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NTE360 Silicon NPN Transistor RF Power Output $P_O = 40W @ 175MHz$

Description:

The NTE360 is designed primarily for wideband large-signal amplifier stages in the 125–175MHz frequency range.

Features:

- Specified 28 Volt, 175MHz Characteristics:
 Output Power = 40 Watts
 Minimum Gain = 7.6dB
 Efficiency = 60%
- Characterized from 125 to 175MHz
- Includes Series Equivalent Impedances

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO}	35V
Collector–Base Voltage, V_{CB}	65V
Emitter–Base Voltage, V_{EB}	4V
Collector Current–Continuous, I_C	5A
Total Device Dissipation ($T_C = +25^\circ C$), P_D	60W
Derate above $25^\circ C$	342mW/ $^\circ C$
Operating Junction Temperature Range, T_J	–65° to +200°C
Storage Temperature Range, T_{stg}	–65° to +200°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 200mA, I_B = 0, \text{Note 1}$	35	–	–	V
	$V_{(BR)CES}$	$I_C = 200mA, V_{BE} = 0, \text{Note 1}$	65	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10mA, I_C = 0$	4	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 30V, I_E = 0$	–	–	1	mA
On Characteristics						
DC Current Gain	h_{FE}	$I_C = 500mA, V_{CE} = 5.0V$	5.0	–	–	–
Dynamic Characteristics						
Output Capacitance	C_{ob}	$V_{CB} = 30V, I_E = 0, f = 0.1 \text{ to } 1.0MHz$	–	45	65	pF

Note 1 Pulsed through 25mH inductor.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Functional Test						
Common-Emitter Amplifier Power Gain	G_{PE}	$P_{OUT} = 40\text{ W}$, $V_{CE} = 28\text{ V}$, $f = 175\text{ MHz}$	7.6	8.1	-	dB
Collector Efficiency	η	$P_{OUT} = 40\text{ W}$, $V_{CE} = 28\text{ V}$, $f = 175\text{ MHz}$	60	-	-	%

