

NTE325 Silicon NPN RF Power Transistor 50W @ 30MHz

Description:

The NTE325 is a silicon NPN RF power transistor in a T72H type package designed for power amplifier applications in industrial, commercial, and amateur radio equipment to 30MHz.

Features:

- Specified 12.5V, 30MHz Characteristics:
 Output Power = 50W
 Minimum Gain = 11dB
 Efficiency = 50%

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO}	20V
Collector–Base Voltage, V_{CBO}	40V
Emitter–Base Voltage, V_{EBO}	4V
Continuous Collector Current, I_C	7.5A
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	115W
Derate Above 25°C	0.66W/ $^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$
Thermal Resistance, Junction to Case, $R_{\theta JC}$	1.53 $^\circ\text{C}/\text{W}$

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	$V_{(BR)CEO}$	$I_C = 100\text{mA}, I_B = 0$	20	–	–	V
	$V_{(BR)CES}$	$I_C = 20\text{mA}, V_{BE} = 0$	40	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 20\text{mA}, I_E = 0$	40	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\text{mA}, I_C = 0$	4	–	–	V
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 1\text{A}, V_{CE} = 5\text{V}$	10	–	–	
Dynamic Characteristics						
Output Capacitance	C_{ob}	$V_{CB} = 15\text{V}, I_E = 0, f = 1\text{MHz}$	–	–	200	pF

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Functional Test						
Common-Emitter Amplifier Power Gain	G_{PE}	$V_{CC} = 13.6\text{V}$, $P_{OUT} = 50\text{W}$, $I_C(\text{max}) = 6.13\text{A}$, $f = 30\text{MHz}$	11	15	-	dB
Collector Efficiency	η		50	-	-	%
Series Equivalent Input Impedance	Z_{in}	$V_{CC} = 13.6\text{V}$, $P_{OUT} = 50\text{W}$, $f = 30\text{MHz}$	-	$1.56-j.89$	-	Ω
Series Equivalent Output Impedance	Z_{out}		-	$174-j.50$	-	Ω

