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## NTE471 Silicon NPN Transistor RF Power Output $P_O = 100W @ 30MHz$

### **Description:**

The NTE471 is a 28V epitaxial silicon NPN planar transistor designed primarily for SSB communications. This device utilizes state-of-the-art diffused emitter ballasting for improved ruggedness and reliability.

### **Features:**

- Better than 15dB Gain at 30MHz and 100W (CW/PEP)
- Diffused Emitter Ballasting
- Withstands Infinite Mismatch at Operating Conditions
- Low Inductance Stripline Package
- Frequency = 30MHz
- Power Out = 100 Watts
- Voltage = 28 Volts
- Power Gain = 15dB

### **Absolute Maximum Ratings:** ( $T_C = +25^\circ C$ unless otherwise specified)

Collector-Base Voltage, $V_{CBO}$ .....	65V
Collector-Emitter Voltage, $V_{CEO}$ .....	36V
Emitter-Base Voltage, $V_{EBO}$ .....	4V
Maximum Collector Current, $I_C$ .....	20A
Total Device Dissipation ( $T_C = +25^\circ C$ ), $P_{tot}$ .....	270W
Maximum Junction Temperatures, $T_J$ .....	+200°C
Storage Temperature Range, $T_{stg}$ .....	-65° to +150°C
Thermal Resistance, Junction-to-Case, $R_{thJC}$ .....	65°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CES}$	$V_{CE} = 30\text{V}, V_{BE} = 0$	–	–	15	mA
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\text{mA}, I_B = 0, \text{Note 1}$	36	–	–	V
	$V_{(BR)CES}$	$I_C = 100\text{mA}, V_{BE} = 0, \text{Note 1}$	65	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\text{mA}, I_C = 0$	4	–	–	V
DC Current Gain	$h_{FE}$	$V_{CE} = 5\text{V}, I_C = 5\text{A}$	10	50	–	
<b>Dynamic Characteristics</b>						
Power Output	$P_O$	$V_{CE} = 28\text{V}, f = 30\text{MHz}$	100	–	–	W
Power Gain	$P_g$	$V_{CE} = 28\text{V}, f = 30\text{MHz}$	15.6	16.0	–	dB
Capacitance	$C_{ob}$	$V_{EB} = 30\text{V}, I_E = 0, f = 1\text{MHz}$	–	250	–	pF

Note 1. Pulsed through a 25mH inductor.

