



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

NTE2323 Silicon NPN Transistor Quad, Amplifier

Absolute Maximum Ratings:

| | |
|---|-------------------------------------|
| Collector–Emitter Voltage, V_{CEO} | 200V |
| Collector–Base Voltage, V_{CBO} | 200V |
| Emitter–Base Voltage, V_{EBO} | 5V |
| Continuous Collector Current, I_C | 500mA |
| Total Device Dissipation ($T_A = +25^\circ\text{C}$, Each Die), P_D | 0.75W |
| Derate Above 25°C | 5.98mW/ $^\circ\text{C}$ |
| Total Device Dissipation ($T_A = +25^\circ\text{C}$, Four Die Equal Power), P_D | 1.7W |
| Derate Above 25°C | 13.6mW/ $^\circ\text{C}$ |
| Operating Junction Temperature Range, T_J | -55° to $+150^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | -55° to $+150^\circ\text{C}$ |
| Thermal Reistance, Junction–to–Ambient, R_{thJA} | |
| Each Die | 167 $^\circ\text{C}/\text{W}$ |
| Effective, 4 Die | 73.5 $^\circ\text{C}/\text{W}$ |
| Thermal Reistance, Junction–to–Case, R_{thJC} | |
| Each Die | 100 $^\circ\text{C}/\text{W}$ |
| Effective, 4 Die | 39 $^\circ\text{C}/\text{W}$ |
| Coupling Factors, Junction–to–Ambient | |
| Q1–Q4 or Q2–Q3 | 56% |
| Q1–Q2 or Q3–Q4 | 10% |
| Coupling Factors, Junction–to–Case | |
| Q1–Q4 or Q2–Q3 | 46% |
| Q1–Q2 or Q3–Q4 | 5% |

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 | $V_{(BR)CEO}$ | $I_C = 1\text{mA}, I_B = 0$ | 200 | – | – | V |
| Collector–Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = 100\mu\text{A}, I_E = 0$ | 20 | – | – | V |
| Emitter–Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = 100\mu\text{A}, I_C = 0$ | 5 | – | – | V |
| Collector Cutoff Current | I_{CBO} | $V_{CB} = 150\text{V}, I_E = 0$ | – | – | 100 | nA |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--------------------------------------|---------------|---|-----|-----|-----|------|
| ON Characteristics | | | | | | |
| DC Current Gain | h_{FE} | $V_{CE} = 10\text{V}, I_C = 1\text{mA}$ | 25 | 45 | – | |
| | | $V_{CE} = 10\text{V}, I_C = 10\text{mA}$ | 40 | 60 | – | |
| | | $V_{CE} = 10\text{V}, I_C = 30\text{mA}$ | 40 | 80 | – | |
| Collector–Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C = 20\text{mA}, I_B = 2\text{mA}$ | – | 0.3 | 0.5 | V |
| Base–Emitter Saturation Voltage | $V_{BE(sat)}$ | $I_C = 20\text{mA}, I_B = 2\text{mA}$ | – | 0.7 | 0.9 | V |
| Current Gain–Bandwidth Product | f_T | $V_{CE} = 20\text{V}, I_C = 10\text{mA}, f = 100\text{MHz}$ | 50 | 80 | – | MHz |
| Output Capacitance | C_{obo} | $V_{CB} = 20\text{V}, I_E = 0, f = 1\text{MHz}$ | – | 2.5 | 5.0 | pF |
| Input Capacitance | C_{ibo} | $V_{EB} = 3\text{V}, I_C = 0, f = 1\text{MHz}$ | – | 40 | 50 | pF |

Pin Connection Diagram

