

## NTE345 Silicon NPN Transistor RF Power Amp, Driver

### Description:

The NTE345 is a silicon NPN transistor in a T72H type package designed primarily for use in 13.6V large-signal amplifier applications in industrial and commercial FM equipment operating to 175MHz. This device is ideally suited for marine radio applications.

### Features:

- Specified 13.6V, 160MHz Characteristics:
  - Output Power = 30W
  - Minimum Gain = 9dB
  - Efficiency = 60%

### Absolute Maximum Ratings:

Collector–Emitter Voltage, $V_{CEO}$ .....	18V
Collector–Base Voltage, $V_{CBO}$ .....	36V
Emitter–Base Voltage, $V_{EBO}$ .....	4V
Continuous Collector Current, $I_C$ .....	5A
Total Device Dissipation ( $T_C = +25^\circ\text{C}$ ), $P_D$ .....	65W
Derate Above $25^\circ\text{C}$ .....	0.37W/ $^\circ\text{C}$
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	$V_{(BR)CEO}$	$I_C = 100\text{mA}$ , $I_B = 0$	18	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 15\text{mA}$ , $I_E = 0$	36	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 5\text{mA}$ , $I_C = 0$	4	–	–	V
<b>ON Characteristics</b>						
DC Current Gain	$h_{FE}$	$I_C = 1\text{A}$ , $V_{CE} = 5\text{V}$	5	–	–	
<b>Dynamic Characteristics</b>						
Output Capacitance	$C_{ob}$	$V_{CB} = 15\text{V}$ , $I_E = 0$ , $f = 0.1$ to $1\text{MHz}$	–	110	130	pF
<b>Functional Tests</b> ( $V_{CC} = 13.6\text{V}$ unless otherwise specified)						
Common–Emitter Amplifier Power Gain	$G_{PE}$	$P_{out} = 30\text{W}$ , $f = 160\text{MHz}$	9	10	–	dB
Collector Efficiency	$\eta$	$P_{out} = 30\text{W}$ , $f = 160\text{MHz}$	60	–	–	%

