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## NTE2078 Integrated Circuit 5-Stage Darlington Transistor Array

**Description:**

The NTE2078 is a 5-channel sink driver consisting of 10 NPN transistors connected to form high current gain driver pairs.

**Features:**

- Output sustaining voltage to 30V
- High Output Sink Current to 500mA
- Wide Operating Temperature Range ( $T_A = -20^\circ$  to  $+75^\circ\text{C}$ )

**Application:**

- Relay and printer drivers
- LED or incandescent display digit driver
- Interface for standard MOS/Bi POLAR logics.

**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 30V  
 Collector Current (Transistor ON),  $I_C$  ..... 500mA  
 Power Dissipation ( $T_A = +25^\circ\text{C}$ ),  $P_d$  ..... 1.47W  
 Operating Ambient Temperature Range,  $T_{opr}$  .....  $-20^\circ$  to  $+75^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-55^\circ$  to  $+125^\circ\text{C}$

**Electrical Characteristics:** ( $T_A = -20^\circ$  to  $+75^\circ\text{C}$ , Note 1, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Sustaining Voltage	$V_{(BR)CEO}$	$I_{CEO} = 100\mu\text{A}$	30	-	-	V
Output Saturation Voltage	$V_{CE(sat)}$	$V_I = 2\text{mA}, I_C = 400\text{mA}$	-	1.0	2.4	V
		$V_I = 1\text{mA}, I_C = 200\text{mA}$	-	0.8	1.6	
Input Voltage	$V_I$	$I_I = 1\text{mA}$	0.6	1.35	1.7	V
Output Voltage	$V_O$		0	-	30	V

Note 1. All typical values are at  $T_A = 25^\circ\text{C}$ .

**Electrical Characteristics (Cont'd):** ( $T_A = -20^\circ$  to  $+75^\circ\text{C}$ , Note 1, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector Current per Channel	$I_C$	Percent Duty Cycle: $< 10\%$	0	–	400	mA
		Percent Duty Cycle: $< 55\%$	0	–	200	
“H” Input Current	$I_{IH}$	$I_C = 200\text{mA}$	1	–	5	mA
		$I_C = 400\text{mA}$	2	–	5	
“L” Input Current	$I_{IL}$		–	0	–	$\mu\text{A}$

Note 1. All typical values are at  $T_A = 25^\circ\text{C}$ .

**Pin Connection Diagram**

