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NTE2083 Integrated Circuit 6-Segment, 150mA Darlington Transistor Array

Description:

The circuit construction of this IC is a Darlington transistor array with six units, most suitable for printer hammer drive, lamp, and relay drive. With built-in protective diodes against negative inputs, it is advantageous in designing drive circuits for printer calculators and cash registers.

Features:

- Since six units are included, it is suitable for 18-digit printers.
- The load current is considerably large i.e., 230mA and is, thus, suitable for thermal printers

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

Output Supply Voltage, V_{OUT}	-0.3 to +20V
Input Supply Voltage, V_{IN}	-40 to +20V
Output Inflow Current, I_{OUT} per unit	150mA
Instantaneous Output Inflow, i_{op} per unit duty = 60%	
Current pulse width < 2msec	230mA
GND Pin Inflow Current, I_7	-700mA
GND Pin Instantaneous Outflow, I_{7p} duty = 60%	1.4A
Current pulse width < 2msec	
Allowable Power Dissipation, P_{dmax}	1.15W
Instantaneous Allowable Power Pulse width must be less than	2.3W
Dissipation 2msec. The percentage of all of 6 units being ON must be less than 50% for 100msec.	
Junction Temperature, T_j	125°C
Operating Temperature, T_{opg}	-20 to +70°C
Storage Temperature, T_{stg}	-40 to +125°C

Recommended Operating Conditions: ($T_A = +25^\circ\text{C}$, unless otherwise specified)

Output Supply Voltage, V_{OUT}	20V
Input "H" Level Voltage, V_{IH} output terminal current = 150mA	15 to 20V
Input "L" Level Voltage, V_{IL} output terminal current = 100µA	-35 to +1V
Load Resistance, R_L No inductance components should be included.	80ohm (min)

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Output Voltage	$V_{\text{OUT}(1)}$	$V_{\text{IN}} = 15\text{V}, I_{\text{OUT}} = 230\text{mA}$	-	-	1.7	V
Output Voltage	$V_{\text{OUT}(2)}$	$V_{\text{IN}} = 15\text{V}, I_{\text{OUT}} = 150\text{mA}$	-	-	1.5	V
Output Leak Current	I_{off}	$V_{\text{IN}} = 1.0\text{V}, V_{\text{OUT}} = 20\text{V}$	-	-	100	μA
Input Current	I_{IN}	$V_{\text{IN}} = 18\text{V}$	-	-	1.8	mA
Output Current	I_{OUT}	$I_{\text{IN}} = 0.5\text{mA}, V_{\text{OUT}} = 1.5\text{V}$	150	-	-	mA
Input Leak Current	I_{Leak}	$V_{\text{IN}} = -35\text{V}$	-10	-	-	μA

Pin Connection Diagram

