

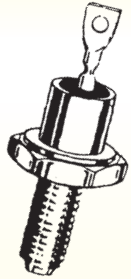


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1N2970 – 1N3015

10 WATTS ZENER DIODES

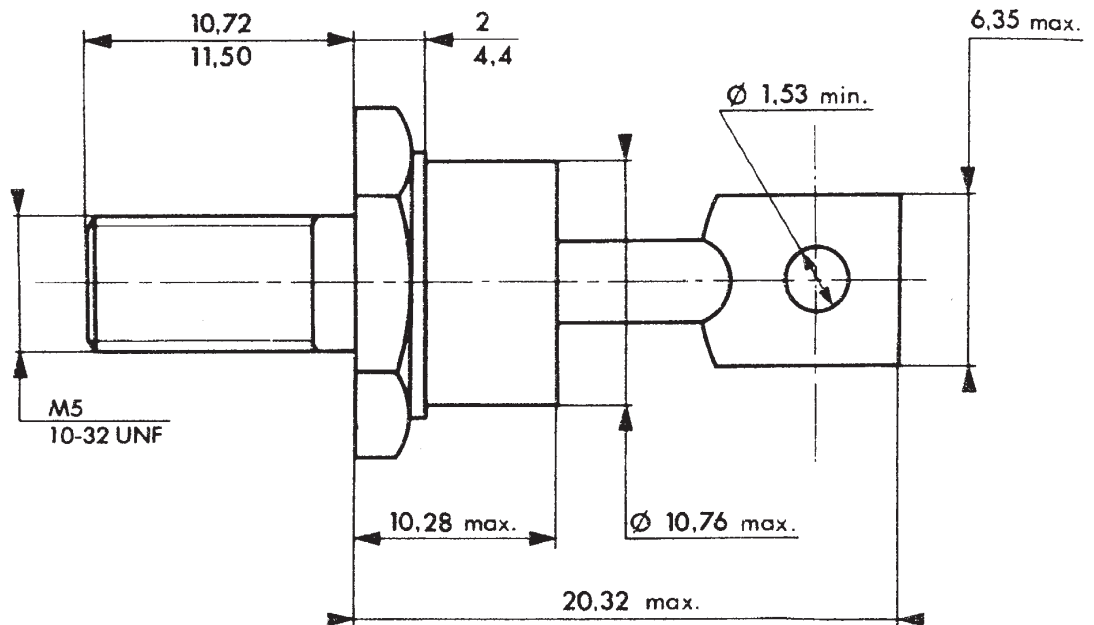


ZENER DIODES

Available with anode-to-case and cathode-to-case connections (standard and reverse polarity, i.e., 1N2970 and 1N2970R).

The type numbers shown have standard tolerance of +20% on the nominal zener voltage. Add suffix "A" for +10% units or "B" for +5% units.

D04



MAXIMUM RATINGS:

Junction and Storage Temperature: -65°C to + 175°C

DC Power Dissipation: 10 Watts (Derate 83.3 mW/°C above 55°C)

- Standard polarity is anode-to-case
- Reverse polarity with cathode-to-case by designating R suffix in part number.

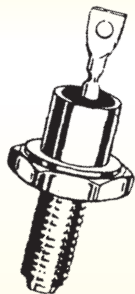


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**10 WATTS
ZENER
DIODES**



- Standard voltage tolerance are +/-5% with B suffix, +/-10% with an A suffix, and +/-20% with no suffix.
- Standard polarity is anode-to-case.
- Reverse polarity with cathode-to-case by designating R suffix in part number.

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise specified, V_F = 1.5 V max @ I_F = 2 amp on all types.)

| Type Number | Nominal Zener Voltage V _Z @ I _{ZT} Volts | Test Current (I _{ZT}) mA | Max Zener Impedance | | | Max DC Zener Current (I _{ZM}) mA | Max Reverse Current* | | |
|-------------|--|------------------------------------|--|--|--------------------|--|-------------------------|-----------------|-----------------|
| | | | Z _{ZT} @ I _{ZT} Ohms | Z _{ZK} @ I _{ZT} Ohms | I _{ZT} mA | | I _R Max (µA) | V _{R1} | V _{R2} |
| 1N2970 | 6.8 | 370 | 1.2 | 500 | 1.0 | 1,320 | 150 | 5.2 | 4.9 |
| 1N2971 | 7.5 | 335 | 1.3 | 250 | 1.0 | 1,180 | 75 | 5.7 | 5.4 |
| 1N2972 | 8.2 | 305 | 1.5 | 250 | 1.0 | 1,040 | 50 | 6.2 | 5.9 |
| 1N2973 | 9.1 | 275 | 2.0 | 250 | 1.0 | 960 | 25 | 6.9 | 6.6 |
| 1N2974 | 10 | 250 | 3 | 250 | 1.0 | 880 | 10 | 7.6 | 7.2 |
| 1N2975 | 11 | 230 | 3 | 250 | 1.0 | 780 | 5 | 8.4 | 8.0 |
| 1N2976 | 12 | 210 | 3 | 250 | 1.0 | 720 | 5 | 9.1 | 8.6 |
| 1N2977 | 13 | 190 | 3 | 250 | 1.0 | 660 | 5 | 9.9 | 9.4 |
| 1N2978 | 14 | 180 | 3 | 250 | 1.0 | 600 | 5 | 10.6 | 10.1 |
| 1N2979 | 15 | 170 | 3 | 250 | 1.0 | 560 | 5 | 11.4 | 10.8 |
| 1N2980 | 16 | 155 | 4 | 250 | 1.0 | 530 | 5 | 12.2 | 11.5 |
| 1N2982 | 18 | 140 | 4 | 250 | 1.0 | 460 | 5 | 13.7 | 13.0 |
| 1N2983 | 19 | 130 | 4 | 250 | 1.0 | 440 | 5 | 14.4 | 13.7 |
| 1N2984 | 20 | 125 | 4 | 250 | 1.0 | 420 | 5 | 15.2 | 14.4 |
| 1N2985 | 22 | 115 | 5 | 250 | 1.0 | 380 | 5 | 16.7 | 15.8 |
| 1N2986 | 24 | 105 | 5 | 250 | 1.0 | 350 | 5 | 18.2 | 17.3 |
| 1N2988 | 27 | 95 | 7 | 250 | 1.0 | 300 | 5 | 20.6 | 19.4 |
| 1N2989 | 30 | 85 | 8 | 300 | 1.0 | 280 | 5 | 22.8 | 21.6 |
| 1N2990 | 33 | 75 | 9 | 300 | 1.0 | 260 | 5 | 25.1 | 23.8 |
| 1N2991 | 36 | 70 | 10 | 300 | 1.0 | 230 | 5 | 27.4 | 25.9 |
| 1N2992 | 39 | 65 | 11 | 300 | 1.0 | 210 | 5 | 29.7 | 28.1 |
| 1N2993 | 43 | 60 | 12 | 400 | 1.0 | 195 | 5 | 32.7 | 31.0 |
| 1N2995 | 47 | 55 | 14 | 400 | 1.0 | 175 | 5 | 35.8 | 33.8 |
| 1N2996 | 50 | 50 | 15 | 500 | 1.0 | 165 | 5 | 38.0 | 36.0 |
| 1N2997 | 51 | 50 | 15 | 500 | 1.0 | 163 | 5 | 38.8 | 36.7 |
| 1N2998 | 52 | 50 | 15 | 500 | 1.0 | 160 | 5 | 39.5 | 37.4 |
| 1N2999 | 56 | 45 | 16 | 500 | 1.0 | 150 | 5 | 42.6 | 40.3 |
| 1N3000 | 62 | 40 | 17 | 600 | 1.0 | 130 | 5 | 47.1 | 44.6 |
| 1N3001 | 68 | 37 | 18 | 600 | 1.0 | 120 | 5 | 51.7 | 49.0 |
| 1N3002 | 75 | 33 | 22 | 600 | 1.0 | 110 | 5 | 56.0 | 54.0 |
| 1N3003 | 82 | 30 | 25 | 700 | 1.0 | 100 | 5 | 62.2 | 59.0 |
| 1N3004 | 91 | 28 | 35 | 800 | 1.0 | 85 | 5 | 69.2 | 65.5 |
| 1N3005 | 100 | 25 | 40 | 900 | 1.0 | 80 | 5 | 76.0 | 72.0 |
| 1N3006 | 105 | 25 | 45 | 1,000 | 1.0 | 75 | 5 | 79.8 | 75.6 |
| 1N3007 | 110 | 23 | 55 | 1,100 | 1.0 | 72 | 5 | 83.6 | 79.2 |
| 1N3008 | 120 | 20 | 75 | 1,200 | 1.0 | 67 | 5 | 91.2 | 86.4 |
| 1N3009 | 130 | 19 | 100 | 1,300 | 1.0 | 62 | 5 | 98.8 | 93.6 |
| 1N3010 | 140 | 18 | 125 | 1,400 | 1.0 | 58 | 5 | 106.4 | 100.8 |
| 1N3011 | 150 | 17 | 175 | 1,500 | 1.0 | 54 | 5 | 114.0 | 108.0 |
| 1N3012 | 160 | 16 | 200 | 1,600 | 1.0 | 50 | 5 | 121.6 | 115.2 |
| 1N3014 | 180 | 14 | 250 | 1,850 | 1.0 | 45 | 5 | 136.8 | 129.6 |
| 1N3015 | 200 | 12 | 300 | 2,000 | 1.0 | 40 | 5 | 152.0 | 144.0 |

*V_{R1} - Test Voltage for 5% Tolerance Device. V_{R2} - Test Voltage for 10% Tolerance Device. No Leakage Specified as 20% Tolerance Device.

