NTE36 (NPN) & NTE37 (PNP)
Silicon Complementary Transistors
AF Power Amplifier, High Current Switch

Description:

The NTE36 (NPN) and NTE37 (PNP) are silicon complementary transistors in a TO3P type case designed for AF power amplifier and high current switching applications.

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

Collector–Emitter Voltage, V_{CEO} 140V

Collector–Base Voltage, V_{CBO} 160V

Emitter–Base Voltage, V_{EBO} 6V

Collector Current, I_C
      Continuous 12A
      Peak 15A

Total Power Dissipation $(T_C = +25°C)$, P_D 100W

Operating Junction Temperature, T_J . . . . +150°C

Storage Temperature Range, T_{stg} . . . . −40° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CEO}	$V_{CB} = 80V$, $I_E = 0$	–	–	0.1	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 4V$, $I_C = 0$	–	–	0.1	mA
DC Current Gain	h_{FE1}	$V_{CE} = 5V$, $I_C = 1A$	60	–	200	
	h_{FE2}	$V_{CE} = 5V$, $I_C = 6A$	20	–	–	
Gain Bandwidth Product	f_T	$V_{CE} = 5V$, $I_C = 1A$	–	15	–	MHz
Output Capacitance NTE36 NTE37	C_{ob}	$V_{CB} = 10V$, $f = 1MHz$	 – –	 210 300	 – –	pF
Base–Emitter Voltage	V_{BE}	$V_{CE} = 5V$, $I_C = 1A$	–	–	1.5	V
Collector–Emitter Saturation Voltage NTE36 NTE37	$V_{CE(sat)}$	$I_C = 5A$, $I_B = 500mA$	 – –	 0.6 1.1	 2.5 –	V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 5mA$, $I_E = 0$	160	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5mA$, $R_{BE} = \infty$	140	–	–	V
		$I_C = 50mA$, $R_{BE} = \infty$	140	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 5mA$, $I_C = 0$	6	–	–	V

Turn–On Time
   NTE36
   NTE37
	t_{on}	$10I_{B1} = -10I_{B2} = I_C = 1A$,
		$PW = 20\mu s$
			
			–
			–
				
				0.26
				0.25
					
					–
					–
						μs

Fall Time
   NTE36
   NTE37
	t_f		
			–
			–
				
				0.68
				0.53
					
					–
					–
						μs

Storage Time
   NTE36
   NTE37
	t_{on}		
			–
			–
				
				6.88
				1.61
					
					–
					–
						μs

Note 1. Matched complementary pairs are available upon request (NTE37MCP). Matched complementary pairs have their gain specification (h_{FE}) matched to within 10% of each other.
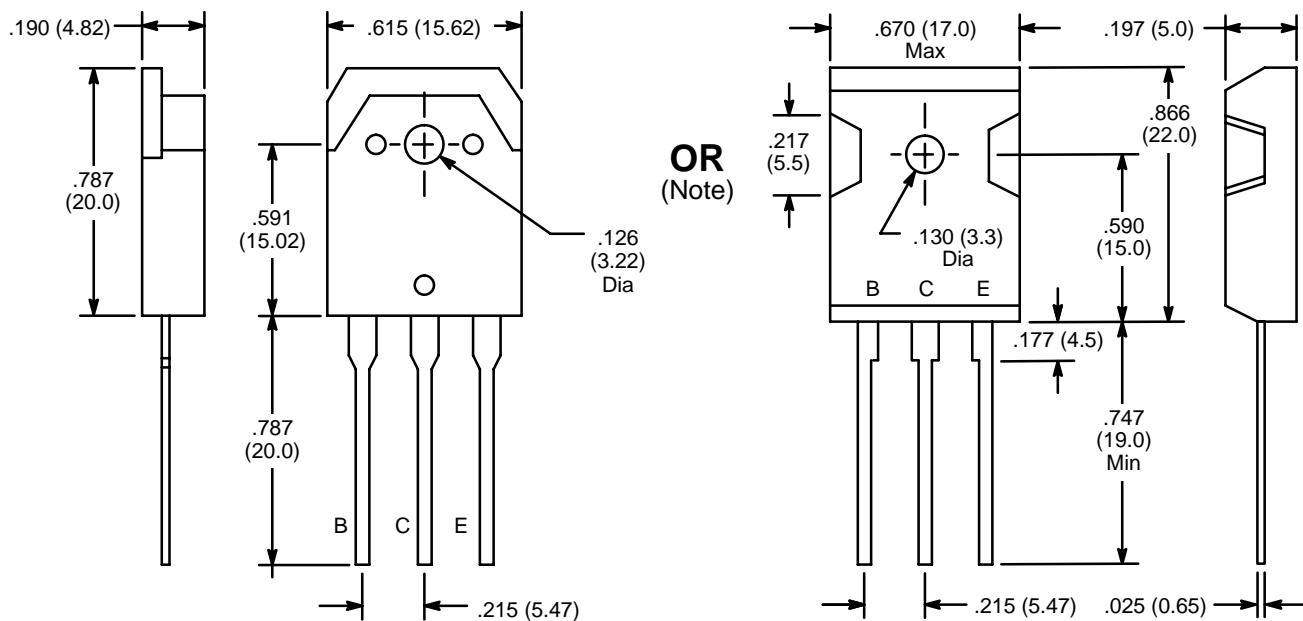
NOTE: Either case style may be shipped depending on stock.