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NTE2515 (NPN) & NTE2516 (PNP) Silicon Complementary Transistors High Current Switch

Features:

- Low Collector Emitter Saturation Voltage
- High Gain–Bandwidth Product
- Excellent Linearity of h_{FE}
- Fast Switching Time

Applications:

- Display Drivers
- High Speed Inverters
- Converters

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

Collector Base Voltage, V_{CBO}	120V
Collector Emitter Voltage, V_{CEO}	100V
Emitter Base Voltage, V_{EBO}	6V
Collector Current, I_C	
Continuous	4A
Peak	8A
Collector Power Dissipation, P_C	
$T_A = +25^\circ\text{C}$	1.2W
$T_C = +25^\circ\text{C}$	20W
Operating Junction Temperature, T_J	+150°C
Storage Temperature Range, T_{stg}	-55° to +150°C

Note 1. **NTE2516** is a **discontinued** device and **no longer available**.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100V, I_E = 0$	-	-	1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4V, I_C = 0$	-	-	1.0	μA
DC Current Gain	h_{FE}	$V_{CE} = 5V, I_C = 500\text{mA}$	140	-	240	
		$V_{CE} = 5V, I_C = 3A$	40	-	-	
Gain–Bandwidth Product NTE2515	f_T	$V_{CE} = 10V, I_C = 500\text{mA}$	-	180	-	MHz
			-	130	-	MHz
NTE2516						

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Capacitance NTE2515	C_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$	-	40	-	pF
NTE2516			-	65	-	pF
Collector Emitter Saturation Voltage NTE2515	$V_{CE(sat)}$	$I_C = 2\text{A}, I_B = 200\text{mA}$	-	150	400	mV
NTE2516			-	200	500	mV
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2\text{A}, I_B = 200\text{mA}$	-	0.9	1.2	V
Collector Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu\text{A}, I_E = 0$	120	-	-	V
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, R_{BE} = \infty$	100	-	-	V
Emitter Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 10\mu\text{A}, I_C = 0$	6	-	-	V
Turn-On Time	t_{on}	$V_{CC} = 25\text{V}, V_{BE} = -5\text{V},$ $10I_{B1} = -10I_{B2} = I_C = 2\text{A},$ Pulse Width = $20\mu\text{s},$ Duty Cycle $\leq 1\%$, Note 2	-	100	-	ns
Storage Time NTE2515	t_{stg}		-	900	-	ns
NTE2516			-	800	-	ns
Fall Time	t_f		-	50	-	ns

Note 2. For NTE2516, the polarity is reversed.

