

NTE349 Silicon NPN Transistor RF Power Amp, Driver

Description:

The NTE349 is a silicon NPN transistor in a T72H type package designed primarily for use in 13.6V VHF large-signal amplifier applications required in military and industrial equipment to 240MHz.

Features:

- Specified 13.6V, 175MHz Characteristics:
 Output Power = 10W
 Minimum Gain = 5.2dB
 Efficiency = 50%

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO}	18V
Collector–Base Voltage, V_{CB}	36V
Emitter–Base Voltage, V_{EB}	4V
Continuous Collector Current, I_C	2A
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	30W
Derate Above 25°C	0171mW/ $^\circ\text{C}$
Operating Junction Temperature Range, T_J	-65° to $+200^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+200^\circ\text{C}$

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	$V_{(BR)CEO}$	$I_C = 200\text{mA}, I_B = 0$	18	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 2.5\text{mA}, I_C = 0$	4	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 15\text{V}, I_E = 0$	–	–	1.0	mA
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 250\text{mA}, V_{CE} = 5\text{V}$	5	–	–	
Dynamic Characteristics						
Output Capacitance	C_{ob}	$V_{CB} = 15\text{V}, I_E = 0, f = 0.1$ to 1MHz	–	35	70	pF

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Functional Tests ($V_{CE} = 13.6\text{V}$ unless otherwise specified)						
Common-Emitter Amplifier Power Gain	G_{PE}	$P_{out} = 10\text{W}$, $f = 175\text{MHz}$	5.2	–	–	dB
Power Input	P_{in}	$P_{OUT} = 10\text{W}$, $f = 175\text{MHz}$	–	–	3	W
Collector Efficiency	η	$P_{out} = 10\text{W}$, $f = 175\text{MHz}$	50	–	–	%

