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NTE473
Silicon NPN Transistor
RF Power Driver

Description:

The NTE473 is a silicon NPN transistor in a TO39 type package designed for amplifier and oscillator applications in military and industrial equipment. Suitable for use as output, driver or predriver stages in VHF equipment.

Features:

- Specified 175MHz, 28V Characteristics:
  - Output Power: 2.5W
  - Minimum Gain: 10dB
  - Efficiency: 50%

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO} 40V
Collector–Base Voltage, V_{CB} 65V
Emitter–Base Voltage, V_{EB} 4V
Collector Current, I_C 1A
Total Device Dissipation (T_C = +25°C), P_D 7W
Derate Above 25°C . . . . . 40mW/°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 Sustaining Voltage	$V_{CEO(sus)}$	I_C = 200mA, I_B = 0, Note 1	40	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 0.1mA, I_C = 0	4	–	–	V
Collector Cutoff Current	I_{CEO}	V_{CE} = 30V, I_B = 0	–	–	0.1	mA
	I_{CEX}	V_{CE} = 30V, $V_{BE(off)}$ = 1.5V, T_C = +200°C	–	–	5.0	mA
		V_{CE} = 65V, $V_{BE(off)}$ = 1.5V	–	–	1.0	mA
Emitter Cutoff Current	I_{EBO}	V_{BE} = 4V, I_C = 0	–	–	0.1	mA

Note 1. Pulsed thru a 25mH inductor.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
ON Characteristics						
DC Current Gain	h_{FE}	I_C = 250mA, V_{CE} = 5V	10	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 250mA, I_B = 50mA	–	–	1.0	V
Dynamic Characteristics						
Current Gain – Bandwidth Product	f_T	I_C = 100mA, V_{CE} = 28V, f = 100MHz	–	500	–	MHz
Output Capacitance	C_{ob}	V_{CB} = 30V, I_E = 0, f = 100kHz	–	8.0	10.0	pF
Functional Tests						
Power Input	P_{in}	V_{CE} = 28V, P_{out} = 2.5W, f = 175MHz	–	–	0.25	W
Common–Emitter Amplifier Power Gain	G_{pe}		10	–	–	dB
Collector Efficiency	η		50	–	–	%