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NTE24 (NPN) & NTE25 (PNP) Silicon Complementary Transistors General Purpose Amplifier, Switch

Description:

The NTE24 (NPN) and NTE25 (PNP) are complementary silicon transistors in a TO237 type package designed for general purpose medium power amplifier and switching circuits that require collector currents to 1A.

Features:

- High Collector–Emitter Breakdown Voltage: $V_{CEO} = 80V$
- Exceptional Power Dissipation Capability

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

| | |
|---|-------------------------------|
| Collector–Base Voltage, V_{CBO} | 100V |
| Collector–Emitter Voltage, V_{CEO} | 80V |
| Emitter–Base Voltage, V_{EBO} | 5V |
| Collector Current, I_C | |
| Continuous | 1A |
| Peak | 2A |
| Power Dissipation, P_D | |
| $T_A = +25^\circ C$ | 850mW |
| $T_C = +25^\circ C$ | 2W |
| Junction Temperature, $T_{J(max)}$ | $+150^\circ C$ |
| Storage Temperature Range, T_{stg} | -55° to $+150^\circ C$ |
| Thermal Resistance, Junction–to–Case, R_{thJC} | $50^\circ C/W$ |
| Thermal Resistance, Junction–to–Ambient, R_{thJA} | $167^\circ C/W$ |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|-------------------------------------|-----------------|----------------------------|-----|-----|-----|---------|
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 10mA, I_B = 0$ | 80 | – | – | V |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = 100V, I_E = 0$ | – | – | 0.1 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 5V, I_C = 0$ | – | – | 100 | nA |
| DC Current Gain | h _{FE} | $V_{CE} = 2V, I_C = 50mA$ | 40 | – | – | |
| | | $V_{CE} = 2V, I_C = 250mA$ | 40 | – | – | |
| | | $V_{CE} = 2V, I_C = 500mA$ | 25 | – | – | |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|------|
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 500\text{mA}, I_B = 50\text{mA}$ | – | – | 0.5 | V |
| | | $I_C = 1000\text{mA}, I_B = 100\text{mA}$ | – | – | 1.5 | V |
| Base–Emitter ON Voltage | $V_{BE(on)}$ | $V_{CE} = 2\text{V}, I_C = 1000\text{mA}$ | – | – | 0.5 | V |
| Current Gain Bandwidth Product | f_T | $V_{CE} = 5\text{V}, I_C = 200\text{mA}, f = 100\text{MHz}$ | 50 | – | – | MHz |
| Output Capacitance | C_{ob} | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$ | – | – | 30 | pF |

