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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	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	–	–	1.0	μA
DC Current Gain	h_{FE}	$V_{CE} = 10V, I_C = 100mA$	40	–	200	
Gain–Bandwidth Product NTE2530	f_T	$V_{CE} = 10V, I_C = 100mA$	–	60	–	MHz
NTE2531			–	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	–	pF
NTE2531			–	25	–	pF
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	–	μs
NTE2531			–	0.12	–	μs
Storage Time NTE2530	t_{stg}		–	4.0	–	μs
NTE2531			–	3.0	–	μs
Fall Time NTE2530	t_f		–	0.6	–	μs
NTE2531			–	0.3	–	μs

Note 1. For NTE2531, the polarity is reversed.

