



NTE2361 (NPN) & NTE2362 (PNP) Silicon Complementary Transistors High Speed Switch

Description:

The NTE2361 (NPN) and NTE2362 (PNP) complimentary silicon transistors are designed for general-purpose amplifier and high speed switching applications. The high gain of these devices makes it possible for them to be driven directly from integrated circuits.

Features:

- Very Small-Sized Package
- High Breakdown Voltage: $V_{CEO} = 50V$

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

Collector-Base Voltage, V_{CBO}	60V
Collector-Emitter Voltage, V_{CEO}	50V
Emitter-Base Voltage, V_{EBO}	5V
Collector Current, I_C	
Continuous	500mA
Peak	800mA
Collector Dissipation, P_C	300mW
Operating Junction Temperature Range, T_J	-55° to $+150^\circ C$
Storage Temperature Range, T_{stg}	-55° to $+150^\circ C$

Note 1. For PNP device (NTE2362), voltage and current values are negative.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 40V_{dc}$, $I_E = 0$	–	–	0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{BE} = 4V_{dc}$	–	–	0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 5V$, $I_C = 10mA$	200	–	400	
Gain Bandwidth Product	f_T	$V_{CE} = 10V$, $I_C = 50mA$				
		NTE2361	–	200	–	MHz
		NTE2362	–	300	–	MHz

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

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Output Capacitance	C_{ob}	$V_{CB} = 10\text{Vdc}$, $f = 1\text{MHz}$	NTE2361	–	5.6	–	pF
			NTE2362	–	3.7	–	pF
Collector–Emitter Saturation Voltage	$V_{CE(\text{sat})}$	$I_C = 100\text{mA}$, $I_B = 10\text{mA}$	NTE2361	–	0.15	0.4	V
			NTE2362	–	0.1	0.3	V
Base–Emitter Saturation Voltage	$V_{BE(\text{sat})}$	$I_C = 100\text{mA}$, $I_B = 10\text{mA}$		–	0.8	1.2	V
Collector–Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}$, $I_E = 0$		60	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 100\mu\text{A}$, $R_{BE} = \infty$		50	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}$, $I_C = \infty$		5	–	–	V
Rise Time	t_{on}	$V_{CC} = 20\text{V}$, $I_C = 100\text{mA}$, $I_{B1} = 10\text{mA}$, $I_{B2} = 100\text{mA}$		–	70	–	ns
Storage Time	t_{stg}			–	400	–	ns
Fall Time	t_f			NTE2361	–	50	–
		NTE2362	–	70	–	ns	

Note 1. For PNP device (NTE2362), voltage and current values are negative.

Note 2. Conditions apply to both except where noted.

