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## NTE352 Silicon NPN Transistor RF Power Amp, Driver

**Description:**

The NTE352 is a 12.5V Class C epitaxial silicon NPN transistor in a W65 type package designed primarily for VHF, FM communications. Diffused emitter resistors provide high VSWR capability under rated operating conditions. Internal impedance matching ensures optimum power gain and efficiency over the 136–175MHz band.

**Features:**

- 175MHz
- 12.5 Volts
- P<sub>OUT</sub> = 100 Watts
- G<sub>P</sub> = 6.0dB Minimum
- Common Emitter Configuration

**Absolute Maximum Ratings:** (T<sub>C</sub> = +25°C unless otherwise specified)

Collector–Base Voltage, V <sub>CBO</sub> .....	36V
Collector–Emitter Voltage, V <sub>CEO</sub> .....	18V
Collector–Emitter Voltage, V <sub>CES</sub> .....	36V
Emitter–Base Voltage, V <sub>EBO</sub> .....	4V
Collector Current (Peak), I <sub>C</sub> .....	20A
Power Dissipation, P <sub>D</sub> .....	270W
Operatin Junction Temperature, T <sub>J</sub> .....	+200°C
Storage Temperature Range, T <sub>stg</sub> .....	-65° to +150°C
Thermal Resistance, Junction–to–Case, R <sub>thJC</sub> .....	0.65°C/W

**Electrical Characteristics:** (T<sub>C</sub> = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Static Characteristics</b>						
Collector–Base Breakdown Voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> = 50mA, I <sub>E</sub> = 0	36	–	–	V
Collector–Emitter Breakdown Voltage	V <sub>(BR)CES</sub>	I <sub>C</sub> = 100mA, V <sub>BE</sub> = 0	36	–	–	V
	V <sub>(BR)CEO</sub>	I <sub>C</sub> = 100mA, I <sub>B</sub> = 0	18	–	–	V
Emitter–Base Breakdown Voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> = 10mA, I <sub>C</sub> = 0	4	–	–	V
Collector Cutoff Current	I <sub>CES</sub>	V <sub>CE</sub> = 15V, I <sub>E</sub> = 0	–	–	15	mA
<b>ON Characteristics</b>						
DC Current Gain	h <sub>FE</sub>	I <sub>C</sub> = 5A, V <sub>CE</sub> = 5V	10	75	150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
<b>Dynamic Characteristics</b>						
Output Power	$P_{OUT}$	$V_{CC} = 12.5\text{V}, f = 175\text{MHz},$ $P_{IN} = 25\text{W}$	100	-	-	W
Power Gain	$G_{PE}$		6.0	-	-	dB
Output Capacitance	$C_{ob}$	$V_{CB} = 12.5\text{V}, f = 1\text{MHz}$	-	-	390	pF
<b>Impedance Data</b>						
Input Impedance	$Z_{IN}$	$f = 175\text{MHz}$	1.5 - j0.9			$\Omega$
Clamping Impedance	$Z_{CL}$	$f = 175\text{MHz}$	0.5 - j1.0			$\Omega$

