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NTE2409 Silicon PNP Transistor General Purpose Amp, Surface Mount (Compl to NTE2408)

Description:

The NTE2409 is a silicon PNP general purpose transistor in a SOT-23 type surface mount package designed for use in driver stages of audio amplifiers in thick and thin-film hybrid circuits.

Absolute Maximum Ratings:

| | |
|--|-----------------|
| Collector-Base Voltage, V_{CBO} | 80V |
| Collector-Emitter Voltage, V_{CEX} | 80V |
| Collector-Emitter Voltage, V_{CEO} | 65V |
| Emitter-Base Voltage, V_{EBO} | 5V |
| Collector Current, I_C | |
| Continuous | 100mA |
| Peak | 200mA |
| Peak Emitter Current, I_{EM} | 200mA |
| Peak Base Current, I_{BM} | 200mA |
| Total Power Dissipation ($T_A = +60^\circ\text{C}$, Note 1), P_{tot} | 200mW |
| Junction Temperature, T_J | +150°C |
| Storage Temperature Range, T_{stg} | -65 ° to +150°C |
| Thermal Resistance, Junction-to-Tab, R_{thJT} | 60K/W |
| Thermal Resistance, Tab-to-Soldering Points, R_{thTS} | 280K/W |
| Thermal Resistance, Soldering Points-to-Ambient (Note 1), R_{thSA} | 90K/W |

Note 1. Mounted on a ceramic substrate .314 (8mm) x .393 (10mm) x .027 (0.7mm).

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|--|-----|-----|-----|---------------|
| Collector Cutoff Current | I_{CBO} | $V_{CB} = 30\text{V}, I_E = 0$ | - | 1 | 15 | nA |
| | | $V_{CB} = 30\text{V}, I_E = 0, T_J = +150^\circ\text{C}$ | - | - | 4 | μA |
| Base-Emitter Voltage | V_{BE} | $V_{CE} = 5\text{V}, I_C = 2\text{mA}$, Note 2 | 600 | 650 | 750 | mV |
| | | $V_{CE} = 5\text{V}, I_C = 10\text{mA}$, Note 2 | - | - | 820 | mV |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 10\text{mA}, I_B = 0.5\text{mA}$, Note 3 | - | 75 | 300 | mV |
| | | $I_C = 100\text{mA}, I_B = 5\text{mA}$, Note 3 | - | 250 | 650 | mV |

Note 2. V_{BE} decreases by about 2mV/K with increasing temperature.

Note 3. $V_{BE(sat)}$ decreases by about 1.7mV with increasing temperature.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---------------------------------|---------------|--|-----|-----|-----|------|
| Base-Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 10\text{mA}, I_B = 0.5\text{mA}, \text{Note 3}$ | - | 700 | - | mV |
| | | $I_C = 100\text{mA}, I_B = 5\text{mA}, \text{Note 3}$ | - | 850 | - | mV |
| DC Current Gain | h_{FE} | $V_{CE} = 5\text{V}, I_C = 2\text{mA}$ | 220 | - | 475 | |
| Transition Frequency | f_T | $V_{CE} = 5\text{V}, I_C = 10\text{mA}, f = 35\text{MHz}$ | - | 150 | - | MHz |
| Collector Capacitance | C_c | $V_{CB} = 10\text{V}, I_E = I_e = 0, f = 1\text{MHz}$ | - | 4.5 | - | pF |
| Small-Signal Current Gain | h_{fe} | $V_{CE} = 5\text{V}, I_C = 2\text{mA}$ | 75 | - | 900 | |
| Noise Figure | NF | $V_{CE} = 5\text{V}, I_C = 200\mu\text{A}, f = 1\text{kHz}, B = 200\text{Hz}, R_S = 2\text{k}\Omega$ | - | 2 | 10 | dB |

Note 3. $V_{BE(sat)}$ decreases by about 1.7mV with increasing temperature.

