

NTE350 Silicon NPN Transistor RF Power Amp, Driver

Description:

The NTE350 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 commercial and industrial equipment to 300MHz.

Features:

- Specified 12.5V, 175MHz Characteristics:
 Output Power = 15W
 Minimum Gain = 6.3dB
 Efficiency = 60%

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	2.5A
Total Device Dissipation (Note 1, $T_C = +25^\circ\text{C}$), P_D	31W
Derate Above 25°C	177mW/ $^\circ\text{C}$
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	$V_{(BR)CEO}$	$I_C = 20\text{mA}, I_B = 0$	18	–	–	V
	$V_{(BR)CES}$	$I_C = 10\text{mA}, V_{BE} = 0$	36	–	–	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 1\text{mA}, I_C = 0$	4	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 15\text{V}, I_E = 0$	–	–	0.5	mA
	I_{CES}	$V_{CE} = 15\text{V}, V_{BE} = 0, T_C = +55^\circ\text{C}$	–	–	8	mA
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 500\text{mA}, V_{CE} = 5\text{V}$	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}	$V_{CB} = 15\text{V}, I_E = 0, f = 0.1\text{MHz}$	–	70	85	pF
Functional Tests ($V_{CC} = 12.5\text{V}$ unless otherwise specified)						
Common-Emitter Amplifier Power Gain	G_{PE}	$P_{out} = 15\text{W}, f = 175\text{MHz}$	6.3	–	–	dB
Collector Efficiency	η	$P_{out} = 15\text{W}, f = 175\text{MHz}$	60	–	–	%

