

NTE214 Silicon NPN Transistor Darlington Driver

Description:

The NTE214 is a silicon NPN Darlington transistor in a TO3P type package. Typical applications include motor drivers, printer hammer drivers, relay drivers, regulated DC power supply controllers.

Features:

- High DC Current Gain
- Large Current Capacity and Wide ASO
- Low Saturation Voltage

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

Collector to Base Voltage, V_{CBO}	70V
Collector to Emitter Voltage, V_{CEO}	60V
Emitter to Base Voltage, V_{EBO}	6V
Collector Current, I_C	
Continuous	10A
Peak	15A
Collector Dissipation ($T_A = +25^\circ\text{C}$), P_C	2.5W
Collector Dissipation ($T_C = +25^\circ\text{C}$), P_C	60W
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}	$V_{CE} = 2V, I_C = 5A$	2000	5000	—	
Current Gain–Bandwidth Product	f_T	$V_{CE} = 5V, I_C = 5A$	—	20	—	MHz
Collector–Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 5A, I_B = 10mA$	—	0.9	1.5	V
Base–Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = 5A, I_B = 10mA$	—	—	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
Turn–On Time	t_{on}	$V_{CC} = 20V, V_{BE} = -5V,$ $500I_{B1} = -500I_{B2} = I_C = 5A,$ $PW = 50\mu s, \text{Duty Cycle} \leq 1\%$	—	0.6	—	μs
Storage Time	t_{stg}		—	3.0	—	μs
Fall Time	t_f		—	1.8	—	μs

Schematic Diagram

