

NTE214 Silicon NPN Transistor Darlington Driver

Description:

The NTE214 is a silicon NPN Darlington transistor in a TO3P type package. Typical applications include motor drivers, printer hammer drivers, relay drivers, regulated DC power supply controllers.

Features:

- High DC Current Gain
- Large Current Capacity and Wide ASO
- Low Saturation Voltage

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

| | |
|--|----------------|
| Collector to Base Voltage, V_{CBO} | 70V |
| Collector to Emitter Voltage, V_{CEO} | 60V |
| Emitter to Base Voltage, V_{EBO} | 6V |
| Collector Current, I_C | |
| Continuous | 10A |
| Peak | 15A |
| Collector Dissipation ($T_A = +25^\circ\text{C}$), P_C | 2.5W |
| Collector Dissipation ($T_C = +25^\circ\text{C}$), P_C | 60W |
| Operating Junction Temperature, T_J | +150°C |
| Storage Temperature Range, T_{stg} | -55° to +150°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} | $V_{CB} = 40V, I_E = 0$ | - | - | 0.1 | mA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | - | - | 3.0 | mA |
| DC Current Gain | h_{FE} | $V_{CE} = 2V, I_C = 5A$ | 2000 | 5000 | - | |
| Current Gain–Bandwidth Product | f_T | $V_{CE} = 5V, I_C = 5A$ | - | 20 | - | MHz |
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 5A, I_B = 10mA$ | - | 0.9 | 1.5 | V |
| Base–Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 5A, I_B = 10mA$ | - | - | 2.0 | V |
| Collector–Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = 5mA, I_E = 0$ | 70 | - | - | V |
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 50mA, R_{BE} = \infty$ | 60 | - | - | V |
| Turn–On Time | t_{on} | $V_{CC} = 20V, V_{BE} = -5V,$ $500I_{B1} = -500I_{B2} = I_C = 5A,$ $PW = 50\mu s, \text{Duty Cycle} \leq 1\%$ | - | 0.6 | - | μs |
| Storage Time | t_{stg} | | - | 3.0 | - | μs |
| Fall Time | t_f | | - | 1.8 | - | μs |

Schematic Diagram

