



ELECTRONICS, INC.

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NTE282 Silicon NPN Transistor Final RF Power Amp, Switch

Applications:

- HF Power Amplifiers, Switchings
- 27MHz, 4W, AM, Citizens Band Transmitter Output Stage

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

Collector–Base Voltage, V_{CBO}	100V
Collector–Emitter Voltage, V_{CEO}	60V
Emitter–Base Voltage, V_{EBO}	6V
Collector Current, I_C	4A
Base Current, I_B	800mA
Collector Power Dissipation ($T_C = +25^\circ\text{C}$), P_C	10W
Operating Junction Temperature, T_J	+175°C
Storage Temperature Range, T_{stg}	-65° to +200°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 50V, I_E = 0$	–	–	1	μA
Emitter Cutoff current	I_{EBO}	$V_{EB} = 6V, I_C = 0$	–	–	2	μA
Collector–Base Voltage	V_{CBO}	$I_C = 100\mu\text{A}$	100	–	–	V
Collector–Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 10\text{mA}$	60	–	–	V
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2A, I_B = 400\text{mA}$	–	0.3	0.8	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2A, I_B = 400\text{mA}$	–	1.0	1.4	V
DC Current Gain	h_{FE1}	$V_{CE} = 2V, I_C = 100\text{mA}$	27	100	264	
	h_{FE2}	$V_{CE} = 2V, I_C = 2A$	–	60	–	
Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1\text{MHz}$	–	45	60	pF
Collector–Base Time Constant	$C_c \cdot r_{bb'}$	$V_{CB} = 10V, I_E = -15\text{mA}, f = 31.9\text{MHz}$	–	35	70	ps
Gain Bandwidth Product	f_T	$V_{CB} = 10V, I_E = -100\text{mA}$	70	140	–	MHz
Power Output	P_O	$P_{IN} = 400\text{mW}, V_{CC} = 12V$	4	6	–	W
Power Gain	$P \cdot G$	$f = 27\text{MHz}$	10	–	–	dB

