



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089

NTE218 Silicon PNP Transistor Audio Power Output

Description:

The NTE218 is ideal for use as a driver, switch and medium-power amplifier applications. This device features:

Features:

- Low Saturation Voltage – $0.6V_{CE(sat)}$ @ $I_C = 1A$
- High Gain Characteristics – h_{FE} @ $I_C = 250mA$: 30–100
- Excellent Safe Area Limits

Absolute Maximum Ratings:

| | |
|---|-------------------------------|
| Collector–Emitter Voltage, V_{CEO} | 80V |
| Collector–Base Voltage, V_{CB} | 80V |
| Emitter–Base Voltage, V_{EB} | 7V |
| Collector Current, I_C | |
| Continuous | 4A |
| Peak (Note 1) | 10A |
| Base Current, I_B | 2A |
| Total Device Dissipation ($T_C = +25^\circ C$), P_D | 25W |
| Derate above $25^\circ C$ | 0.143W/ $^\circ C$ |
| Operating Junction Temperature Range, T_J | -65° to $+200^\circ C$ |
| Storage Temperature Range, T_{stg} | -65° to $+200^\circ C$ |

Note 1 Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 2.0\%$.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|----------------|--|-----|-----|-----|---------|
| OFF Characteristics | | | | | | |
| Collector–Emitter Sustaining Voltage | $V_{CEO(sus)}$ | $I_C = 100mA, I_B = 0, \text{Note 1}$ | 80 | – | – | V |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 7V$ | – | – | 0.5 | mA |
| Collector Cutoff Current | I_{CEX} | $V_{CE} = 80V, V_{BE(off)} = 1.5V$ | – | – | 100 | μA |
| | | $V_{CE} = 60V, V_{BE(off)} = 1.5V, T_C = +150^\circ C$ | – | – | 1.0 | mA |
| | I_{CEO} | $V_{CE} = 60V, I_B = 0$ | – | – | 1.0 | mA |
| | I_{CBO} | $V_{CB} = 80V, I_E = 0$ | 1 | – | 100 | μA |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|------|
| ON Characteristics (Note 1) | | | | | | |
| DC Current Gain | h_{FE} | $V_{CE} = 1\text{V}, I_C = 100\text{mA}$ | 40 | - | - | |
| | | $V_{CE} = 1\text{V}, I_C = 250\text{mA}$ | 30 | - | 100 | |
| | | $V_{CE} = 1\text{V}, I_C = 500\text{mA}$ | 20 | - | - | |
| | | $V_{CE} = 1\text{V}, I_C = 1\text{A}$ | 10 | - | - | |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 1\text{A}, I_B = 125\text{mA}$ | - | - | 0.6 | V |
| Base-Emitter Voltage | V_{BE} | $V_{CE} = 1\text{V}, I_C = 250\text{mA}$ | - | - | 1.0 | V |
| Transient Characteristics | | | | | | |
| Current Gain Bandwidth Product | f_T | $V_{CE} = 1\text{V}, I_C = 250\text{mA}, f = 1\text{MHz}$ | 3 | - | - | MHz |
| Common Base Output Capacitance | C_{ob} | $V_{CE} = 10\text{V}, I_C = 0, f = 100\text{kHz}$ | - | - | 100 | pF |
| Small-Signal Current Gain | h_{fe} | $V_{CE} = 10\text{V}, I_C = 50\text{mA}, f = 1\text{kHz}$ | 25 | - | - | |

Note 1 Pulse Test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

