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NTE152 (NPN) & NTE153 (PNP) Silicon Complementary Transistors Audio Power Amplifier, Switch

Description:

The NTE152 (NPN) and NTE153 (PNP) are silicon complementary transistors in a standard TO220 type package designed for general purpose medium power switching and amplifier applications.

Features:

- Good Linearity of h_{FE}

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

| | |
|--|----------------|
| Collector–Base Voltage, V_{CBO} | 90V |
| Collector–Emitter Voltage, V_{CEO} | 90V |
| Emitter–Base Voltage, V_{EBO} | 5V |
| Collector Current, I_C | 4A |
| Emitter Current, I_E | –4A |
| Base Current, I_B | 3A |
| Collector Power Dissipation ($T_C = +25^\circ\text{C}$), P_C | 40W |
| Junction Temperature, T_J | +150°C |
| Storage Temperature Range, T_{stg} | –55° to +150°C |

Note 1. NTE152MP is a matched pair of NTE152 with their DC Current Gain (h_{FE}) matched to within 10% of each other.

Note 2. Matched complementary pairs are available upon request (NTE55MCP). Matched complementary pairs have their gain specification (h_{FE}) matched to within 10% of each other.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|---------------|
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 50\text{mA}, I_B = 0$ | 90 | – | – | V |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = 90\text{V}, I_E = 0$ | – | – | 20 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 5\text{V}, I_C = 0$ | – | – | 10 | μA |
| DC Current Gain | h_{FE1} | $V_{CE} = 5\text{V}, I_C = 0.5\text{A}$ | 40 | – | 200 | |
| | h_{FE2} | $V_{CE} = 5\text{V}, I_C = 3\text{A}$ | 15 | – | – | |
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 3\text{A}, I_B = 0.3\text{A}$ | – | – | 1.5 | V |
| Base–Emitter Voltage | V_{BE} | $V_{CE} = 5\text{V}, I_C = 3\text{A}$ | – | – | 1.5 | V |
| Transition Frequency | f_T | $V_{CE} = 5\text{V}, I_C = 0.5\text{A}$ | 3 | 8 | – | MHz |
| Collector Output Capacitance | C_{ob} | $V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$ | – | 85 | – | pF |

