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NTE485 Silicon NPN Transistor RF Power Output for Mobile Use, $P_O = 25W @ 866MHz$

Description:

The NTE485 is an NPN Silicon Epitaxial Planar Transistor that was designed for amplifier applications in the 806–866MHz frequency range. Internal input matching and Common Base Configuration assure optimum gain and efficiency across the entire frequency band.

Features:

- Designed for 800 MHz Mobile Communications Equipment
- 25W Min., with Greater than 5.5dB Gain
- Withstands Infinite VSWR at Rated Operating Conditions
- Internal Input matched “Tuned Q”
- Common Base Configuration

Absolute Maximum Ratings:

Collector–Base Voltage, V_{CBO}	36V
Collector–Emitter Voltage, V_{CEO}	18V
Emitter–Base Voltage, V_{EBO}	4V
Maximum Collector Current, I_C	7.5A
Total Device Dissipation (At +25°C), P_{tot}	70W
Operating Junction Temperature, T_J	+200°C
Storage Temperature Range, T_{stg}	-65° to +200°C
Thermal Resistance, Junction–to–Case, R_{thJC}	2.5°C/W

Electrical Characteristic: ($T_C = +25°C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50mA, I_B = 0, \text{Note 1}$	18	–	–	V
	$V_{(BR)CES}$	$I_C = 50mA, V_{BE} = 0, \text{Note 1}$	36	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10mA, I_C = 0$	4	–	–	V
Collector Cutoff Current	I_{CEO}	$V_{CB} = 15V, I_E = 0$	–	–	5	mA
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 1A$	15	–	–	

Note 1. Pulsed through 25mH inductor.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
RF Characteristics: Small Signal						
Output Capacitance	C_{ob}	$V_{cb} = 12.5\text{V}, I_C = 0$	-	-	75.0	pF
RF Characteristics: Large Signal						
Output Power	P_O	$V_{CE} = 12.5\text{V}, f = 836\text{MHz}$	25	-	-	W
Power Gain	P_G	$V_{CE} = 12.5\text{V}, f = 836\text{MHz}$	5.5	-	-	dB
Impedance	Z_s	$V_{CE} = 12.5\text{V}, P_O = 25\text{W}, f = 836\text{MHz}$	-	$3.6 - j4.0$	-	Ω
	Z_{cl}		-	$2.0 - j0.4$	-	Ω

