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## NTE2540 Silicon NPN Transistor Darlington, High Voltage Switch TO-220 Full Pack

**Features:**

- High DC Current Gain:  $h_{FE} = 600$  Min ( $V_{CE} = 2V, I_C = 2A$ )
- Monolithic Construction <sup>w</sup>/Built-In Base-Emitter Shunt Resistor

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

Collector Base Voltage, $V_{CBO}$ .....	600V
Collector Emitter Voltage, $V_{CEO}$ .....	400V
Emitter Base Voltage, $V_{EBO}$ .....	5V
Collector Current, $I_C$ .....	6A
Base Current, $I_B$ .....	1A
Collector Power Dissipation, $P_C$	
$T_A = +25^\circ C$ .....	2W
$T_C = +25^\circ C$ .....	25W
Operating Junction Temperature, $T_J$ .....	+150°C
Storage Temperature Range, $T_{stg}$ .....	-55° to +150°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Cutoff Current	$I_{CBO}$	$V_{CB} = 600V, I_E = 0$	-	-	0.5	mA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 5V, I_C = 0$	-	-	3	mA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	400	-	-	V
DC Current Gain	$h_{FE}$	$V_{CE} = 2V, I_C = 2A$	600	-	-	
		$V_{CE} = 2V, I_C = 4A$	100	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 4A, I_B = 40mA$	-	-	2.0	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 4A, I_B = 40mA$	-	-	2.5	V
Emitter-Collector Forward Voltage	$V_{ECF}$	$I_E = 4A, I_B = 0$	-	-	3.0	V
Collector Output Capacitance	$C_{ob}$	$V_{CB} = 50V, I_E = 0, f = 1MHz$	-	35	-	pF
Turn-On Time	$t_{on}$	$V_{CC} = 100V,$ $I_{B1} = -I_{B2} = 40mA,$ Duty Cycle $\leq 1\%$	-	1	-	$\mu s$
Storage Time	$t_{stg}$		-	8	-	$\mu s$
Fall Time	$t_f$		-	5	-	$\mu s$

### Darlington Internal Schematic

