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# NTE36 (NPN) & NTE37 (PNP)
# Silicon Complementary Transistors
# AF Power Amplifier, High Current Switch

**Description:**

The NTE36 (NPN) and NTE37 (PNP) are silicon complementary transistors in a TO3P type case designed for AF power amplifier and high current switching applications.

**Absolute Maximum Ratings:** ($T_A$ = +25°C unless otherwise specified)

Collector–Emitter Voltage, $V_{CEO}$ . . . . . 140V
Collector–Base Voltage, $V_{CBO}$ . . . . . 160V
Emitter–Base Voltage, $V_{EBO}$ . . . . . 6V
Collector Current, $I_C$
  Continuous . . . . . 12A
  Peak . . . . . 15A
Total Power Dissipation ($T_C$ = +25°C), $P_D$ . . . . . 100W
Operating Junction Temperature, $T_J$ . . . . . +150°C
Storage Temperature Range, $T_{stg}$ . . . . . –40° to +150°C

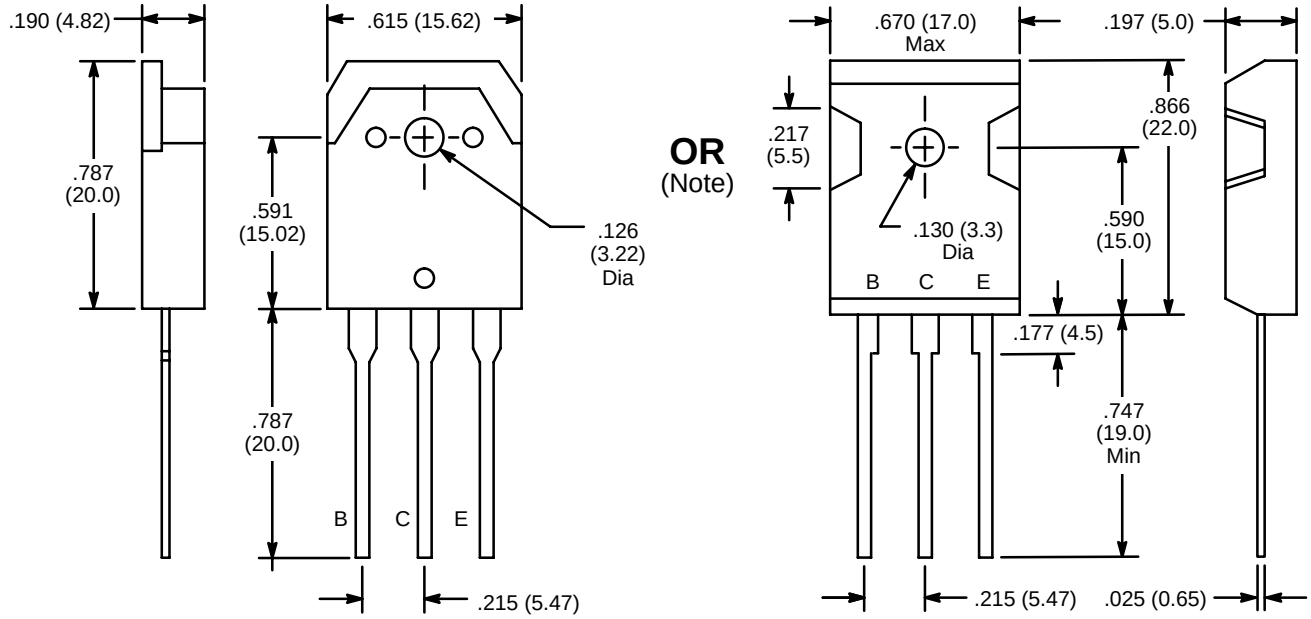
**Electrical Characteristics:** ($T_A$ = +25°C unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector Cutoff Current | $I_{CEO}$ | $V_{CB}$ = 80V, $I_E$ = 0 | – | – | 0.1 | mA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{BE}$ = 4V, $I_C$ = 0 | – | – | 0.1 | mA |
| DC Current Gain | $h_{FE1}$ | $V_{CE}$ = 5V, $I_C$ = 1A | 60 | – | 200 | |
| | $h_{FE2}$ | $V_{CE}$ = 5V, $I_C$ = 6A | 20 | – | – | |
| Gain Bandwidth Product | $f_T$ | $V_{CE}$ = 5V, $I_C$ = 1A | – | 15 | – | MHz |
| Output Capacitance<br>NTE36<br>NTE37 | $C_{ob}$ | $V_{CB}$ = 10V, f = 1MHz | <br>–<br>– | <br>210<br>300 | <br>–<br>– | pF |
| Base–Emitter Voltage | $V_{BE}$ | $V_{CE}$ = 5V, $I_C$ = 1A | – | – | 1.5 | V |
| Collector–Emitter Saturation Voltage<br>NTE36<br>NTE37 | $V_{CE(sat)}$ | $I_C$ = 5A, $I_B$ = 500mA | <br>–<br>– | <br>0.6<br>1.1 | <br>2.5<br>– | V |

**Electrical Characteristics (Cont'd):** ($T_A$ = +25°C unless otherwise specified)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Collector–Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C$ = 5mA, $I_E$ = 0 | 160 | – | – | V |
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C$ = 5mA, $R_{BE}$ = ∞ | 140 | – | – | V |
| | | $I_C$ = 50mA, $R_{BE}$ = ∞ | 140 | – | – | V |
| Emitter–Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E$ = 5mA, $I_C$ = 0 | 6 | – | – | V |
| Turn–On Time<br>NTE36<br>NTE37 | $t_{on}$ | $10I_{B1} = -10I_{B2} = I_C$ = 1A,<br>PW = 20µs | <br>–<br>– | <br>0.26<br>0.25 | <br>–<br>– | µs |
| Fall Time<br>NTE36<br>NTE37 | $t_f$ | | <br>–<br>– | <br>0.68<br>0.53 | <br>–<br>– | µs |
| Storage Time<br>NTE36<br>NTE37 | $t_{on}$ | | <br>–<br>– | <br>6.88<br>1.61 | <br>–<br>– | µs |

Note 1. Matched complementary pairs are available upon request (NTE37MCP). Matched complementary pairs have their gain specification ($h_{FE}$) matched to within 10% of each other.




**NOTE:** Either case style may be shipped depending on stock.