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NTE333 & NTE334 Silicon NPN Transistors RF Power Output

Description:

The NTE333 & NTE334 are designed for power amplifier applications in industrial, commercial and amateur radio equipment to 30MHz.

Features:

- Specified 12.5 Volt, 30MHz Characteristics–
 Output Power = 60 Watts
 Minimum Gain = 13dB
 Efficiency = 55%

Absolute Maximum Ratings:

Collector–Emitter Voltage, V_{CEO}	18V
Collector–Emitter Voltage, V_{CES}	36V
Emitter–Base Voltage, V_{EBO}	4V
Collector Current–Continuous, I_C	15A
Total Device Dissipation ($T_C = +25^\circ\text{C}$), P_D	175W
Derate Above 25°C	1.0W/ $^\circ\text{C}$
Storage Temperature Range, T_{stg}	-65° to $+150^\circ\text{C}$
Thermal Resistance, Junction–to–Case, R_{thJC}	1.0 $^\circ\text{C}/\text{W}$

Note 1. **NTE334** is a **discontinued** device and **no longer available**.

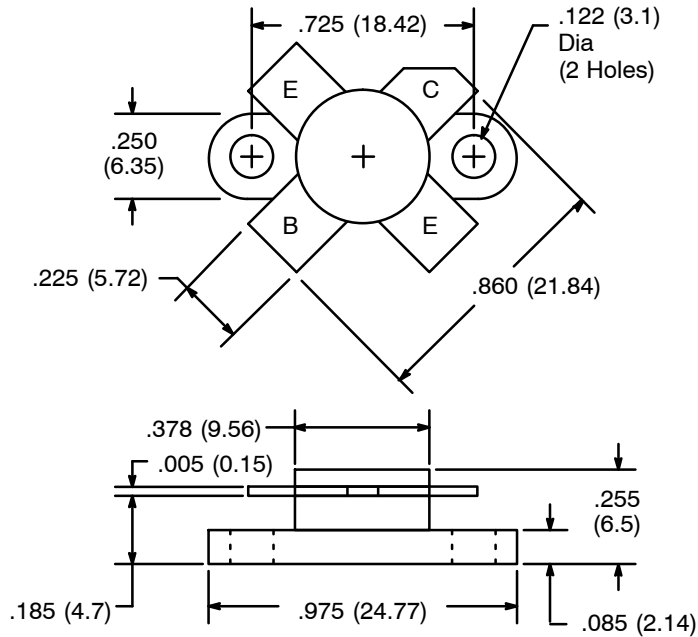
Electrical Characteristics: ($T_C = +25^\circ\text{C}$ unless otherwise specified).

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
OFF Characteristics						
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\text{mA}, I_B = 0$	18	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CES}$	$I_C = 50\text{mA}, V_{BE} = 0$	36	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\text{mA}, I_C = 0$	4.0	–	–	V
ON Characteristics						
DC Current Gain	h_{FE}	$I_C = 5.0\text{A}, V_{CE} = 5.0\text{V}$	10	–	150	
Dynamic Characteristics						
Output Capacitance	C_{ob}	$V_{CB} = 12.5\text{Vdc}, I_E = 0, f = 1.0\text{MHz}$	–	–	250	pF
Common–Emitter Amplifier Power Gain	G_{pe}	$V_{CC} = 12.5\text{Vdc}, P_{out} = 60\text{W}, f = 30\text{MHz}$	13	–	–	dB
Collector Efficiency	η	$V_{CC} = 12.5\text{Vdc}, P_{out} = 60\text{W}, f = 30\text{MHz}$	55	–	–	%
Series Equivalent Input Impedance	Z_{in}	$V_{CC} = 12.5\text{Vdc}, P_{out} = 60\text{W}, f = 30\text{MHz}$	–	1.6 – j.844	–	Ohms
Series Equivalent Output Impedance	Z_{out}	$V_{CC} = 12.5\text{Vdc}, P_{out} = 60\text{W}, f = 30\text{MHz}$	–	1.7 – j.188	–	Ohms

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Dynamic Characteristics (Cont'd)						
Parallel Equivalent Input Impedance	Z_{in}	$V_{CC} = 12.5\text{Vdc}$, $P_{out} = 60\text{W}$, $f = 30\text{MHz}$	-	2.09/ 1030	-	Ω/pF
Parallel Equivalent Output Impedance	Z_{out}	$V_{CC} = 12.5\text{Vdc}$, $P_{out} = 60\text{W}$, $f = 30\text{MHz}$	-	1.75/ 330	-	Ω/pF

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