



NTE348 Silicon NPN Transistor RF Power Amp, Driver

Description:

The NTE348 is a silicon NPN transistor in a T72H type package designed primarily for use in 12.5V VHF large-signal power amplifier applications required in military and industrial equipment to 300MHz.

Features:

- Specified 12.5V, 175MHz Characteristics:
Output Power = 4W
Minimum Gain = 12dB
Efficiency = 50%

Absolute Maximum Ratings:

Collector-Emitter Voltage, V_{CEO}	18V
Collector-Emitter Voltage, V_{CES}	36V
Emitter-Base Voltage, V_{EBO}	4V
Continuous Collector Current, I_C	1A
Total Device Dissipation (Note 1, $T_C = +25^\circ\text{C}$), P_D	12W
Derate Above 25°C	68.5mW/ $^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+200^\circ\text{C}$

Note 1. This device is designed for RF operation. The total device dissipation rating applies only when the device is operated as an RF amplifier.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}$, $I_B = 0$	18	—	—	V
	$V_{(BR)CES}$	$I_C = 5\text{mA}$, $V_{BE} = 0$	36	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}$, $I_C = 0$	4	—	—	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 15\text{V}$, $I_E = 0$	—	—	0.25	mA
	I_{CES}	$V_{CE} = 15\text{V}$, $V_{BE} = 0$, $T_C = +55^\circ\text{C}$	—	—	5	mA
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 250\text{mA}$, $V_{CE} = 5\text{V}$	5	—	—	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
Output Capacitance	C_{ob}	$V_{CB} = 15\text{V}, I_E = 0, f = 0.1\text{MHz}$	–	15	20	pF
Functional Tests ($V_{CC} = 12.5\text{V}$ unless otherwise specified)						
Common–Emitter Amplifier Power Gain	G_{PE}	$P_{out} = 4\text{W}, f = 175\text{MHz}$	12	–	–	dB

