DESCRIPTION

The N7441B Nixie* Decoder/Driver is a one-out-of-ten decoder which has been designed to provide the necessary high voltage characteristics required for driving gas-filled cold-cathode indicator tubes.

It may also be utilized in driving relays or other high voltage interface circuitry. The element is designed using TTL techniques and is therefore completely compatible with DTL and TTL elements.

The specially designed output drivers provide the necessary stable output state. There are no input codes where all outputs are "off" or where more than one output can be turned "on".
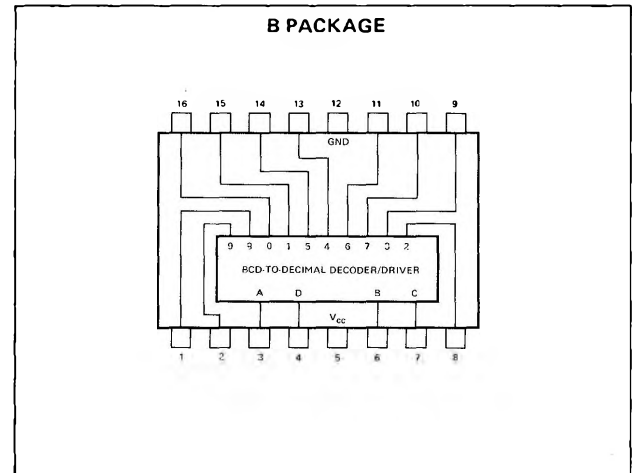
RECOMMENDED OPERATING CONDITIONS

Supply Voltage V_{CC} (See Note 1)	4.75 to 5.25V
Maximum Voltage on any Output	70V

NOTE:
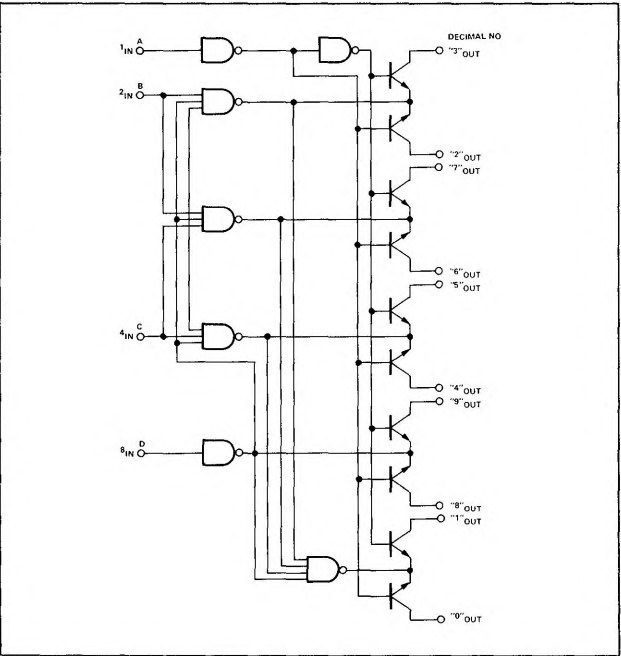1. These voltage values are with respect to network ground terminal.

PIN CONFIGURATION

B PACKAGE

BCD-TO-DECIMAL DECODER/DRIVER

SCHEMATIC DIAGRAM
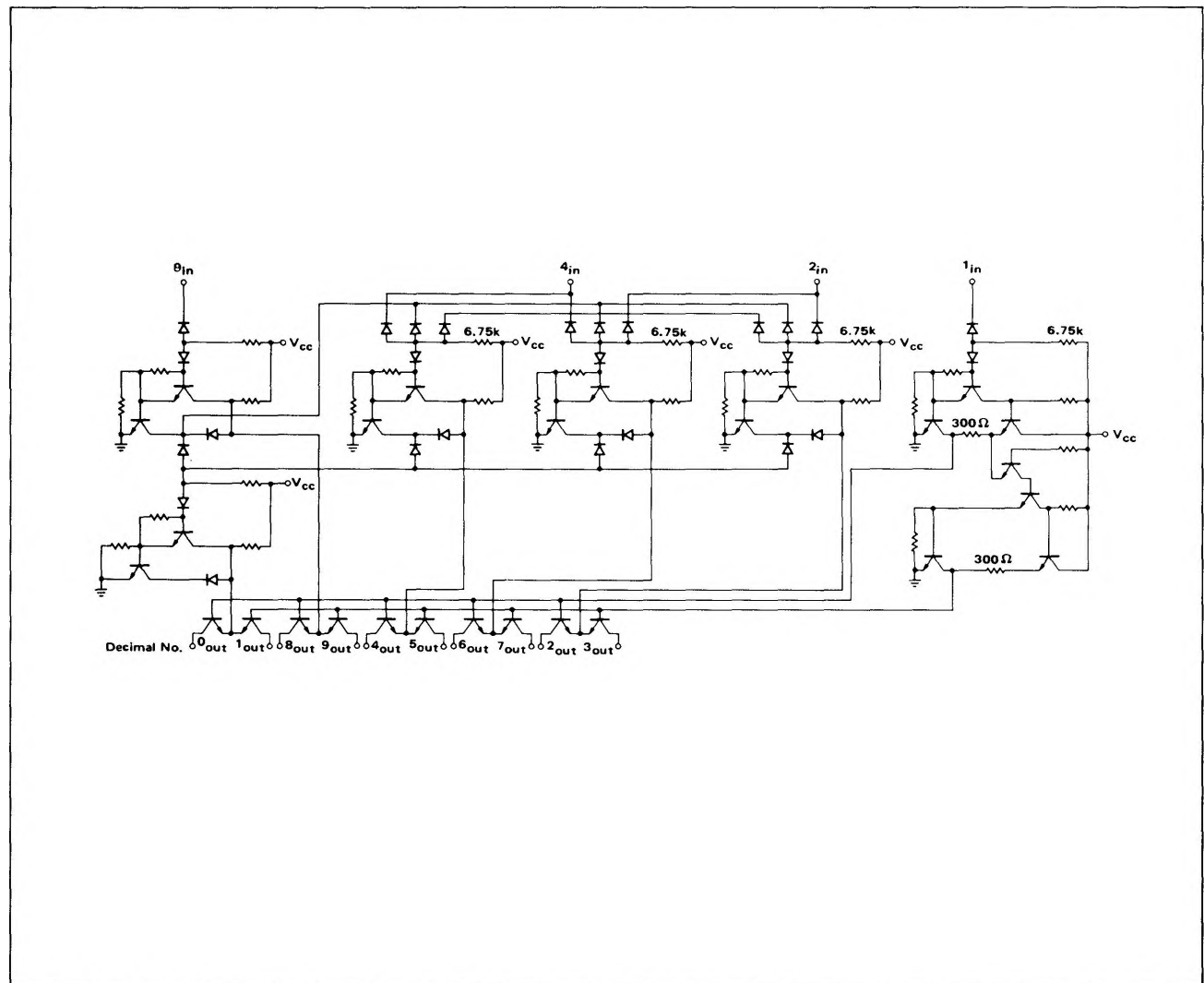
LOGIC DIAGRAM

TRUTH TABLE

INPUT				OUTPUT
D	C	B	A	ON†
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	0	0	0	8
1	0	0	1	9

† All other inputs are off.

ELECTRICAL CHARACTERISTICS, $T_A = 0°$ C to $70°$ C, unless otherwise noted.

PARAMETER		TEST CONDITIONS		MIN	TYP*	MAX	UNIT
$V_{in(1)}$	Logical 1 input voltage	$V_{CC} = 4.75V$		2			V
$V_{in(0)}$	Logical 0 input voltage	$V_{CC} = 4.75V$				0.8	V
V_{on}	On-state output voltage	$V_{CC} = 4.75V$,	$I_{on} = 7mA$			2.5	V
I_{off}	Off-state reverse current	$V_{CC} = 5.25V$,	$V_{out} = 55V$			50	μA
		$V_{CC} = 5.25V$,	$V_{out} = 70V$			2	mA
$I_{in(1)}$	Logical 1 level input current at B, C, or D	$V_{CC} = 5.25V$,	$V_{in} = 2.4V$			40	μA
		$V_{CC} = 5.25V$,	$V_{in} = 5.5V$			1	mA
$I_{in(1)}$	Logical 1 level input current at A	$V_{CC} = 5.25V$,	$V_{in} = 2.4V$			80	μA
		$V_{CC} = 5.25V$,	$V_{in} = 5.5V$			1	mA
$I_{in(0)}$	Logical 0 level input current at B, C, or D	$V_{CC} = 5.25V$,	$V_{in} = 0.4V$			–1.6	mA
$I_{in(0)}$	Logical 0 level input current at A	$V_{CC} = 5.25V$,	$V_{in} = 0.4V$			–3.2	mA
I_{CC}	Supply current	$V_{CC} = 5.25V$			21	42	mA

* All typical values are at $V_{CC} = 5V$, $T_A = 25°C$.

*Trademark Burroughs Corporation.