



ELECTRONICS, INC.  
 44 FARRAND STREET  
 BLOOMFIELD, NJ 07003  
 (973) 748-5089

## 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 $25^\circ\text{C}$ .....	68.5mW/ $^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ 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
<b>OFF Characteristics</b>						
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
<b>ON Characteristics</b>						
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
<b>Dynamic Characteristics</b>						
Output Capacitance	$C_{ob}$	$V_{CB} = 15\text{V}, I_E = 0, f = 0.1\text{MHz}$	–	15	20	pF
<b>Functional Tests</b> ( $V_{CC} = 12.5\text{V}$ unless otherwise specified)						
Common-Emitter Amplifier Power Gain	$G_{PE}$	$P_{out} = 4\text{W}, f = 175\text{MHz}$	12	–	–	dB

