

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: $G_{pe} \geq 10.7\text{dB}$ @ $V_{CC} = 13.5\text{V}$, $P_O = 3.5\text{W}$, $f = 175\text{MHz}$
- 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: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

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

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

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

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

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

Note 1. Pulse Test: $P_W = 150\mu\text{s}$ duty = 5%.

