



ELECTRONICS, INC.
 44 FARRAND STREET
 BLOOMFIELD, NJ 07003
 (973) 748-5089
<http://www.nteinc.com>

NTE364 Silicon NPN Transistor RF Power

Description:

The NTE364 is designed for UHF large signal applications required in industrial and commercial FM equipment operating at 512MHz.

Features:

- Specified 10 Volt, 512MHz Characteristics:
 Power Output = 10W
 Minimum Gain = 6.0dB
- RF ballasting provides protection against device damage due to load mismatch
- Characterized with series equivalent large-signal impedance parameters

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

| | |
|---|-----------------------------|
| Collector-Emitter Voltage, V_{CEO} | 16V |
| Collector-Base Voltage, V_{CBO} | 36V |
| Emitter-Base Voltage, V_{EBO} | 4.0V |
| Collector Current-Continuous, I_C | 2.0A |
| Total Device Dissipation ($T_C = +25^\circ\text{C}$, Note 1), P_D | 37.5W |
| Derate above 25°C | 214mW/ $^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | -65 to $+200^\circ\text{C}$ |
| Stud Torque (Note 2) | 6.5 in-lbs |

Note 1 This device is designed for RF operation. The total device dissipation rating applies only when the device is operated as RF amplifier.

Note 2 For repeated assembly use 5 in-lbs.

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 | $V_{(BR)CEO}$ | $I_C = 200\text{mA}, I_B = 0$ | 16 | - | - | V |
| | $V_{(BR)CES}$ | $I_C = 200\text{mA}, V_{BE} = 0$ | 36 | - | - | V |
| Emitter-Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = 4.0\text{mA}, I_C = 0$ | 4 | - | - | V |
| Collector Cutoff Current | I_{CES} | $V_{CE} = 15\text{V}, V_{BE} = 0, T_C = 55^\circ\text{C}$ | - | 0.5 | 20 | mA |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|-------------------------------------|-----------|---|-----|-----|-----|------|
| Collector Cutoff Current | I_{CBO} | $V_{CB} = 15\text{V}, I_E = 0$ | - | - | 2.0 | mA |
| On Characteristics | | | | | | |
| DC Current Gain | h_{FE} | $I_C = 500\text{mA}, V_{CE} = 5.0\text{V}$ | 20 | 80 | - | - |
| Dynamic Characteristics | | | | | | |
| Output Capacitance | C_{ob} | $V_{CB} = 12.5\text{V}, I_E = 0, f = 1.0\text{MHz}$ | - | 38 | 45 | pF |
| Functional Test | | | | | | |
| Common-Emitter Amplifier Power Gain | - | $V_{CC} = 12.5\text{V}, P_{out} = 10\text{W}, I_C = 1.33\text{A}$ | 6.0 | 7.0 | - | |
| Collector Efficiency | η | $V_{CC} = 12.5\text{V}, P_{out} = 10\text{W}, I_C = 1.3\text{A}, f = 470\text{MHz}$ | 60 | - | - | % |

