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## NTE337 Silicon NPN Transistor RF Power Amp, Driver

### **Description:**

The NTE337 is a silicon NPN transistor in a T72H type package designed primarily for use in large-signal amplifier driver and pre-driver stages. This device is intended for use in industrial communications equipment operating at frequencies to 80MHz.

### **Features:**

- Specified 12.5V, 50MHz Characteristics:
  - Output Power = 8W
  - Minimum Gain = 10dB
  - 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 ( $T_C = +25^\circ\text{C}$ ), $P_D$ .....	20W
Derate Above $25^\circ\text{C}$ .....	114W/ $^\circ\text{C}$
Operating Junction Temperature Range, $T_J$ .....	$-65^\circ$ to $+200^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	$-65^\circ$ to $+200^\circ\text{C}$

### **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	$V_{(BR)CEO}$	$I_C = 200\text{mA}$ , $I_B = 0$ , Note 1	18	-	-	V
	$V_{(BR)CES}$	$I_C = 50\text{mA}$ , $V_{BE} = 0$ , Note 1	36	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 5\text{mA}$ , $I_C = 0$	4	-	-	V
Collector Cutoff Current	$I_{CES}$	$V_{CE} = 15\text{V}$ , $V_{BE} = 0$ , $T_C = +125^\circ\text{C}$	-	-	10	mA
	$I_{CBO}$	$V_{CB} = 15\text{V}$ , $I_E = 0$	-	-	1	mA
<b>ON Characteristics</b>						
DC Current Gain	$h_{FE}$	$I_C = 500\text{mA}$ , $V_{CE} = 5\text{V}$	5	-	-	

Note 1. Pulsed through a 25mH inductor.

### **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	$C_{ob}$	$V_{CB} = 15\text{V}$ , $I_E = 0$ , $f = 0.1$ to $1\text{MHz}$	-	-	90	pF

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Functional Tests</b> ( $V_{CC} = 12.5V$ unless otherwise specified)						
Common-Emitter Amplifier Power Gain	$G_{PE}$	$P_{out} = 8W, f = 50MHz$	10	-	-	dB
Power Output	$P_{out}$	$P_{in} = 800mW, f = 50MHz$	8	-	-	W
Collector Efficiency	$h$	$P_{out} = 8W, f = 50MHz$	50	-	-	%

