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NTE236
Silicon NPN Transistor
Final RF Power Output
(P_O = 16W, 27MHz, SSB)

Description:

The NTE236 is a silicon NPN epitaxial planer type transistor designed for RF power amplifiers on HF band mobile radio applications.

Features:

- High Power Gain: $G_{pe} \geq 12$dB (V_{CC} = 12V, P_O = 16W, f = 27MHz)
- Ability to Withstand Infinite VSWR Load when Operated at:
  V_{CC} = 16V, P_O = 20W, f = 27MHz

Application:

- 10 to 14 Watt Output Power Class AB Amplifier Applications in HF band

Absolute Maximum Ratings: (T_C = +25°C unless otherwise specified)

Collector–Base Voltage, V_{CBO} 60V

Collector–Emitter Voltage ($R_{BE} = \infty$), V_{CEO} 25V

Emitter–Base Voltage, V_{EBO} 5V

Collector Current, I_C 6A

Collector Dissipation, P_C

T_A = 25°C 1.7W

T_C = 25°C 20W

Operating Junction Temperature, T_J . . . . . +150°C

Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 73.5°C/W

Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 6.25°C/W

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 5mA, I_C = 0	5	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 1mA, I_E = 0	60	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 10mA, R_{BE} = ∞	25	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 30V, I_E = 0	–	–	100	µA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 4V, I_C = 0	–	–	100	µA
DC Forward Current Gain	h_{FE}	V_{CE} = 12V, I_C = 10mA, Note 1	10	50	180	–
Output Power	P_O	V_{CC} = 12V, P_{in} = 1W, f = 27MHz	16	18	–	W
Collector Efficiency	h_C	V_{CC} = 12V, P_{in} = 1W, f = 27MHz	60	70	–	%

Note 1. Pulse Test: Pulse Width = 150µs, Duty Cycle = 5%.