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NTE24 (NPN) & NTE25 (PNP) Silicon Complementary Transistors General Purpose Amplifier, Switch

Description:

The NTE24 (NPN) and NTE25 (PNP) are complementary silicon transistors in a TO237 type package designed for general purpose medium power amplifier and switching circuits that require collector currents to 1A.

Features:

- High Collector–Emitter Breakdown Voltage: $V_{CEO} = 80V$
- Exceptional Power Dissipation Capability

Absolute Maximum Ratings: ($T_A = +25^\circ C$ unless otherwise specified)

Collector–Base Voltage, V_{CBO}	100V
Collector–Emitter Voltage, V_{CEO}	80V
Emitter–Base Voltage, V_{EBO}	5V
Collector Current, I_C	
Continuous	1A
Peak	2A
Power Dissipation, P_D	
$T_A = +25^\circ C$	850mW
$T_C = +25^\circ C$	2W
Junction Temperature, $T_{J(max)}$	$+150^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$
Thermal Resistance, Junction–to–Case, R_{thJC}	$50^\circ C/W$
Thermal Resistance, Junction–to–Ambient, R_{thJA}	$167^\circ C/W$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	80	–	–	V
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100V, I_E = 0$	–	–	0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 5V, I_C = 0$	–	–	100	nA
DC Current Gain	h _{FE}	$V_{CE} = 2V, I_C = 50mA$	40	–	–	
		$V_{CE} = 2V, I_C = 250mA$	40	–	–	
		$V_{CE} = 2V, I_C = 500mA$	25	–	–	

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 50\text{mA}$	–	–	0.5	V
		$I_C = 1000\text{mA}, I_B = 100\text{mA}$	–	–	1.5	V
Base–Emitter ON Voltage	$V_{BE(on)}$	$V_{CE} = 2\text{V}, I_C = 1000\text{mA}$	–	–	0.5	V
Current Gain Bandwidth Product	f_T	$V_{CE} = 5\text{V}, I_C = 200\text{mA}, f = 100\text{MHz}$	50	–	–	MHz
Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	–	–	30	pF

