



ELECTRONICS, INC.

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NTE2361 (NPN) & NTE2362 (PNP) Silicon Complementary Transistors High Speed Switch

Description:

The NTE2361 (NPN) and NTE2362 (PNP) complimentary silicon transistors are designed for general-purpose amplifier and high speed switching applications. The high gain of these devices makes it possible for them to be driven directly from integrated circuits.

Features:

- Very Small-Sized Package
- High Breakdown Voltage: $V_{CEO} = 50V$

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

| | |
|---|----------------------------------|
| Collector-Base Voltage, V_{CBO} | 60V |
| Collector-Emitter Voltage, V_{CEO} | 50V |
| Emitter-Base Voltage, V_{EBO} | 5V |
| Collector Current, I_C | |
| Continuous | 500mA |
| Peak | 800mA |
| Collector Dissipation, P_C | 300mW |
| Operating Junction Temperature Range, T_J | -55° to $+150^{\circ}C$ |
| Storage Temperature Range, T_{stg} | -55° to $+150^{\circ}C$ |

Note 1. For PNP device (NTE2362), voltage and current values are negative.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit | |
|--------------------------|-----------|---------------------------------|---------|-----|-----|---------|-----|
| Collector Cutoff Current | I_{CBO} | $V_{CB} = 40V_{dc}, I_E = 0$ | - | - | 0.1 | μA | |
| Emitter Cutoff Current | I_{EBO} | $V_{BE} = 4V_{dc}$ | - | - | 0.1 | μA | |
| DC Current Gain | h_{FE} | $V_{CE} = 5V, I_C = 10mA$ | 200 | - | 400 | | |
| Gain Bandwidth Product | f_T | $V_{CE} = 10V,$ $I_C = 50mA$ | NTE2361 | - | 200 | - | MHz |
| | | | NTE2362 | - | 300 | - | MHz |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit | |
|--------------------------------------|---------------|--|---------|-----|------|------|----|
| Output Capacitance | C_{ob} | $V_{CB} = 10\text{Vdc}$, $f = 1\text{MHz}$ | NTE2361 | – | 5.6 | – | pF |
| | | | NTE2362 | – | 3.7 | – | pF |
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 100\text{mA}$, $I_B = 10\text{mA}$ | NTE2361 | – | 0.15 | 0.4 | V |
| | | | NTE2362 | – | 0.1 | 0.3 | V |
| Base–Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 100\text{mA}$, $I_B = 10\text{mA}$ | – | 0.8 | 1.2 | V | |
| Collector–Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = 10\mu\text{A}$, $I_E = 0$ | 60 | – | – | V | |
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 100\mu\text{A}$, $R_{BE} = \infty$ | 50 | – | – | V | |
| Emitter–Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = 10\mu\text{A}$, $I_C = \infty$ | 5 | – | – | V | |
| Rise Time | t_{on} | $V_{CC} = 20\text{V}$, $I_C = 100\text{mA}$, $I_{B1} = 10\text{mA}$, $I_{B2} = 100\text{mA}$ | – | 70 | – | ns | |
| Storage Time | t_{stg} | | – | 400 | – | ns | |
| Fall Time | t_f | | NTE2361 | – | 50 | – | ns |
| | | NTE2362 | – | 70 | – | ns | |

Note 1. For PNP device (NTE2362), voltage and current values are negative.

Note 2. Conditions apply to both except where noted.

