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NTE341 Silicon NPN Transistor RF Power Output

Description:

The NTE341 is a epitaxial silicon NPN transistor designed primarily for VHF mobile communications. The chip of this transistor is mounted so as to isolate the collector lead and ground the emitter lead for high gain performance.

Features:

- 175MHz
- 12.5 Volts
- P_{OUT} = 4W Minimum
- G_P = 12dB
- Grounded Emitter

Absolute Maximum Ratings: (T_C = +25°C unless otherwise specified)

Collector-Base Voltage, V _{CB0}	36V
Collector-Emitter Voltage, V _{CEO}	18V
Collector-Emitter Voltage, V _{CES}	36V
Emitter-Base Voltage, V _{EBO}	4V
Collector Current, I _C	640mA
Total Device Dissipation, P _{tot}	8W
Operating Junction Temperature, T _j	+200°C
Storage Temperatures Range, T _{stg}	-65° to +200°C
Thermal Resistance, Junction-to-Case, R _{thJC}	21.9°C/W

Electrical Characteristics: (T_C = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C = 10mA, I _B = 0	18	-	-	V
	V _{(BR)CES}	I _C = 5mA, V _{BE} = 0	36	-	-	V
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	I _C = 0, I _E = 1mA	4	-	-	V
Collector Cutoff Current	I _{CB0}	V _{CB} = 15V, I _E = 0	-	-	250	μA
ON Characteristics						
DC Current Gain	h _{FE}	V _{CE} = 5V, I _C = 50mA	10	-	100	
Dynamic Characteristics						
Output Power	P _{OUT}	V _{CE} = 12.5V, f = 175MHz	4	-	-	W
Common-Emitter Amplifier Power Gain	G _{PE}	V _{CE} = 12.5V, f = 175MHz	12	-	-	dB
Output Capacitance	C _{ob}	V _{CE} = 15V, f = 1MHz	-	180	230	pF

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Impedance Data						
Input Impedance	Z_{in}	$P_{IN} = 200\text{mW}$, $V_{CC} = 12.6\text{V}$	$f = 136\text{MHz}$		$3.0 - j3.8$	
			$f = 155\text{MHz}$		$4.0 - j2.0$	
			$f = 175\text{MHz}$		$4.3 - j5.8$	
Clamping Impedance	Z_{cl}		$f = 136\text{MHz}$		$12.8 - j11$	
			$f = 155\text{MHz}$		$11 - j14.8$	
			$f = 175\text{MHz}$		$13 - j20$	

