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NTE78
Silicon NPN Transistor
RF Power Output

Description:

The NTE78 is a silicon NPN epitaxial planer type transistor designed for use as 3 to 4 watt RF power amplifiers in HF band mobile radio applications.

Features:

- High Power Gain
- Emitter Ballasted Construction for High Reliability and Good Performance

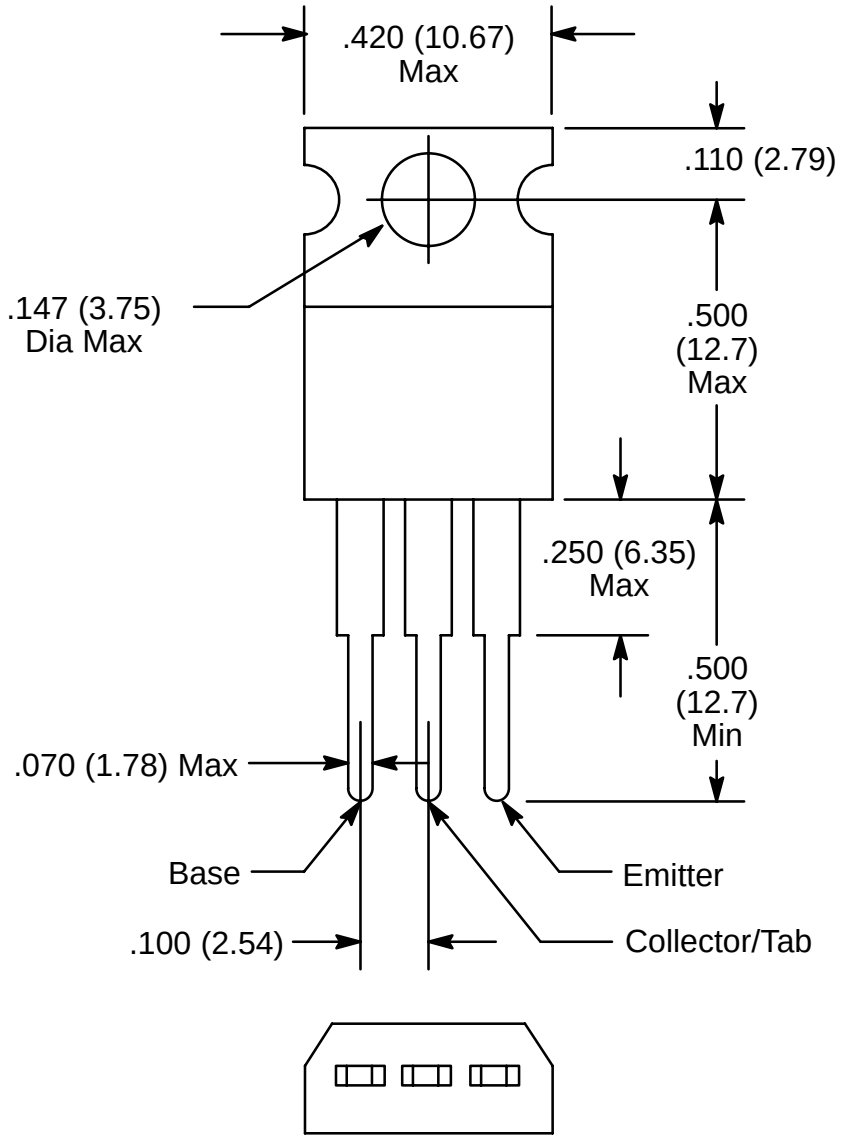
Absolute Maximum Ratings: (T_C = +25°C unless otherwise specified)

Collector–Base Voltage, V_{CBO} 75V
Collector–Emitter Voltage (R_{BE} = 10Ω), V_{CER} 75V
Emitter–Base Voltage, V_{EBO} 5V
Collector Current, I_C 4A
Collector Dissipation (T_A = +25°C), P_C 1.5W
Collector Dissipation (T_C = +25°C), P_C 12.5W
Operating Junction Temperature, T_J . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C
Thermal Resistance, Junction–to–Ambient, R_{thJA} . . . . . 83°C/W
Thermal Resistance, Junction–to–Case, R_{thJC} . . . . . 10°C/W

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 1mA, I_C = 0	5	–	–	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 1mA, I_E = 0	75	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CER}$	I_C = 10mA, R_{BE} = 10Ω	75	–	–	V
Collector Cutoff Current	I_{CBO}	V_{CB} = 30V, I_E = 0	–	–	100	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 3V, I_C = 0	–	–	100	μA
DC Forward Current Gain	h_{FE}	V_{CE} = 10V, I_C = 100mA, Note 1	35	70	180	
Output Power	P_O	V_{CC} = 12V, P_{in} = 250mW, f = 27MHz	6.0	7.5	–	W
Collector Efficiency	η_C		55	60	–	%

Note 1. Pulse test: Pulse Width = 150μs, Duty Cycle = 5%.


.420 (10.67)
Max
.110 (2.79)
.147 (3.75)
Dia Max
.500
(12.7)
Max
.250 (6.35)
Max
.500
(12.7)
Min
.070 (1.78) Max
Base
Emitter
.100 (2.54)
Collector/Tab