



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
- $P_{OUT} = 100$ Watts
- $G_P = 6.0$ dB Minimum
- Common Emitter Configuration

Absolute Maximum Ratings: ($T_C = +25^\circ\text{C}$ unless otherwise specified)

Collector–Base Voltage, V_{CBO}	36V
Collector–Emitter Voltage, V_{CEO}	18V
Collector–Emitter Voltage, V_{CES}	36V
Emitter–Base Voltage, V_{EBO}	4V
Collector Current (Peak), I_C	20A
Power Dissipation, P_D	270W
Operating Junction Temperature, T_J	+200°C
Storage Temperature Range, T_{stg}	–65° to +150°C
Thermal Resistance, Junction–to–Case, R_{thJC}	0.65°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 50\text{mA}$, $I_E = 0$	36	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = 100\text{mA}$, $V_{BE} = 0$	36	–	–	V
	$V_{(BR)CEO}$	$I_C = 100\text{mA}$, $I_B = 0$	18	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\text{mA}$, $I_C = 0$	4	–	–	V
Collector Cutoff Current	I_{CES}	$V_{CE} = 15\text{V}$, $I_E = 0$	–	–	15	mA
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 5\text{A}$, $V_{CE} = 5\text{V}$	10	75	150	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics						
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
Impedance Data						
Input Impedance	Z_{IN}	$f = 175\text{MHz}$	$1.5 - j0.9$			Ω
Clamping Impedance	Z_{CL}	$f = 175\text{MHz}$	$0.5 - j1.0$			Ω

