687 | 4.3 | 4.0 | 2.0 | 0.99 | 65.0 |
| 1N4688 | 4.7 | 10.0 | 3.0 | 0.99 | 60.0 |
| 1N4689 | 5.1 | 10.0 | 3.0 | 0.97 | 55.0 |
| 1N4690 | 5.6 | 10.0 | 4.0 | 0.96 | 50.0 |
| 1N4691 | 6.8 | 10.0 | 5.0 | 0.95 | 45.0 |
| 1N4692 | 6.8 | 10.0 | 5.1 | 0.90 | 35.0 |
| 1N4693 | 7.5 | 10.0 | 5.7 | 0.75 | 31.8 |
| 1N4694 | 8.2 | 1.0 | 6.2 | 0.50 | 29.0 |
| 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 |

| JEDEC Type No. (Note 1) | Nominal Zener Voltage VZ@50uA (volts) | Max. Reverse Leakage IR (uAdc) | Current @VR (Vdc) | Max. Regulation Factor 100uAdc to 10uAdc @VZ(volts) | Maximum Regulator Current IZM (mAdc) |
|-------------------------|---------------------------------------|--------------------------------|-------------------|---|--------------------------------------|
| 1N4698 | 11.0 | 0.05 | 8.4 | 0.11 | 21.6 |
| 1N4699 | 12.0 | 0.05 | 9.1 | 0.12 | 20.4 |
| 1N4700 | 13.0 | 0.05 | 9.8 | 0.13 | 19.0 |
| 1N4701 | 14.0 | 0.05 | 10.6 | 0.14 | 17.5 |
| 1N4702 | 15.0 | 0.05 | 11.4 | 0.15 | 16.3 |
| 1N4703 | 16.0 | 0.05 | 12.1 | 0.16 | 15.4 |
| 1N4704 | 17.0 | 0.05 | 12.9 | 0.17 | 14.5 |
| 1N4705 | 18.0 | 0.05 | 13.6 | 0.18 | 13.2 |
| 1N4706 | 19.0 | 0.05 | 14.4 | 0.19 | 12.5 |
| 1N4707 | 20.0 | 0.01 | 15.2 | 0.20 | 11.9 |
| 1N4708 | 22.0 | 0.01 | 16.7 | 0.22 | 10.8 |
| 1N4709 | 24.0 | 0.01 | 18.2 | 0.24 | 9.9 |
| 1N4710 | 25.0 | 0.01 | 19.0 | 0.25 | 9.5 |
| 1N4711 | 27.0 | 0.01 | 20.4 | 0.27 | 8.8 |
| 1N4712 | 28.0 | 0.01 | 21.2 | 0.28 | 8.5 |
| 1N4713 | 30.0 | 0.01 | 22.8 | 0.30 | 7.9 |
| 1N4714 | 33.0 | 0.01 | 25.0 | 0.33 | 7.2 |

JEDEC REGISTERED: 250uA - Low Current, Low Noise

| Type No. (Note 1) | Nominal Zener Voltage VZ@250uA (volts) | Maximum Zener Impedance ZZT@uA (ohms) | Max. Reverse Leakage Current IR @ (uAdc) | VR (Vdc) | Max. Noise Density at IZ = 250uA uV/ Hz | Maximum Regulator Current IZM (mAdc) |
|-------------------|--|---------------------------------------|--|----------|---|--------------------------------------|
| 1N4614 | 1.8 | 1200 | 7.5 | 1.0 | 1 | 120.0 |
| 1N4615 | 2.0 | 1250 | 5.0 | 1.0 | 1 | 110.0 |
| 1N4616 | 2.2 | 1300 | 4.0 | 1.0 | 1 | 100.0 |
| 1N4617 | 2.4 | 1400 | 2.0 | 1.0 | 1 | 95.0 |
| 1N4618 | 2.7 | 1500 | 1.0 | 1.0 | 1 | 90.0 |
| 1N4619 | 3.0 | 1600 | 0.8 | 1.0 | 1 | 85.0 |
| 1N4620 | 3.3 | 1650 | 7.5 | 1.5 | 1 | 80.0 |
| 1N4621 | 3.6 | 1700 | 7.5 | 2.0 | 1 | 75.0 |
| 1N4622 | 3.9 | 1650 | 5.0 | 2.0 | 1 | 70.0 |
| 1N4623 | 4.3 | 1600 | 4.0 | 2.0 | 1 | 65.0 |
| 1N4624 | 4.7 | 1550 | 10.0 | 3.0 | 1 | 60.0 |
| 1N4625 | 5.1 | 1500 | 10.0 | 3.0 | 2 | 55.0 |
| 1N4626 | 5.6 | 1400 | 10.0 | 4.0 | 4 | 50.0 |
| 1N4627 | 6.2 | 1200 | 10.0 | 5.0 | 5 | 45.0 |
| 1N4099 | 6.8 | 200 | 10.0 | 5.2 | 40 | 35.0 |
| 1N4100 | 7.5 | 200 | 10.0 | 5.7 | 40 | 31.8 |
| 1N4101 | 8.2 | 200 | 1.0 | 6.3 | 40 | 29.0 |
| 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 |

| Type No. (Note 1) | Nominal Zener Voltage VZ@250uA (volts) | Maximum Zener Impedance ZZT@250uA (ohms) | Max. Reverse Leakage Current IR @ (uAdc) | VR (Vdc) | Max. Noise Density at IZ = 250uA uV/ Hz | Maximum Regulator Current IZM (mAdc) |
|-------------------|--|--|--|----------|---|--------------------------------------|
| 1N4105 | 11.0 | 200 | 0.05 | 8.5 | 40 | 21.6 |
| 1N4106 | 12.0 | 200 | 0.05 | 9.2 | 40 | 20.4 |
| 1N4107 | 13.0 | 200 | 0.05 | 9.9 | 40 | 19.0 |
| 1N4108 | 14.0 | 200 | 0.05 | 10.7 | 40 | 17.5 |
| 1N4109 | 15.0 | 200 | 0.05 | 11.4 | 40 | 16.3 |
| 1N4110 | 16.0 | 100 | 0.05 | 12.2 | 40 | 15.4 |
| 1N4111 | 17.0 | 100 | 0.05 | 13.0 | 40 | 14.5 |
| 1N4112 | 18.0 | 100 | 0.05 | 13.7 | 40 | 13.2 |
| 1N4113 | 19.0 | 150 | 0.05 | 14.5 | 40 | 12.5 |
| 1N4114 | 20.0 | 150 | 0.01 | 15.2 | 40 | 11.9 |
| 1N4115 | 22.0 | 150 | 0.01 | 16.8 | 40 | 10.8 |
| 1N4116 | 24.0 | 150 | 0.01 | 18.3 | 40 | 9.9 |
| 1N4117 | 25.0 | 150 | 0.01 | 19.0 | 40 | 9.5 |
| 1N4118 | 27.0 | 150 | 0.01 | 20.5 | 40 | 8.8 |
| 1N4119 | 28.0 | 200 | 0.01 | 21.3 | 40 | 8.5 |
| 1N4120 | 30.0 | 200 | 0.01 | 22.8 | 40 | 7.9 |
| 1N4121 | 33.0 | 200 | 0.01 | 25.1 | 40 | 7.2 |