

NTE480 Silicon NPN Transistor RF Power Output for Broadband Amp, $P_O = 40W @ 512MHz$

Description:

The NTE480 is a 12.5 Volt epitaxial silicon NPN common emitter transistor designed for broadband applications in the 450 to 512MHz land mobile radio band. This device utilizes diffused emitter resistors to withstand infinite VSWR under operating conditions.

Features:

- Designed for UHF Commercial Equipment
- 38W with Greater than 5.8dB Gain
- Withstands 20:1 VSWR Min., All Phase Angles
- Tuned Q Technology
- Diffused Emitter Resistors

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

Collector–Base Voltage, V_{CBO}	36V
Collector–Emitter Voltage, V_{CEO}	16V
Emitter–Base Voltage, V_{EBO}	4V
Maximum Collector Current, I_C	8A
Total Device Dissipation (At $+25^\circ C$), P_{tot}	117W
Operating Junction Temperature, T_J	$+200^\circ C$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ C$
Thermal Resistance, Junction–to–Case, R_{thJC}	$1.5^\circ C/W$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50mA, I_B = 0, \text{Note 1}$	16	–	–	V
	$V_{(BR)CES}$	$I_C = 15mA, V_{BE} = 0, \text{Note 1}$	36	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 5mA, i_C = 0$	4	–	–	V
Collector Cutoff Current	I_{CES}	$V_{CE} = 12.5V, V_{BE} = 0$	–	–	5	mA
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 1A$	20	–	–	

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
Static						
Output Power	P_O	$V_{CE} = 12.5\text{V}, f = 470\text{MHz}$	38	40	–	W
Power Gain	P_G	$V_{CE} = 12.5\text{V}, f = 470\text{MHz}$	5.8	–	–	dB
Impedance	Z_s	$V_{CE} = 12.5\text{V}, P_i = 10\text{W}, f = 470\text{MHz}$	–	$2 - j1.3$	–	Ω
	Z_{cl}		–	$1.6 - j1.8$	–	Ω
Output Capacitance	C_{ob}	$V_{CB} = 12.5\text{V}, I_E = 0, f = 1\text{MHz}$	–	95	–	pF

