

## NTE998 Integrated Circuit 1.22V Reference Diode

### **Description:**

The NTE998 is a temperature compensated low voltage reference device in a TO92 type package. A single monolithic structure is obtained by utilizing transistors and thin film resistors. Benefits of this construction is low noise, low current, and good long term stability associated with modern integrated circuits.

These characteristics make this device ideal for applications in battery operated equipment or where low power is necessary.

### **Features:**

- Low Breakdown Voltage: 1.220V typ
- Low Bias Current: 50 $\mu$ A
- Temperature Stability: .005 to .01%/ $^{\circ}$ C

### **Absolute Maximum Ratings:**

|   |                                     |
|---|-------------------------------------|
| Power Dissipation (free air) .....          | 600mW                               |
| Linear Derating Factor .....                | 5mW/ $^{\circ}$ C                   |
| Forward Current .....                       | 5mA                                 |
| Reverse Current .....                       | 5mA                                 |
| Storage Temperature .....                   | -65 $^{\circ}$ to +150 $^{\circ}$ C |
| Operating Range .....                       | 0 $^{\circ}$ to +70 $^{\circ}$ C    |
| Lead Temperature (Soldering, 10 sec.) ..... | +260 $^{\circ}$ C                   |

### **Electrical Characteristics:**

| Parameter                                 | Test Conditions             | Min  | Typ   | Max  | Unit            |
|---|-----------------------------|------|-------|------|-----------------|
| Reverse Breakdown Voltage                 | $I_R = 500\mu A$            | 1.20 | 1.22  | 1.25 | V               |
| Reverse Breakdown Voltage Change          | $50\mu A \leq I_R \leq 5mA$ | -    | 15    | 20   | mV              |
| Reverse Dynamic Impedance                 | $I_R = 50\mu A$             | -    | 1     | 2    | $\Omega$        |
|   | $I_R = 500\mu A$            | -    | 1     | 2    | $\Omega$        |
| Forward Voltage Drop                      | $I_F = 500\mu A$            | -    | 0.7   | 1.0  | V               |
| RMS Noise Voltage                         | $I_F = 500\mu A$            | -    | 0.7   | 1.0  | V               |
| Breakdown Voltage Temperature Coefficient | $50\mu A \leq I_R \leq 5mA$ | -    | 0.003 | 0.01 | %/ $^{\circ}$ C |
| Reverse Current                           |                             | 0.05 | -     | 5.0  | mA              |

