

NTE2410
Silicon NPN Transistor
High Voltage Amp/Driver
(Comp to NTE2411)

Description:

The NTE2410 is a silicon NPN transistor in an SOT-23 type surface mount case designed for use in high voltage applications.

Absolute Maximum Ratings:

| | |
|---|---------------------------------------|
| Collector-Emitter Voltage, V_{CEO} | 160V |
| Collector-Base Voltage, V_{CBO} | 180V |
| Emitter-Base Voltage, V_{EBO} | 6V |
| Continuous Collector Current, I_C | 600mA |
| Total Power Dissipation ($T_A = +25^\circ\text{C}$, FR-5 Board, Note 1), P_D | 225mW |
| Derate Above 25°C | 1.8mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient, R_{thJA} | 556 $^\circ\text{C}/\text{mW}$ |
| Total Power Dissipation ($T_A = +25^\circ\text{C}$, Alumina Substrate, Note 2), P_D | 300mW |
| Derate Above 25°C | 2.4mW/ $^\circ\text{C}$ |
| Thermal Resistance, Junction-to-Ambient, R_{thJA} | 417 $^\circ\text{C}/\text{mW}$ |
| Operating Junction Temperature Range, T_J | -55 $^\circ$ to +150 $^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | -55 $^\circ$ to +150 $^\circ\text{C}$ |

Note 1. FR-5 = 1.000 (25.4mm) x .750 (19.05mm) x .062 (1.57mm).

Note 2. Alumina = .400 (10.2mm) x .300 (7.62mm) x .024 (.609mm), 99.5% alumina.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|-------------------------------------|---------------|---|-----|-----|-----|---------------|
| OFF Characteristics | | | | | | |
| Collector-Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 1\text{mA}$, $I_B = 0$, Note 3 | 160 | - | - | V |
| Collector-Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = 100\mu\text{A}$, $I_E = 0$ | 180 | - | - | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = 10\mu\text{A}$, $I_C = 0$ | 6 | - | - | V |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = 120\text{V}$, $I_E = 0$ | - | - | 50 | nA |
| | | $V_{CB} = 120\text{V}$, $I_E = 0$, $T_A = +100^\circ\text{C}$ | - | - | 50 | μA |
| Emitter Cutoff Current | I_{EBO} | $V_{EB} = 4\text{V}$, $I_C = 0$ | - | - | 50 | nA |

Note 3. Pulse Test: Pulse Width = 300 μs , Duty Cycle = 2%.

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|------|------|
| ON Characteristics (Note 3) | | | | | | |
| DC Current Gain | h_{FE} | $I_C = 1\text{mA}, V_{CE} = 5\text{V}$ | 80 | – | – | |
| | | $I_C = 10\text{mA}, V_{CE} = 5\text{V}$ | 80 | – | 250 | |
| | | $I_C = 50\text{mA}, V_{CE} = 5\text{V}$ | 30 | – | – | |
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 10\text{mA}, I_B = 1\text{mA}$ | – | – | 0.15 | V |
| | | $I_C = 50\text{mA}, I_B = 5\text{mA}$ | – | – | 0.20 | V |
| Base–Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 10\text{mA}, I_B = 1\text{mA}$ | – | – | 1.0 | V |
| | | $I_C = 50\text{mA}, I_B = 5\text{mA}$ | – | – | 1.0 | V |

Note 3. Pulse Test: Pulse Width = 300 μs , Duty Cycle = 2%.

