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NTE347
Silicon NPN Transistor
RF Power Output
P_O = 3W @ 175MHz

Description:

The NTE347 is designed for 13.6 volt, VHF large signal power amplifier applications required in military and industrial equipment operating to 240MHz.

Features:

- Low lead inductance stripline package for easier design and increased broadband capability.
- Balanced Emitter Construction for increased Safe Operating Area. The NTE347 is designed to withstand an Open or Shorted Load at rated Output Power.
- Specified 13.6 volt, 175MHz Characteristics–
  Output Power = 3.0 Watts
  Minimum Gain = 8.2dB
  Efficiency = 50%

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Collector–Emitter Voltage, V_{CEO} 18V
Collector–Base Voltage, V_{CB} 36V
Emitter–Base Voltage, V_{EB} 4.0V
Continuous Collector Current, I_C 0.6A
Total Device Dissipation (T_A = +25°C), P_D 15W
Derate Above 25°C . . . . . 86mW/°C
Operating Junction Temperature Range, T_J . . . . . –65° to +200°C
Storage Temperature Range, T_{stg} . . . . . –65° to +200°C

Electrical Characteristics: (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 200mA, I_B = 0	18	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CES}$	I_C = 200mA, I_B = 0	36	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)CBO}$	I_E = 1.0mA, I_C = 0	4.0	–	–	V
Collector Cutoff Current	$V_{(BR)CBO}$	V_{CB} = 15V, I_E = 0	–	–	1.0	mA
ON CHARACTERISTICS						
DC Current Gain	h_{FE}	I_C = 100mA, V_{CE} = 5.0Vdc	5.0	–	–	–
DYNAMIC CHARACTERISTICS						
Output Capacitance	C_{ob}	V_{CB} = 15V, I_E = 0, f = 0.1 to 1.0 MHz	–	15	30	pF

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
FUNCTIONAL TEST						
Power Input	P_{in}	P_{OUT} = 3W, V_{CE} = 13.6V, f = 175MHz	–	0.35	0.45	W
Common–Emitter Amplifier Power Gain	G_{PE}		8.2	–	–	dB
Collector Efficiency	η		50	–	–	%