ELECTRONICS, INC.
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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°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°C 1W
  T_C = +25°C 15W
Operating Junction Temperature, T_J . . . . . +150°C
Storage Temperature Range, T_{stg} . . . . . –55° to +150°C

Electrical Characteristics: (T_A = +25°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 = 10μA, I_E = 0	400	–	–	V
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, R_{BE} = ∞	400	–	–	V
Emitter–Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	5	–	–	V

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specified)

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

Note 1. For NTE2531, the polarity is reversed.

