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## NTE2032 Integrated Circuit BCD-to-Seven-Segment Decoder Driver

**Description:**

The NTE2032 is a monolithic integrated circuit in a 16-Lead DIP type package that performs the BCD-to-seven-segment decoding function and features constant-current segment drivers. When used with the NTE2054 A/D converter, the NTE2032 provides a complete digital readout system with a minimum number of external parts.

**Features:**

- TTL Compatible Input Logic Levels
- 25mA (Typ) Constant Current Segment Outputs
- Eliminates Need for Output Current Limiting Resistors
- Pin Compatible with Other Industry Standard Decoders
- Low Standby Power Dissipation: 18mW Typ

**Absolute Maximum Ratings:**

DC Supply Voltage (Between Pin1 and Pin10), V+	7V
Input Voltage (Pin1, Pin2, Pin6, and Pin7), V <sub>IN</sub>	5.5V
Output Voltage, V <sub>O</sub>	
Output "OFF"	7V
Output "ON" (Note 1)	10V
Device Dissipation (T <sub>A</sub> ≤ +55°C), P <sub>D</sub>	1W
Derate Above 55°C	10.5mW/°C
Operating Ambient Temperature Range, T <sub>opr</sub>	0° to +75°C
Storage Temperature Range, T <sub>stg</sub>	-65° to +150°C
Lead Temperature (During Soldering, 1.16" ±1/32" (1.59mm ±0.79mm), 10sec max), T <sub>L</sub>	.. +265°C

Note 1. This is the maximum output voltage for any single output. The output voltage must be consistent with the maximum dissipation and worst case conditions. Example: All segments "ON", 100% duty cycle.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Supply Voltage Operating Range	V+		4.5	5.0	5.5	V
Supply Current	I+	All Inputs High	–	3.5	8.0	mA
Output Current Low		$V_O = 2V$	18	25	32	mA
Output Current High		$V_O = 5.5V$	–	–	250	$\mu\text{A}$
Input Voltage High (Logic “1” Level)			2	–	–	V
Input Voltage Low (Logic “0” Level)			–	–	0.8	V
Input Current High (Logic “1”)		2V	–30	–	–	$\mu\text{A}$
Input Current Low (Logic “0”)		0V	–40	–	–	$\mu\text{A}$
Propagation Delay Time	$t_{\text{PHL}}$		–	2.6	–	$\mu\text{s}$
	$t_{\text{PLH}}$		–	1.4	–	$\mu\text{s}$

**Truth Table:**

Binary State	Inputs				Outputs							Displays	
	$2^3$	$2^2$	$2^1$	$2^0$	a	b	c	d	e	f	g		
0	L	L	L	L	L	L	L	L	L	L	L	H	0
1	L	L	L	H	H	L	L	H	H	H	H	H	1
2	L	L	H	L	L	L	H	L	L	H	L	L	2
3	L	L	H	H	H	L	L	L	H	H	L	L	3
4	L	H	L	L	L	L	L	H	H	L	L	L	4
5	L	H	L	H	H	H	L	L	H	L	L	L	5
6	L	H	H	L	L	H	L	L	L	L	L	L	6
7	L	H	H	H	H	L	L	H	H	H	H	H	7
8	H	L	L	L	L	L	L	L	L	L	L	L	8
9	H	L	L	H	H	L	L	L	H	L	L	L	9
10	H	L	H	L	L	H	H	H	H	H	L	L	–
11	H	L	H	H	H	H	H	L	L	L	L	L	E
12	H	H	L	L	L	L	L	H	L	L	L	L	H
13	H	H	L	H	H	H	H	L	L	L	H	L	L
14	H	H	H	L	L	L	H	H	L	L	L	L	P
15	H	H	H	H	H	H	H	H	H	H	H	H	Blank

### Pin Connection Diagram

