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NTE2079 Integrated Circuit 7-Stage Darlington Transistor Array

Description:

The NTE2079 is a 7-channel sink driver in a 16-Lead DIP type package and consists of 14 NPN transistors connected to form seven high current gain driver pairs.

Features:

- High Output Sustaining Voltage to 40V
- High Output Sink Current to 400mA
- PMOS Compatible Input
- Wide Operating Temperature Range ($T_A = -20^\circ$ to $+75^\circ\text{C}$)

Application:

Relay and printer driver, LED or Incandescent display digit driver, Interfacing for standard MOS/BI POLAR logics.

Function:

The NTE2079 is comprised of seven NPN Darlington drivers pairs with 20kΩ series input resistors. All emitters and the substrate are connected together to Pin8. The outputs are capable of sinking 400mA and will withstand 40V in the OFF state.

Absolute Maximum Ratings: ($T_A = -20^\circ$ to $+75^\circ\text{C}$ unless otherwise specified)

Output sustaining Voltage (Transistor OFF), V_{CEO} -0.5 to +40V
 Collector Current (Transistor ON), I_C 400mA
 Input Voltage, V_I 40V
 Power Dissipation ($T_A = +25^\circ\text{C}$), P_D 1.47W
 Operating Ambient Temperature Range, T_{opr} -20° to $+75^\circ\text{C}$
 Storage Temperature Range, T_{stg} -55° to $+125^\circ\text{C}$

Recommended Operational Conditions: ($T_A = -20^\circ\text{C}$ to $+75^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_O		0	–	40	V
Collector Current Per Channel	I_O	Percent duty cycle less than 8%	0	–	400	mA
		Percent duty cycle less than 30%	0	–	40	V
Input Voltage, High Level	V_{IH}	$I_C = 400\text{mA}$	8	–	30	V
		$I_C = 100\text{mA}$	5	–	30	V
Input Voltage, Low Level	V_{IL}	$I_{O(Leak)} = 50\mu\text{A}$	0	–	0.5	V

Electrical Characteristics: ($T_A = -20^\circ$ to $+75^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Sustaining Voltage	$V_{(BR)CEO}$		40	–	–	V
Output Saturation Voltage	$V_{CE(sat)}$	$V_i = 5\text{V}, I_C = 400\text{mA}$	–	1.2	2.4	V
		$V_i = 5\text{V}, I_C = 200\text{mA}$	–	0.9	1.6	V
Input Current	I_I	$V_i = 17\text{V}$	0.3	0.8	1.8	mA
DC Forward Current Gain	h_{FE}	$V_{CE} = 4\text{V}, I_C = 400\text{mA}, T_A = 25^\circ\text{C}$	1000	6000	–	–

Note 1. A typical value is at $T_A = +25^\circ\text{C}$

Pin Connection Diagram

