

## NTE6407, NTE6408, NTE6411, NTE6412 Bilateral Trigger Diodes (DIACS)

### **Description:**

The NTE6407 thru NTE6412 are bilateral trigger DIACs offering a range of voltage characteristics from 28V to 63V. These devices are triggered from a blocking-to-conduction state for either polarity of applied voltage whenever the amplitude of applied voltage exceeds the breakover voltage rating of the DIAC.

### **Features:**

- Glass-Chip Passivation
- DO35 Type Trigger Package
- Wide Voltage Range Selection

### **Absolute Maximum Ratings:**

Maximum Trigger Firing Capacitance ..... 0.1 $\mu$ F  
 Device Dissipation ( $T_A = -40^\circ$  to  $+40^\circ\text{C}$ ),  $P_D$  ..... 250mW  
     Derate Above  $+40^\circ\text{C}$  ..... 3.6mW/ $^\circ\text{C}$   
 Operating Junction Temperature Range,  $T_j$  .....  $-40^\circ$  to  $+125^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-40^\circ$  to  $+125^\circ\text{C}$   
 Thermal Resistance, Junction-to-Ambient,  $R_{thJA}$  .....  $278^\circ\text{C/W}$   
 Thermal Resistance, Junction-to-Lead (Note 1),  $R_{thJL}$  .....  $100^\circ\text{C/W}$   
 Lead Temperature (During Soldering, 1/16" (1.59mm) from case, 10sec max),  $T_L$  .....  $+230^\circ\text{C}$

Note 1. Based on maximum lead temperature of  $+85^\circ\text{C}$  at  $\leq 250\text{mW}$ .

### **Electrical Characteristics:** ( $T_C = +25^\circ\text{C}$ unless otherwise specified)

| Parameter                               | Symbol          | Test Conditions | Min | Typ | Max | Unit |
|-----------------------------------------|-----------------|-----------------|-----|-----|-----|------|
| Breakover Voltage (Forward and Reverse) | $V_{BO}$        |                 |     |     |     |      |
| NTE6407                                 |                 |                 | 24  | 28  | 32  | V    |
| NTE6408                                 |                 |                 | 28  | 32  | 36  | V    |
| NTE6411                                 |                 |                 | 35  | 40  | 45  | V    |
| NTE6412                                 |                 |                 | 56  | 63  | 70  | V    |
| Breakover Voltage Symmetry              | $\Delta V_{BO}$ | Note 2          |     |     |     |      |
| NTE6407, NTE6408                        |                 |                 | –   | –   | 2   | V    |
| NTE6411                                 |                 |                 | –   | –   | 3   | V    |
| NTE6412                                 |                 |                 | –   | –   | 4   | V    |

Note 2.  $\Delta V_{BO} = [ | +V_{BO} | - | -V_{BO} | ]$ .

**Electrical Characteristics (Cont'd):** ( $T_C = +25^{\circ}\text{C}$  unless otherwise specified)

| Parameter                                       | Symbol    | Test Conditions                                               | Min | Typ | Max | Unit          |
|-------------------------------------------------|-----------|---------------------------------------------------------------|-----|-----|-----|---------------|
| Dynamic Breakback Voltage<br>NTE6407, NTE6408   | $V_{BB}$  | $ \Delta V_{\pm} $ , at 10mA, Note 3                          | 7   | –   | –   | V             |
| NTE6411                                         |           | $ \Delta V_{\pm} $ , Note 3                                   | 10  | –   | –   | V             |
| NTE6412                                         |           |                                                               | 20  | –   | –   | V             |
| Peak Breakover Current                          | $I_{BO}$  | At Breakover Voltage                                          | –   | –   | 25  | $\mu\text{A}$ |
| Peak Pulse Current<br>NTE6407, NTE6408, NTE6411 | $I_{TRM}$ | For 10 $\mu\text{s}$ , 120PPs, $T_A \leq +40^{\circ}\text{C}$ | –   | –   | 2.0 | A             |
| NTE6412                                         |           |                                                               | –   | –   | 1.5 | A             |

Note 3. Typical switching time is 900ns measured at  $I_{PK}$ .

