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NTE364 Silicon NPN Transistor RF Power

Description:

The NTE364 is designed for UHF large signal applications required in industrial and commercial FM equipment operating at 512MHz.

Features:

- Specified 10 Volt, 512MHz Characteristics:
 Power Output = 10W
 Minimum Gain = 6.0dB
- RF ballasting provides protection against device damage due to load mismatch
- Characterized with series equivalent large-signal impedance parameters

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

Collector-Emitter Voltage, V_{CEO}	16V
Collector-Base Voltage, V_{CBO}	36V
Emitter-Base Voltage, V_{EBO}	4.0V
Collector Current-Continuous, I_C	2.0A
Total Device Dissipation ($T_C = +25^\circ\text{C}$, Note 1), P_D	37.5W
Derate above 25°C	214mW/ $^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65 to $+200^\circ\text{C}$
Stud Torque (Note 2)	6.5 in-lbs

Note 1 This device is designed for RF operation. The total device dissipation rating applies only when the device is operated as RF amplifier.

Note 2 For repeated assembly use 5 in-lbs.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 200\text{mA}, I_B = 0$	16	-	-	V
	$V_{(BR)CES}$	$I_C = 200\text{mA}, V_{BE} = 0$	36	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 4.0\text{mA}, I_C = 0$	4	-	-	V
Collector Cutoff Current	I_{CES}	$V_{CE} = 15\text{V}, V_{BE} = 0, T_C = 55^\circ\text{C}$	-	0.5	20	mA

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 15\text{V}, I_E = 0$	-	-	2.0	mA
On Characteristics						
DC Current Gain	h_{FE}	$I_C = 500\text{mA}, V_{CE} = 5.0\text{V}$	20	80	-	-
Dynamic Characteristics						
Output Capacitance	C_{ob}	$V_{CB} = 12.5\text{V}, I_E = 0, f = 1.0\text{MHz}$	-	38	45	pF
Functional Test						
Common-Emitter Amplifier Power Gain	-	$V_{CC} = 12.5\text{V}, P_{out} = 10\text{W}, I_C = 1.33\text{A}$	6.0	7.0	-	
Collector Efficiency	η	$V_{CC} = 12.5\text{V}, P_{out} = 10\text{W}, I_C = 1.3\text{A}, f = 470\text{MHz}$	60	-	-	%

