



**ELECTRONICS, INC.**  
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## NTE2545 (NPN) & NTE2546 (PNP) Silicon Complementary Transistors Darlington, High Speed Driver

**Features:**

- High Speed Switching
- Wide ASO Range
- High Gain Bandwidth Product

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

Collector Base Voltage, $V_{CBO}$ .....	70V
Collector Emitter Voltage, $V_{CEO}$ .....	60V
Emitter Base Voltage, $V_{EBO}$ .....	5V
Collector Current, $I_C$	
Continuous .....	5A
Peak .....	8A
Collector Power Dissipation, $P_C$	
$T_A = +25^\circ\text{C}$ .....	1.75W
$T_C = +25^\circ\text{C}$ .....	30W
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	-55° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 40V, I_E = 0$	-	-	0.1	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$	-	-	3.0	mA
DC Current Gain	$h_{FE}$	$V_{CE} = 2V, I_C = 2.5A$	2000	5000	-	
Gain-Bandwidth Product	$f_T$	$V_{CE} = 5V, I_C = 2.5A$	-	200	-	MHz
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 2.5A, I_B = 5mA$	-	0.9	-	V
NTE2545			-	1.0	1.5	V
NTE2546						
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 2.5A, I_B = 5mA$	-	-	2.0	V
Collector Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 5mA, I_E = 0$	70	-	-	V
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 50mA, R_{BE} = \infty$	60	-	-	V

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Time	$t_{on}$	$V_{CC} = 20\text{V}$ , $V_{BE} = -5\text{V}$ , $500I_{B1} = -500I_{B2} = I_C = 2\text{A}$ , Pulse Width = $50\mu\text{s}$ , Duty Cycle $\leq 1\%$ , Note 1	-	0.3	-	$\mu\text{s}$
Storage Time NTE2545	$t_{stg}$		-	1.2	-	$\mu\text{s}$
NTE2546			-	1.3	-	$\mu\text{s}$
Fall Time	$t_f$		-	0.2	-	$\mu\text{s}$

Note 1. For NTE2546, the polarity is reversed.

