

NTE472

Silicon NPN Transistor

RF Power Output

$P_O = 1.8W @ 175MHz$

Description:

The NTE472 is a silicon NPN transistor designed for amplifier, frequency multiplier or oscillator applications in military, mobile marine and citizens band equipment. Suitable for use as output driver or pre-driver stages in VHF and UHF equipment.

Features:

- Specified 12.5 Volt, 175MHz Characteristics:
Output Power = 1.75 Watts
Minimum Gain = 11.5dB
Efficiency = 50%
- Characterized through 225MHz

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO}	16V
Collector–Base Voltage, V_{CBO}	36V
Emitter–Base Voltage, V_{EBO}	3.5V
Continuous Collector Current, I_C	0.33A
Total Device Dissipation ($T_C = +75^\circ C$, Note 1), P_D	3.5W
Derate Above $75^\circ C$	28mW/ $^\circ C$
Storage Temperature Range, T_{stg}	-65° to $+200^\circ C$

Note 1. This device is designed for RF operation. The total device dissipation rating applies only when the device is operated as a class B or C RF amplifier.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 25mA, I_B = 0$	16	–	–	V
	$V_{(BR)CES}$	$I_C = 25mA, V_{BE} = 0$	36	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_C = 0.5mA, I_C = 0$	3.5	–	–	V
Collector Cutoff Current	I_{CEO}	$V_{CE} = 10V, I_B = 0$	–	–	0.3	mA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics						
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}, I_C = 50\text{mA}$	20	—	150	
Dynamic Characteristics						
Output Capacitance	C_{ob}	$V_{CB} = 12\text{V}, I_E = 0, f = 1\text{MHz}$	—	—	15	pF
Functional Test						
Common-Emitter Amplifier Power Gain	G_{PE}	$P_{OUT} = 1.75\text{W}, V_{CC} = 12.5\text{V},$ $f = 175\text{MHz}$	11.5	—	—	dB
Collector Efficiency	η		50	—	—	%

