

## NTE2426 (NPN) & NTE2427 (PNP) Silicon Complementary Transistors Darlington Switch

### **Description:**

The NTE2426 and NTE2427 are silicon planer Darlington transistors in a SOT-89 type surface mount package designed for use in industrial switching applications such as print hammer, solenoid, relay, and lamp drivers.

### **Absolute Maximum Ratings:**

|   |                |
|---|----------------|
| Collector-Base Voltage (Open Emitter), $V_{CBO}$                            | 90V            |
| Collector-Emitter Voltage, $V_{CER}$  | 80V            |
| Emitter-Base Voltage (Open Collector), $V_{EBO}$                            | 5V             |
| Collector Current, $I_C$  |                |
| Continuous  | 500mA          |
| Peak  | 1.5A           |
| Base Current, $I_B$   | 100mA          |
| Total Power Dissipation ( $T_A \leq +25^\circ\text{C}$ , Note 1), $P_{tot}$ | 1W             |
| Operating Junction Temperature (Note 2), $T_J$                              | +150°C         |
| Storage Temperature Range, $T_{stg}$  | -65° to +150°C |
| Thermal Resistance, Junction-to-Ambient (Note 1, Note 2), $R_{thJA}$        | 125K/W         |
| Thermal Resistance, Junction-to-Tab (Note 2), $R_{thJTAB}$                  | 10K/W          |

Note 1. Device mounted on a ceramic substrate; area = 2.5cm<sup>2</sup>, thickness = 0.7mm.

Note 2. Based on maximum average junction temperature in line with common industrial practice.  
The resulting higher junction teperature of the output transistor part is taken into account.

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

| Parameter                | Symbol    | Test Conditions                             | Min  | Typ | Max | Unit          |
|--------------------------|-----------|---|------|-----|-----|---------------|
| Collector Cutoff Current | $I_{CES}$ | $V_{CER} = 80V, V_{BE} = 0$                 | —    | —   | 10  | $\mu\text{A}$ |
| Emitter Cutoff Current   | $I_{EBO}$ | $V_{EB} = 4V, I_C = 0$                      | —    | —   | 10  | $\mu\text{A}$ |
| DC Current Gain          | $h_{FE}$  | $V_{CE} = 10V, I_C = 150\text{mA}$ , Note 3 | 1000 | —   | —   |               |
|                          |           | $V_{CE} = 10V, I_C = 500\text{mA}$ , Note 3 | 2000 | —   | —   |               |

Note 3. Measured under pulsed conditions.

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

| Parameter                            | Symbol        | Test Conditions  | Min | Typ  | Max | Unit |
|--------------------------------------|---------------|--|-----|------|-----|------|
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 500\text{mA}, I_B = 0.5\text{mA}$                             | –   | –    | 1.3 | V    |
|                                      |               | $I_C = 500\text{mA}, I_B = 0.5\text{mA}, T_J = +150^{\circ}\text{C}$ | –   | –    | 1.3 | V    |
| Base–Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = 500\text{mA}, I_B = 0.5\text{mA}$                             | –   | –    | 1.9 | V    |
| Turn–On Time                         | $t_{on}$      | $I_C = 500\text{mA}, I_{B(on)} = -I_{B(off)} = 0.5\text{mA}$         | –   | 400  | –   | ns   |
| Turn–Off Time                        | $t_{off}$     |  | –   | 1500 | –   | ns   |

