

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: $G_{pe} \geq 12dB$ ($V_{CC} = 12V$, $P_O = 16W$, $f = 27MHz$)
- 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: ($T_C = +25^\circ C$ 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	
$T_A = 25^\circ C$	1.7W
$T_C = 25^\circ C$	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: ($T_C = +25^{\circ}\text{C}$ unless otherwise specified)

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

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

