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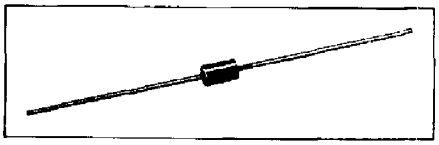
# 1N746 thru 1N759
# 1N957A thru 1N986A
# 1N4370 thru 1N4372

## GLASS ZENER DIODES
**500 MILLIWATTS**
**2.4-110 VOLTS**



### MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| DC Power Dissipation @ $T_L$ = 50°C, Lead Length = 3/8" | $P_D$ | | |
| *JEDEC Registration | | 400 | mW |
| *Derate above $T_L$ = 50°C | | 3.2 | mW/°C |
| Motorola Device Ratings | | 500 | mW |
| Derate above $T_L$ = 50°C | | 3.33 | mW/°C |
| Operating and Storage Junction Temperature Range | $T_J$, $T_{stg}$ | | °C |
| *JEDEC Registration | | -65 to +175 | |
| Motorola Device Ratings | | -65 to +200 | |

*Indicates JEDEC Registered Data

### MECHANICAL CHARACTERISTICS

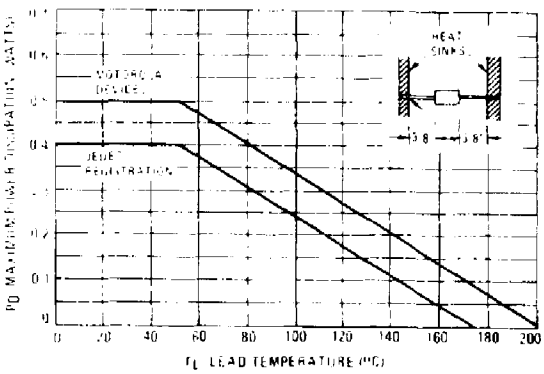
**MAXIMUM LEAD TEMPERATURE FOR SOLDERING PURPOSES:** 230°C, 1/16" from case for 10 seconds

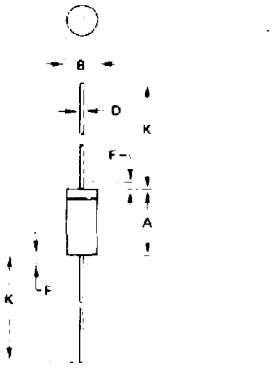
**FINISH.** All external surfaces are corrosion resistant with readily solderable leads

**POLARITY:** Cathode indicated by color band. When operated in zener mode, cathode will be positive with respect to anode.

**MOUNTING POSITION:** Any

### STEADY STATE POWER DERATING




NOTES
1. PACKAGE CONTOUR OPTIONAL WITHIN A AND B. HEAT SLUGS, IF ANY, SHALL BE INCLUDED WITHIN THIS CYLINDER, BUT NOT SUBJECT TO THE MINIMUM LIMIT OF B.
2. LEAD DIAMETER NOT CONTROLLED IN ZONE F TO ALLOW FOR FLASH, LEAD FINISH BUILDUP AND MINOR IRREGULARITIES OTHER THAN HEAT SLUGS.
3. POLARITY DENOTED BY CATHODE BAND.
4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1973.

| DIM | MILLIMETERS MIN | MILLIMETERS MAX | INCHES MIN | INCHES MAX |
|---|---|---|---|---|
| A | 3.05 | 5.08 | 0.120 | 0.200 |
| B | 1.52 | 2.29 | 0.060 | 0.090 |
| D | 0.46 | 0.56 | 0.018 | 0.022 |
| F | | 1.27 | | 0.050 |
| K | 25.40 | 38.10 | 1.000 | 1.500 |

All JEDEC dimensions and notes apply.

**(DO-35)**



**Quality Semi-Conductors**

# 1N746 thru 1N759, 1N957A thru 1N986A, 1N4370 thru 1N4372

**ELECTRICAL CHARACTERISTICS** ($T_A$ = 25°C $V_F$ = 1.5 V max at 200 mA for all types)

| Type Number (Note 1) | Nominal Zener Voltage $V_Z$ @ $I_{ZT}$ (Note 2) Volts | Test Current $I_{ZT}$ mA | Maximum Zener Impedance $Z_{ZT}$ @ $I_{ZT}$ (Note 3) Ohms | *Maximum DC Zener Current $I_{ZM}$ (Note 4) mA | | Maximum Reverse Leakage Current $T_A$ = 25°C $I_R$ @ $V_R$ = 1 V µA | Maximum Reverse Leakage Current $T_A$ = 150°C $I_R$ @ $V_R$ = 1 V µA |
|---|---|---|---|---|---|---|---|
| 1N4370 | 2.4 | 20 | 30 | 150 | 190 | 100 | 200 |
| 1N4371 | 2.7 | 20 | 30 | 135 | 165 | 75 | 150 |
| 1N4372 | 3.0 | 20 | 29 | 120 | 150 | 50 | 100 |
| 1N746 | 3.3 | 20 | 28 | 110 | 135 | 10 | 30 |
| 1N747 | 3.6 | 20 | 24 | 100 | 125 | 10 | 30 |
| 1N748 | 3.9 | 20 | 23 | 95 | 115 | 10 | 30 |
| 1N749 | 4.3 | 20 | 22 | 85 | 105 | 2 | 30 |
| 1N750 | 4.7 | 20 | 19 | 75 | 95 | 2 | 30 |
| 1N751 | 5.1 | 20 | 17 | 70 | 85 | 1 | 20 |
| 1N752 | 5.6 | 20 | 11 | 65 | 80 | 1 | 20 |
| 1N753 | 6.2 | 20 | 7 | 60 | 70 | 0.1 | 20 |
| 1N754 | 6.8 | 20 | 5 | 55 | 65 | 0.1 | 20 |
| 1N755 | 7.5 | 20 | 6 | 50 | 60 | 0.1 | 20 |
| 1N756 | 8.2 | 20 | 8 | 45 | 55 | 0.1 | 20 |
| 1N757 | 9.1 | 20 | 10 | 40 | 50 | 0.1 | 20 |
| 1N758 | 10 | 20 | 17 | 35 | 45 | 0.1 | 20 |
| 1N759 | 12 | 20 | 30 | 30 | 35 | 0.1 | 20 |

| Type Number (Note 1) | Nominal Zener Voltage $V_Z$ (Note 2) Volts | Test Current $I_{ZT}$ mA | Maximum Zener Impedance (Note 3) $Z_{ZT}$ @ $I_{ZT}$ Ohms | $Z_{ZK}$ @ $I_{ZK}$ Ohms | $I_{ZK}$ mA | *Maximum DC Zener Current $I_{ZM}$ (Note 4) mA | | Maximum Reverse Current $I_R$ Maximum µA | Test Voltage Vdc 5% $V_R$ | 10% |
|---|---|---|---|---|---|---|---|---|---|---|
| 1N957A | 6.8 | 18.5 | 4.5 | 700 | 1.0 | 47 | 61 | 150 | 5.2 | 4.9 |
| 1N958A | 7.5 | 16.5 | 5.5 | 700 | 0.5 | 42 | 55 | 75 | 5.7 | 5.4 |
| 1N959A | 8.2 | 15 | 6.5 | 700 | 0.5 | 38 | 50 | 50 | 6.2 | 5.9 |
| 1N960A | 9.1 | 14 | 7.5 | 700 | 0.5 | 35 | 45 | 25 | 6.9 | 6.6 |
| 1N961A | 10 | 12.5 | 8.5 | 700 | 0.25 | 32 | 41 | 10 | 7.6 | 7.2 |
| 1N962A | 11 | 11.5 | 9.5 | 700 | 0.25 | 28 | 37 | 5 | 8.4 | 8.0 |
| 1N963A | 12 | 10.5 | 11.5 | 700 | 0.25 | 26 | 34 | 5 | 9.1 | 8.6 |
| 1N964A | 13 | 9.5 | 13 | 700 | 0.25 | 24 | 32 | 5 | 9.9 | 9.4 |
| 1N965A | 15 | 8.5 | 16 | 700 | 0.25 | 21 | 27 | 5 | 11.4 | 10.8 |
| 1N966A | 16 | 7.8 | 17 | 700 | 0.25 | 19 | 37 | 5 | 12.2 | 11.5 |
| 1N967A | 18 | 7.0 | 21 | 750 | 0.25 | 17 | 23 | 5 | 13.7 | 13.0 |
| 1N968A | 20 | 6.2 | 25 | 750 | 0.25 | 15 | 20 | 5 | 15.2 | 14.4 |
| 1N969A | 22 | 5.6 | 29 | 750 | 0.25 | 14 | 18 | 5 | 16.7 | 15.8 |
| 1N970A | 24 | 5.2 | 33 | 750 | 0.25 | 13 | 17 | 5 | 18.2 | 17.3 |
| 1N971A | 27 | 4.6 | 41 | 750 | 0.25 | 11 | 15 | 5 | 20.6 | 19.4 |
| 1N972A | 30 | 4.2 | 49 | 1000 | 0.25 | 10 | 13 | 5 | 22.8 | 21.6 |
| 1N973A | 33 | 3.8 | 58 | 1000 | 0.25 | 9.2 | 12 | 5 | 25.1 | 23.8 |
| 1N974A | 36 | 3.4 | 70 | 1000 | 0.25 | 8.5 | 11 | 5 | 27.4 | 25.9 |
| 1N975A | 39 | 3.2 | 80 | 1000 | 0.25 | 7.8 | 10 | 5 | 29.7 | 28.1 |
| 1N976A | 43 | 3.0 | 93 | 1500 | 0.25 | 7.0 | 9.6 | 5 | 32.7 | 31.0 |
| 1N977A | 47 | 2.7 | 105 | 1500 | 0.25 | 6.4 | 8.8 | 5 | 35.8 | 33.8 |
| 1N978A | 51 | 2.5 | 125 | 1500 | 0.25 | 5.9 | 8.1 | 5 | 38.8 | 36.7 |
| 1N979A | 56 | 2.2 | 150 | 2000 | 0.25 | 5.4 | 7.4 | 5 | 42.6 | 40.3 |
| 1N980A | 62 | 2.0 | 185 | 2000 | 0.25 | 4.9 | 6.7 | 5 | 47.1 | 44.6 |
| 1N981A | 66 | 1.8 | 230 | 2000 | 0.25 | 4.5 | 6.1 | 5 | 51.7 | 49.0 |
| 1N982A | 75 | 1.7 | 270 | 2000 | 0.25 | 1.0 | 5.5 | 5 | 56.0 | 54.0 |
| 1N983A | 82 | 1.5 | 330 | 3000 | 0.25 | 3.7 | 5.0 | 5 | 62.2 | 59.0 |
| 1N984A | 91 | 1.4 | 400 | 3000 | 0.25 | 3.3 | 4.5 | 5 | 69.2 | 65.5 |
| 1N985A | 100 | 1.3 | 500 | 3000 | 0.25 | 3.0 | 4.5 | 5 | 76 | 72 |
| 1N986A | 110 | 1.1 | 750 | 4000 | 0.25 | 2.7 | 4.1 | 5 | 83.6 | 79.2 |

## NOTE 1. TOLERANCE AND VOLTAGE DESIGNATION

**Tolerance Designation**

The type numbers shown have tolerance designations as follows:

1N4370 series: ±10%, suffix A for ±5% units.

1N746 series: ±10%, suffix A for ±5% units.

1N957 series: suffix A for ±10% units,
suffix B for ±5% units.