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NTE345 Silicon NPN Transistor RF Power Amp, Driver

Description:

The NTE345 is a silicon NPN transistor in a T72H type package designed primarily for use in 13.6V large-signal amplifier applications in industrial and commercial FM equipment operating to 175MHz. This device is ideally suited for marine radio applications.

Features:

- Specified 13.6V, 160MHz Characteristics:
 Output Power = 30W
 Minimum Gain = 9dB
 Efficiency = 60%

Absolute Maximum Ratings:

| | |
|---|-------------------------------------|
| Collector–Emitter Voltage, V_{CEO} | 18V |
| Collector–Base Voltage, V_{CBO} | 36V |
| Emitter–Base Voltage, V_{EBO} | 4V |
| Continuous Collector Current, I_C | 5A |
| Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D | 65W |
| Derate Above 25°C | 0.37W/ $^\circ\text{C}$ |
| Operating Junction Temperature Range, T_J | -65° to $+200^\circ\text{C}$ |
| Storage Temperature Range, T_{stg} | -65° to $+200^\circ\text{C}$ |

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

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---------------|--|-----|-----|-----|------|
| OFF Characteristics | | | | | | |
| Collector–Emitter Breakdown Voltage | $V_{(BR)CEO}$ | $I_C = 100\text{mA}, I_B = 0$ | 18 | – | – | V |
| Collector–Base Breakdown Voltage | $V_{(BR)CBO}$ | $I_C = 15\text{mA}, I_E = 0$ | 36 | – | – | V |
| Emitter–Base Breakdown Voltage | $V_{(BR)EBO}$ | $I_E = 5\text{mA}, I_C = 0$ | 4 | – | – | V |
| ON Characteristics | | | | | | |
| DC Current Gain | h_{FE} | $I_C = 1\text{A}, V_{CE} = 5\text{V}$ | 5 | – | – | |
| Dynamic Characteristics | | | | | | |
| Output Capacitance | C_{ob} | $V_{CB} = 15\text{V}, I_E = 0, f = 0.1$ to 1MHz | – | 110 | 130 | pF |
| Functional Tests ($V_{CC} = 13.6\text{V}$ unless otherwise specified) | | | | | | |
| Common–Emitter Amplifier Power Gain | G_{PE} | $P_{out} = 30\text{W}, f = 160\text{MHz}$ | 9 | 10 | – | dB |
| Collector Efficiency | η | $P_{out} = 30\text{W}, f = 160\text{MHz}$ | 60 | – | – | % |

