



## NTE952 Integrated Circuit Precision 2.5V Shunt

### **Description:**

The NTE952 integrated circuit is a precision 2.5V shunt regulator diode. This monolithic IC voltage reference operates as a low temperature coefficient 2.5V zener with 0.2Ω dynamic impedance. This device is rated for operation over a 0° to +70°C temperature range and is available in a TO-92 package.

### **Features:**

- Low Temperature Coefficient
- Wide Operating Current of 300μA to 10mA
- 0.2Ω Dynamic Impedance
- ±1% Initial Tolerance Available
- Guaranteed Temperature Stability
- Easily Trimmed for Minimum Temperature Drift
- Fast Turn-On

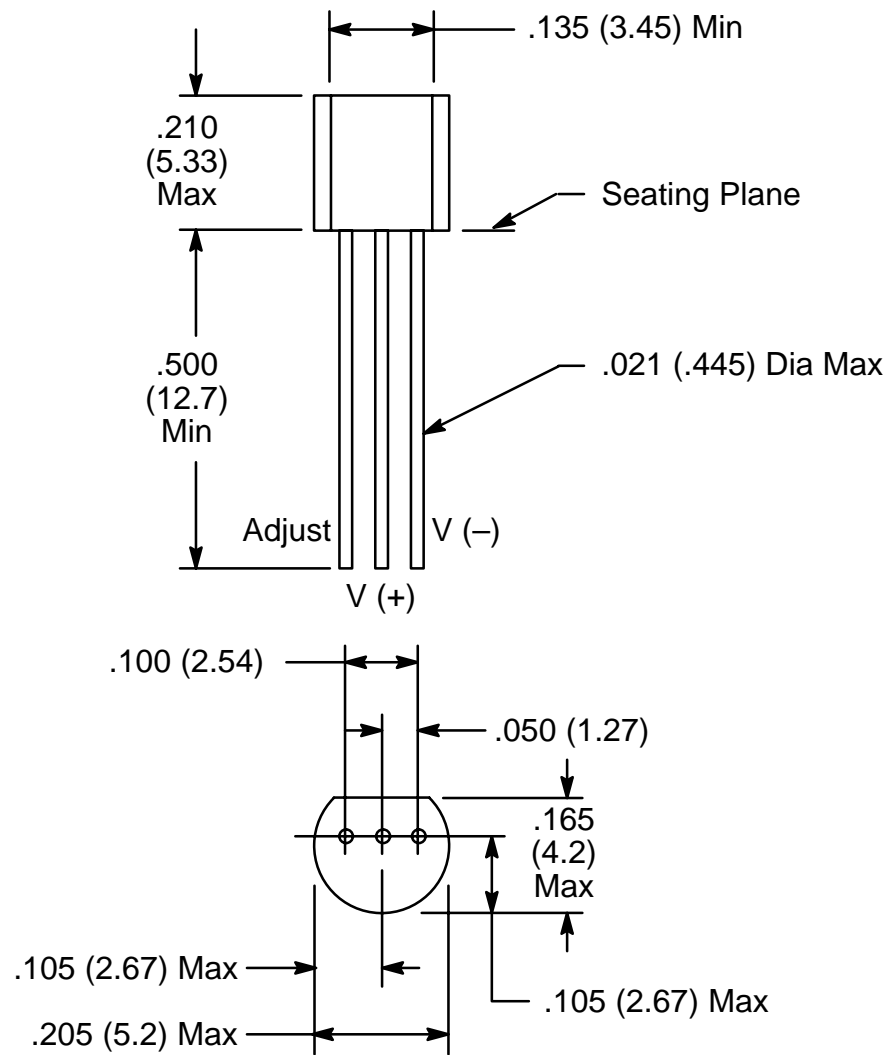
### **Absolute Maximum Ratings:**

Reverse Current,  $I_R$  ..... 15mA  
 Forward Current,  $I_F$  ..... 10mA  
 Operating Temperature Range,  $T_{opr}$  ..... 0° to +70°C  
 Storage Temperature Range,  $T_{stg}$  ..... -60° to +150°C  
 Lead Temperature (During Soldering, 10sec),  $T_L$  ..... +300°C

### **Electrical Characteristics:** (0° ≤ $T_A$ ≤ +70°C, Note 1 unless otherwise specified)

Parameter	Test Conditions	Min	Typ	Max	Unit
Reverse Breakdown Voltage	$T_A = +25^\circ\text{C}$ , $I_R = 1\text{mA}$	2.390	2.490	2.590	V
Reverse Breakdown Change with Current	$T_A = +25^\circ\text{C}$ , $400\mu\text{A} \leq I_R \leq 10\text{mA}$	—	2.6	10	mV
Reverse Dynamic Impedance	$T_A = 25^\circ\text{C}$ , $I_R = 1\text{mA}$	—	0.2	1	Ω
Temperature Stability	$V_R$ Adjusted to 2.490V, $I_R = 1\text{mA}$	—	1.8	6	mV
Reverse Breakdown Change with Current	$400\mu\text{A} \leq I_R \leq 10\text{mA}$	—	3	12	mV
Reverse Dynamic Impedance	$I_R = 1\text{mA}$	—	0.4	1.4	Ω
Long Term Stability	$T_A = +25^\circ\text{C} \pm 0.1^\circ\text{C}$ , $I_R = 1\text{mA}$	—	—	20	ppm

Note 1 Unless otherwise specified the NTE952 is specified from 0°C ≤  $T_A$  ≤ +70°C. The maximum junction temperature is 100°C. For elevated junction temperature the derating is based on 180°C/W junction to ambient with 0.4" leads from a PC board and 160°C/W junction to ambient with 0.125" lead length to a PC board.



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