



ELECTRONICS, INC.

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NTE2644 Silicon NPN Transistor Darlington

Features:

- High DC Current Gain
- Low Saturation Voltage
- Zener Diode Included Between Collector and Base

Applications:

- Micro Motor Drive, Hammer Drive Applications
- Switching Applications
- Power Amplifier Applications

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

Collector-Base Voltage, V_{CBO}	60 \pm 10V
Collector-Emitter Voltage, V_{CEO}	60 \pm 10V
Emitter-Base Voltage, V_{EBO}	8V
Collector Current, I_C	2A
Base Current, I_B	500mA
Collector Power Dissipation, P_C	900mW
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}	$V_{CB} = 45\text{V}, I_E = 0$	-	-	10	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 8\text{V}, I_C = 0$	-	-	4	mA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10\text{mA}, I_B = 0$	50	60	70	V
DC Current Gain	h_{FE}	$V_{CE} = 2\text{V}, I_C = 1\text{A}$ (Pulsed)	2000	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1\text{A}, I_B = 1\text{mA}$ (Pulsed)	-	-	1.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 1\text{A}, I_B = 1\text{mA}$ (Pulsed)	-	-	2.0	V
Transition Frequency	f_T	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$ (Pulsed)	-	100	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB} = 10\text{V}, I_E = 0, f = 1\text{MHz}$	-	20	-	pF
Unclamped Inductive Load Energy	$E_{S/B}$	$L = 10\text{mH}, I_C = 1.3\text{A}, I_B = \pm 50\text{mA}$	8.4	-	-	mJ

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Switching Times						
Turn-On Time	t_{on}	$V_{CC} = 30\text{V}, I_{B1} = -I_{B2} = 1\text{mA},$ Duty Cycle $\leq 1\%$	-	0.4	-	μs
Storage Time	t_{stg}		-	4.0	-	μs
Fall Time	t_f		-	0.6	-	μs

