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NTE488
Silicon NPN Transistor
RF Power Output

Description:
The NTE488 is a silicon NPN epitaxial planar type transistor designed for industrial use RF power Amplifiers on VHF band mobile radio applications.

Features:
- High Power Gain: $G_{pe} \geq 10.7$dB @ $V_{CC} = 13.5$V, $P_O = 3.5$W, f = 175MHz
- TO39 Metal Sealed Package for High Reliability
- Emitter Electrode is Connected Electrically to the Case

Application:
1 to 3 Watt Power Amplifiers in VHF Band Mobile Radio Applications.

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

Collector–Base Voltage, V_{CBO} 35V
Emitter–Base Voltage, V_{EBO} 4V
Collector Current, I_C 1A
Collector Dissipation, P_C
  T_A = +25°C 1W
  T_C = +25°C 10W
Junction Temperature, T_j . . . . . +175°C
Storage Temperature Range, T_{stg} . . . . . –65° to +175°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 150°C/W
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 15°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$		4	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 10mA, I_E = 0	35	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 50A, $R_{BE} = \infty$	17	–	–	V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	V_{CB} = 25V, I_E = 0	–	–	500	µA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 3V, I_O = 0	–	–	500	µA
DC Forward Current Gain	h_{FE}	V_{CE} = 10V, I_C = 0.1A, Note 1	10	50	180	–
Output Power	P_O	V_{CC} = 13.5V Pin = 0.3W, f = 175MHz	3.5	4.0	–	W
Collector Efficiency	η		50	60	–	%

Note 1. Pulse Test: P_W = 150µs duty = 5%.