



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
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NTE5240A thru NTE5296A 50 Watt Zener Diodes ±5% Tolerance

Features:

- Zener Voltage 3.9 to 200V
- Low Zener Impedance
- Highly Reliable and Rugged
- Also Available in Reverse Polarity (NTE5240AK thru NTE5296AK)

Maximum Ratings:

Operating Junction Temperature Range, T_{opr} -65° to +175°C
 Storage Temperature Range, T_{stg} -65° to +175°C
 DC Power Dissipation, P_D 50W
 Derate Above 75°C 0.5W/°C
 Forward Voltage ($I_F = 10A$), V_F 1.5V

Note 1. Suffix “A” denotes anode to case polarity, “AK” denotes cathode to case.

Electrical Characteristics: ($T_C = +30°C$, unless otherwise specified)

| NTE Type Number | Nominal Zener Voltage $V_Z @ I_{zt}$ (Note 2) | Zener Test Current (I_{zt}) | Maximum Dynamic Impedance (Note 3) | | Maximum DC Zener Current (I_{zm}) | Typical Temperature Coefficient α_{vz} | Maximum Leakage Current $I_R @ V_R$ | |
|-----------------|-----------------------------------------------------|------------------------------------|---------------------------------------|-------------------------|------------------------------------------|--------------------------------------------------|----------------------------------------|-------|
| | | | $Z_{zt} @ I_{zt}$ | $Z_{zk} @ 1mA (I_{zk})$ | | | μA | Volts |
| | | | Ohms | Ohms | | | | |
| NTE5240A | 3.9 | 3200 | 0.16 | 400 | 11900 | -0.046 | 150 | 0.5 |
| NTE5241A | 4.3 | 2900 | 0.16 | 500 | 10650 | -0.033 | 150 | 0.5 |
| NTE5242A | 4.7 | 2650 | 0.12 | 600 | 9700 | -0.015 | 100 | 1.0 |
| NTE5243A | 5.1 | 2450 | 0.12 | 650 | 8900 | ±0.010 | 20 | 1.0 |
| NTE5244A | 5.6 | 2250 | 0.12 | 900 | 8100 | +0.030 | 29 | 1.0 |
| NTE5245A | 6.0 | 2125 | 0.13 | 950 | 7700 | +0.040 | 20 | 1.5 |
| NTE5246A | 6.2 | 2000 | 0.14 | 1000 | 7300 | +0.049 | 20 | 2.0 |
| NTE5247A | 6.8 | 1850 | 0.20 | 70 | 6600 | 0.040 | 300 | 4.5 |
| NTE5248A | 7.5 | 1700 | 0.30 | 70 | 5900 | 0.045 | 125 | 5.0 |
| NTE5249A | 8.2 | 1500 | 0.40 | 70 | 5200 | 0.048 | 50 | 5.4 |

Electrical Characteristics (Cont'd): ($T_C = +30^\circ\text{C}$, unless otherwise specified)

| NTE Type Number | Nominal Zener Voltage $V_z @ I_{zt}$ (Note 2) | Zener Test Current (I_{zt}) | Maximum Dynamic Impedance (Note 3) | | Maximum DC Zener Current (I_{zm}) | Typical Temperature Coefficient α_{VZ} | Maximum Leakage Current $I_R @ V_R$ | |
|-----------------|-----------------------------------------------------|------------------------------------|---------------------------------------|--------------------------------|------------------------------------------|--------------------------------------------------|----------------------------------------|-------|
| | | | $Z_{zt} @ I_{zt}$ | $Z_{zk} @ 1\text{mA} (I_{zk})$ | | | μA | Volts |
| | Volts | mA | Ohms | Ohms | mA | %/ $^\circ\text{C}$ | | |
| NTE5250A | 8.7 | 1435 | 0.45 | 70 | 5000 | 0.049 | 37 | 5.7 |
| NTE5251A | 9.1 | 1370 | 0.50 | 70 | 4800 | 0.050 | 25 | 6.1 |
| NTE5252A | 10.0 | 1200 | 0.60 | 80 | 4300 | 0.055 | 25 | 6.7 |
| NTE5253A | 11.0 | 1100 | 0.80 | 80 | 3900 | 0.060 | 10 | 8.4 |
| NTE5254A | 12.0 | 1000 | 1.00 | 80 | 3800 | 0.065 | 10 | 9.1 |
| NTE5255A | 13.0 | 960 | 1.10 | 80 | 3300 | 0.065 | 10 | 9.9 |
| NTE5256A | 14.0 | 890 | 1.20 | 80 | 3000 | 0.070 | 10 | 11.4 |
| NTE5257A | 15.0 | 835 | 1.40 | 80 | 2825 | 0.070 | 10 | 11.8 |
| NTE5258A | 16.0 | 780 | 1.60 | 80 | 2650 | 0.070 | 10 | 12.2 |
| NTE5259A | 17.0 | 740 | 1.80 | 80 | 2500 | 0.075 | 10 | 13.0 |
| NTE5260A | 18.0 | 700 | 2.00 | 80 | 2300 | 0.075 | 10 | 13.7 |
| NTE5261A | 19.0 | 660 | 2.20 | 80 | 2200 | 0.075 | 10 | 13.7 |
| NTE5262A | 20.0 | 630 | 2.40 | 80 | 2100 | 0.075 | 10 | 15.2 |
| NTE5263A | 22.0 | 570 | 2.50 | 80 | 1900 | 0.080 | 10 | 16.7 |
| NTE5264A | 24.0 | 520 | 2.60 | 80 | 1750 | 0.080 | 10 | 18.2 |
| NTE5265A | 25.0 | 500 | 2.70 | 90 | 1550 | 0.080 | 10 | 18.2 |
| NTE5266A | 27.0 | 460 | 2.80 | 90 | 1500 | 0.085 | 10 | 20.6 |
| NTE5267A | 28.0 | 440 | 2.90 | 90 | 1450 | 0.085 | 10 | 21.7 |
| NTE5268A | 30.0 | 420 | 3.00 | 90 | 1400 | 0.085 | 10 | 22.8 |
| NTE5269A | 33.0 | 380 | 3.20 | 90 | 1300 | 0.085 | 10 | 25.1 |
| NTE5270A | 36.0 | 350 | 3.50 | 90 | 1150 | 0.085 | 10 | 27.4 |
| NTE5271A | 39.0 | 320 | 4.00 | 90 | 1050 | 0.090 | 10 | 29.7 |
| NTE5272A | 43.0 | 290 | 4.50 | 90 | 975 | 0.090 | 10 | 32.7 |
| NTE5273A | 45.0 | 280 | 4.50 | 100 | 930 | 0.090 | 10 | 32.7 |
| NTE5274A | 47.0 | 270 | 5.00 | 100 | 880 | 0.090 | 10 | 35.8 |
| NTE5275A | 50.0 | 250 | 5.00 | 100 | 830 | 0.090 | 10 | 38.8 |
| NTE5276A | 51.0 | 245 | 5.20 | 100 | 810 | 0.090 | 10 | 38.8 |
| NTE5277A | 52.0 | 240 | 5.50 | 100 | 790 | 0.090 | 10 | 42.6 |
| NTE5278A | 56.0 | 220 | 6.00 | 110 | 740 | 0.090 | 10 | 42.6 |
| NTE5279A | 60.0 | 210 | 6.50 | 115 | 700 | 0.090 | 10 | 44.8 |
| NTE5280A | 62.0 | 200 | 7.00 | 120 | 660 | 0.090 | 10 | 47.1 |
| NTE5281A | 68.0 | 180 | 8.00 | 140 | 600 | 0.090 | 10 | 51.7 |

Electrical Characteristics (Cont'd): ($T_C = +30^\circ\text{C}$, unless otherwise specified)

| NTE Type Number | Nominal Zener Voltage $V_z @ I_{zt}$ (Note 2) | Zener Test Current (I_{zt}) | Maximum Dynamic Impedance (Note 3) | | Maximum DC Zener Current (I_{zm}) | Typical Temperature Coefficient α_{VZ} | Maximum Leakage Current $I_R @ V_R$ | |
|-----------------|-----------------------------------------------|---------------------------------|------------------------------------|--------------------------------|---------------------------------------|-----------------------------------------------|-------------------------------------|-------|
| | | | $Z_{zt} @ I_{zt}$ | $Z_{zk} @ 1\text{mA} (I_{zk})$ | | | μA | Volts |
| | Volts | mA | Ohms | Ohms | mA | %/ $^\circ\text{C}$ | | |
| NTE5282A | 75.0 | 170 | 9.00 | 150 | 540 | 0.090 | 10 | 56.0 |
| NTE5283A | 82.0 | 150 | 11.00 | 160 | 490 | 0.090 | 10 | 62.2 |
| NTE5284A | 91.0 | 140 | 15.00 | 180 | 420 | 0.090 | 10 | 69.2 |
| NTE5285A | 100.0 | 120 | 20.00 | 200 | 400 | 0.090 | 10 | 76.0 |
| NTE5286A | 105.0 | 120 | 25.00 | 210 | 380 | 0.095 | 10 | 83.0 |
| NTE5287A | 110.0 | 110 | 30.00 | 220 | 365 | 0.095 | 10 | 83.0 |
| NTE5288A | 120.0 | 100 | 40.00 | 240 | 335 | 0.095 | 10 | 91.2 |
| NTE5289A | 130.0 | 95 | 50.00 | 275 | 310 | 0.095 | 10 | 99.8 |
| NTE5290A | 140.0 | 90 | 60.00 | 325 | 290 | 0.095 | 10 | 114.0 |
| NTE5291A | 150.0 | 85 | 75.00 | 400 | 270 | 0.095 | 10 | 114.0 |
| NTE5292A | 160.0 | 80 | 80.00 | 450 | 250 | 0.095 | 10 | 121.6 |
| NTE5293A | 175.0 | 70 | 85.00 | 500 | 230 | 0.095 | 10 | 121.6 |
| NTE5294A | 180.0 | 68 | 90.00 | 525 | 220 | 0.095 | 10 | 136.8 |
| NTE5295A | 190.0 | 66 | 95.00 | 561 | 210 | 0.098 | 10 | 144.4 |
| NTE5296A | 200.0 | 65 | 100.00 | 600 | 200 | 0.100 | 10 | 152.0 |

Note 2. Zener Voltage (V_z) is measured with junction in thermal equilibrium with 30°C stud temperature.

Note 3. The zener impedance is derived from the 60 cycle A.C. voltage, which results when an AC current having an RMS value equal to 10% of the DC zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} . Zener impedance is measured at 2 points to insure a sharp knee on the breakdown curve and to eliminate unstable units.

