



NTE235 Silicon NPN Transistor Final RF Power Output

Description:

The NTE235 is an NPN silicon transistor in a TO220 type case designed for use in high power output amplifier stages such as citizen band communications equipment.

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

Collector–Emitter Voltage ($R_{BE} = 150\Omega$), V_{CER}	75V
Collector–Base Voltage, V_{CBO}	80V
Emitter–Base Voltage, V_{EBO}	5V
Collector Current, I_C	
Continuous	3A
Peak	5A
Collector Dissipation, P_C	
$T_A = +25^\circ\text{C}$	1.2W
$T_C = +50^\circ\text{C}$	10W
Operating Junction Temperature, T_J	$+150^\circ\text{C}$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}$, $I_B = 0$	80	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CER}$	$I_C = 1\text{mA}$, $R_{BE} = 150\Omega$	75	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}$, $I_C = 0$	5	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 40\text{V}$, $I_E = 0$	–	–	10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}$, $I_C = 0$	–	–	10	μA
DC Current Gain	h_{FE}	$V_{CE} = 5\text{V}$, $I_C = 500\text{mA}$	25	–	200	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{A}$, $I_B = 100\text{mA}$	–	0.15	0.6	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1\text{A}$, $I_B = 100\text{mA}$	–	0.9	1.2	V
Current Gain–Bandwidth Product	f_T	$V_{CE} = 10\text{V}$, $I_C = 100\text{mA}$	100	150	–	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}$, $f = 1\text{MHz}$	–	45	60	pF
Power Output	P_O	$V_{CC} = 12\text{V}$, $P_{in} = 0.2\text{W}$, $f = 27\text{MHz}$	4.0	–	–	W
Collector Efficiency	η		60	–	–	%

