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NTE357
Silicon NPN Transistor
RF Power Output
P_O = 7W @ 175MHz

Description:

The NTE357 RF power transistor is designed primarily for wideband large-signal amplifier stages in the 125-175MHz frequency range.

Features:

- Specified 28V, 175MHz Characteristics –
 Output Power = 7.0 Watts
 Minimum Gain = 8.4dB
 Efficiency = 60%
- Characterized from 125 to 175MHz
- Includes Series Equivalent Impedances

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

Collector-Emitter Voltage, V _{CEO}	35V
Collector-Base Voltage, V _{CB}	65V
Emitter-Base Voltage, V _{EB}	4.0V
Collector Current-Continuous, I _C	1.0A
Total Device Dissipation (T _C = +25°C), P _D	86mW/°C
Operating Junction Temperature Range, T _J	-65° to +200°C
Storage Temperature Range, T _{stg}	-65° to +200°C

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 = 200mA _{dc} , I _B = 0, (Note 1)	35	-	-	Vdc
Collector-Emitter Breakdown Voltage	V _{(BR)CES}	I _C = 200mA _{dc} , V _{BE} = 0	65	-	-	Vdc

Note 1. Pulsed through 25mH inductor

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 5\text{mA}_{dc}$, $I_C = 0$	4	-	-	Vdc
Collector Cut-Off Current	I_{CBO}	$V_{CB} = 30\text{V}_{dc}$, $I_E = 0$	-	-	1	mA_{dc}
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 100\text{mA}_{dc}$, $V_{CE} = 5\text{V}_{dc}$	5	-	-	
Dynamic Characteristics						
Output Capacitance	C_{ob}	$V_{CB} = 30\text{V}_{dc}$, $I_E = 0$, $f = 0.1$ to 1.0MHz	-	8.5	15	pf
Functional Test						
Common-Emitter Amplifier Power Gain	G_{PE}	$P_{OUT} = 7\text{W}$, $V_{CE} = 28\text{V}_{dc}$, $f = 175\text{MHz}$	8.4	12.5	-	dB
Collector Efficiency	η	$P_{OUT} = 7\text{W}$, $V_{CE} = 28\text{V}_{dc}$, $f = 175\text{MHz}$	60	-	-	%

