

## NTE2530 (NPN) & NTE2531 (PNP) Silicon Complementary Transistors High Voltage Driver

**Features:**

- High Current Capacity:  $I_C = 2A$
- High Breakdown Voltage:  $V_{CEO} = 400V$  Min

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

Collector Base Voltage, $V_{CBO}$ .....	400V
Collector Emitter Voltage, $V_{CEO}$ .....	400V
Emitter Base Voltage, $V_{EBO}$ .....	5V
Collector Current, $I_C$	
Continuous .....	2A
Pulse .....	4A
Collector Power Dissipation, $P_C$	
$T_A = +25^\circ C$ .....	1W
$T_C = +25^\circ C$ .....	15W
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	-55° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 300V, I_E = 0$	-	-	1.0	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 4V, I_C = 0$	-	-	1.0	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE} = 10V, I_C = 100mA$	40	-	200	
Gain-Bandwidth Product	$f_T$	$V_{CE} = 10V, I_C = 100mA$	-	60	-	MHz
			-	40	-	MHz
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 50mA$	-	-	1.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 500mA, I_B = 50mA$	-	-	1.0	V
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	400	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1mA, R_{BE} = \infty$	400	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	5	-	-	V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Capacitance NTE2530	$C_{ob}$	$V_{CB} = 30\text{V}, f = 1\text{MHz}$	–	15	–	$\mu\text{F}$
NTE2531			–	25	–	$\mu\text{F}$
Turn-On Time NTE2530	$t_{on}$	$V_{CC} = 150\text{V}, V_{BE} = -5\text{V},$ $10I_{B1} = -10I_{B2} = I_C = 500\text{mA},$ $R_L = 300\Omega, R_B = 20\Omega,$ at $I_C = 500\text{mA},$ Pulse Width = $20\mu\text{s},$ Duty Cycle $\leq 1\%$ , Note 1	–	0.085	–	$\mu\text{s}$
NTE2531			–	0.12	–	$\mu\text{s}$
Storage Time NTE2530	$t_{stg}$		–	4.0	–	$\mu\text{s}$
NTE2531			–	3.0	–	$\mu\text{s}$
Fall Time NTE2530	$t_f$		–	0.6	–	$\mu\text{s}$
NTE2531			–	0.3	–	$\mu\text{s}$

Note 1. For NTE2531, the polarity is reversed.

