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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: ($T_A = +25^\circ\text{C}$ 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 ($T_C = +25^\circ\text{C}$), P_D	100W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	–40° to +150°C

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

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

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 5\text{mA}, I_E = 0$	160	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5\text{mA}, R_{BE} = \infty$	140	-	-	V
		$I_C = 50\text{mA}, R_{BE} = \infty$	140	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 5\text{mA}, I_C = 0$	6	-	-	V
Turn-On Time NTE36 NTE37	t_{on}	$10I_{B1} = -10I_{B2} = I_C = 1\text{A},$ $PW = 20\mu\text{s}$	-	0.26	-	μs
Fall Time NTE36 NTE37	t_f		-	0.68	-	μs
Storage Time NTE36 NTE37	t_{on}		-	6.88	-	μs
			-	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.

