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NTE343
Silicon NPN Transistor
RF Power Output
(P_O = 14W, 175MHz)

Description:

The NTE343 is a silicon NPN epitaxial planer type transistor designed for RF power amplifiers on VHF band mobile radio applications.

Features:

- High Power Gain: $G_{pe} \geq 7.5$dB (V_{CC} = 13.5V, P_O = 14W, f = 175MHz)
- Ability to Withstand more than 20:1 VSWR Load when Operated at:
  V_{CC} = 15.2V, P_O = 18W, f = 175MHz

Application:

- 10 to 14 Watt Output Power Amplifiers in VHF Band Mobile Radio Applications

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

Collector–Base Voltage, V_{CBO} 35V

Collector–Emitter Voltage ($R_{BE} = \infty$), V_{CEO} 17V

Emitter–Base Voltage, V_{EBO} 4V

Collector Current, I_C 3.5A

Collector Dissipation, P_C

T_A = 25°C 1.5W

T_C = 25°C 25W

Operating Junction Temperature, T_J . . . . . +175°C

Storage Temperature Range, T_{stg} . . . . . –55° to +175°C

Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 100°C/W

Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 6°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Breakdown Voltage Emitter to Base	$V_{(BR)EBO}$	I_E = 10mA, I_C = 0	4	–	–	V
Breakdown Voltage Collector to Base	$V_{(BR)CBO}$	I_C = 10mA, I_E = 0	35	–	–	V
Breakdown Voltage Collector to Emitter	$V_{(BR)CEO}$	I_C = 50mA, R_{BE} = ∞	17	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 25V, I_E = 0	–	–	1000	µA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 3V, I_C = 0	–	–	500	µA
DC Forward Current Gain	h_{FE}	V_{CE} = 10V, I_C = 100mA, Note 1	10	50	180	–
Output Power	P_O	V_{CC} = 13.5V, P_{in} = 2.5W, f = 175MHz	14	15	–	W
Collector Efficiency	η_C		60	70	–	%

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