



**ELECTRONICS, INC.**  
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## NTE2340 Silicon NPN Transistor Darlington Power Amp, Switch

**Features:**

- 60V Zener Diode Built-In Between Collector and Base
- Very Small Fluctuation in Breakdown Voltages
- Large Energy Handling Capability
- High Speed Switching

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

Collector–Base Voltage, $V_{CBO}$ .....	60 $\pm$ 10V
Collector–Emitter Voltage, $V_{CEO}$ .....	60 $\pm$ 10V
Emitter–Base Voltage, $V_{EBO}$ .....	7V
Collector Current, $I_C$	
Continuous .....	8A
Peak .....	12A
Collector Power Dissipation, $P_C$	
$T_A = +25^\circ\text{C}$ .....	1.3W
$T_C = +25^\circ\text{C}$ .....	45W
Operating Junction Temperature, $T_J$ .....	+150 $^\circ\text{C}$
Storage Temperature Range, $T_{stg}$ .....	–55 $^\circ$ to +150 $^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cut–Off Current	$I_{CBO}$	$V_{CB} = 50\text{V}, I_E = 0$	–	–	100	$\mu\text{A}$
Emitter Cut–Off Current	$I_{EBO}$	$V_{EB} = 7\text{V}, I_C = 0$	–	–	2	mA
Collector–Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 5\text{mA}, I_B = 0$	50	–	70	V
DC Current Gain	$h_{FE(1)}$	$V_{CE} = 3\text{V}, I_C = 4\text{A}$	2000	–	5000	
	$h_{FE(2)}$	$V_{CE} = 3\text{V}, I_C = 8\text{A}$	500	–	–	
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4\text{A}, I_B = 8\text{mA}$	–	–	1.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4\text{A}, I_B = 8\text{mA}$	–	–	2.0	V
Transition Frequency	$f_T$	$V_{CE} = 10\text{V}, I_C = 0.5\text{A}, f = 1\text{MHz}$	–	20	–	MHz
Turn–On Time	$t_{on}$	$V_{CC} = 50\text{V}, I_{B1} = -I_{B2} = 8\text{mA}, I_C = 4\text{A}$	–	0.5	–	$\mu\text{s}$
Storage Time	$t_{stg}$		–	4.0	–	$\mu\text{s}$
Fall Time	$t_f$		–	1.0	–	$\mu\text{s}$
Energy Handling Capability	$E_{s/b}$	$I_C = 1\text{A}, L = 100\text{mH}, R_{BE} = 100\Omega$	50	–	–	mJ

