



ELECTRONICS, INC.

44 FARRAND STREET  
BLOOMFIELD, NJ 07003  
(973) 748-5089

http://www.nteinc.com

## NTE109 Germanium Diode Fast Switching General Purpose

### Description:

The NTE109 is a high conductance device with good switching characteristics for low impedance circuits, high resistance–high conductance for efficient coupling, clamping and matrix service, and forward and inverse pulse recovery for critical pulse applications.

### Absolute Maximum Ratings: ( $T_A = +25^\circ\text{C}$ unless otherwise specified)

Continuous Inverse Operating Voltage (Note 1), $V_{\text{cont}}$ .....	80V
Continuous Average Forward Current, $I_F$ .....	60mA
Peak Recurrent Forward Current (Note 2) .....	325mA
Forward Surge Current (1 sec), $I_{\text{FSM}}$ .....	500mA

### Electrical Characteristics:

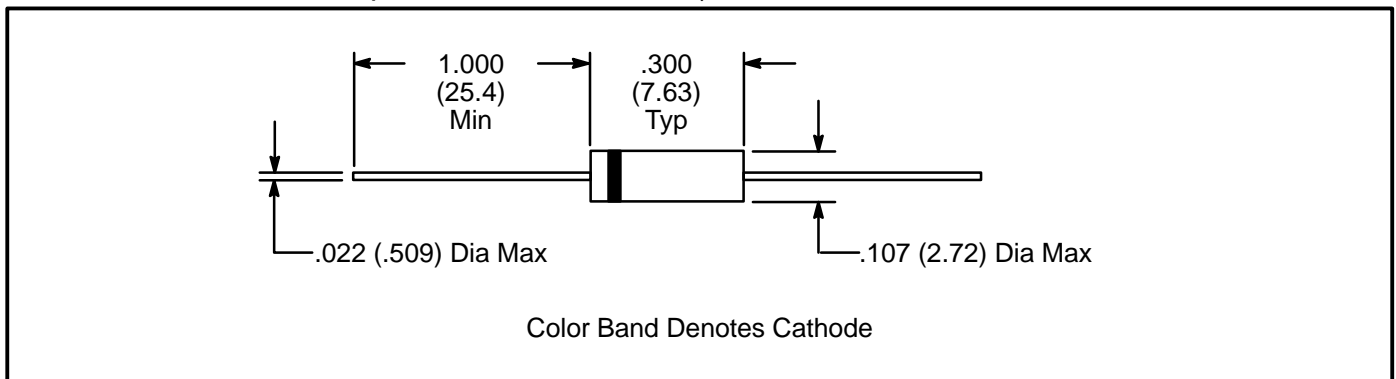
Peak Reverse Voltage, $P_{\text{RV}}$ .....	100V
Forward Voltage Drop ( $I_F = 200\text{mA}$ ), $V_F$ .....	1.0V
Maximum Reverse Leakage ( $V_R = 50\text{V}$ ), $I_R$ .....	100 $\mu\text{A}$

### Additional Specifications:

Ambient Temperature Range, $T_A$ .....	$-78^\circ$ to $+90^\circ\text{C}$
Absolute Maximum Storage Temperature Range, $T_{\text{stg}}$ .....	$-78^\circ$ to $+100^\circ\text{C}$
Average Power Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_D$ .....	80mW
Derate Above $25^\circ\text{C}$ .....	10mW/ $10^\circ\text{C}$
Average Shunt Capacitance .....	0.5 $\mu\text{fd}$
Average 100mc Rect. Efficient .....	55%

Note 1 The continuous inverse operating voltage rating,  $V_{\text{cont}}$  must be reduced when the diode is operated at elevated junction temperature. The percent derating of  $V_{\text{cont}}$  for each  $10^\circ\text{C}$  temperature increment above  $25^\circ\text{C}$  is equal to  $V_{\text{cont}}/10$ . For critical high temperature–high voltage applications, is recommended that diodes be 100% tested and specified at the elevated temperature.

Note 2 The peak operating current is generally the controlling factor in AC rectifier service and may be exceeded for pulses of less than 200 $\mu\text{s}$  duration.



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