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## NTE2649 (NPN) & NTE2650 (PNP) Silicon Complementary Transistors Darlington

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

|  |                                     |
|--|-------------------------------------|
| Collector-Base Voltage, $V_{CBO}$ .....                                | 200V                                |
| Collector-Emitter Voltage, $V_{CEO}$ .....                             | 180V                                |
| Emitter-Base Voltage, $V_{EBO}$ .....                                  | 5V                                  |
| Collector Current, $I_C$ .....   | 15A                                 |
| Base Current, $I_B$ .....  | 1A                                  |
| Collector Power Dissipation ( $T_A = +25^\circ\text{C}$ ), $P_C$ ..... | 130W                                |
| Operating Junction Temperature, $T_J$ .....                            | $+150^\circ\text{C}$                |
| Storage Temperature Range, $T_{stg}$ .....                             | $-55^\circ$ to $+150^\circ\text{C}$ |

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

| Parameter                            | Symbol        | Test Conditions                                 | Min  | Typ | Max | Unit             |
|--------------------------------------|---------------|---|------|-----|-----|------------------|
| Collector Cutoff Current             | $I_{CBO}$     | $V_{CB} = 200\text{V}, I_E = 0$                 | -    | -   | 100 | $^\circ\text{A}$ |
| Emitter Cutoff Current               | $I_{EBO}$     | $V_{EB} = 5\text{V}, I_C = 0$                   | -    | -   | 100 | $^\circ\text{A}$ |
| Collector-Emitter Breakdown Voltage  | $V_{(BR)CEO}$ | $I_C = 30\text{mA}$                             | 180  | -   | -   | V                |
| DC Current Gain                      | $h_{FE}$      | $V_{CE} = 4\text{V}, I_C = 10\text{A}$          | 5000 | -   | -   |                  |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 10\text{A}, I_B = 10\text{mA}$           | -    | -   | 2.5 | V                |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C = 10\text{A}, I_B = 10\text{mA}$           | -    | -   | 3.0 | V                |
| Transition Frequency                 | $f_T$         | $V_{CE} = 12\text{V}, I_E = 2\text{A}$          | -    | 70  | -   | MHz              |
| Collector Output Capacitance         | $C_{ob}$      | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$ | -    | 120 | -   | pF               |

### Schematic Diagram

