

August 1997

BCD to Seven Segment Decoder/Driver

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)

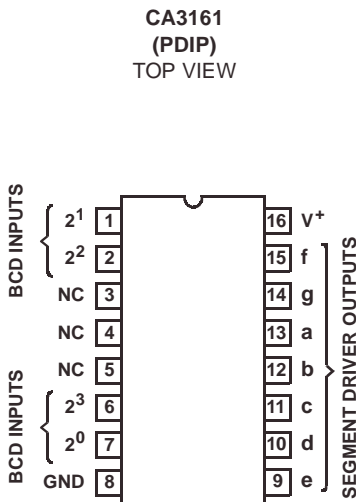
Description

The CA3161E is a monolithic integrated circuit that performs the BCD to seven segment decoding function and features constant current segment drivers. When used with the CA3162E A/D Converter the CA3161E provides a complete digital readout system with a minimum number of external parts.

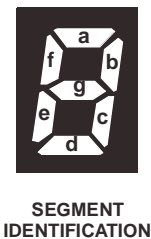
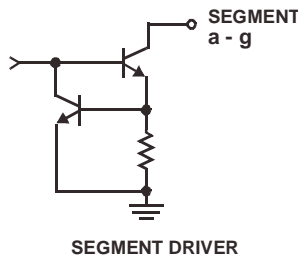
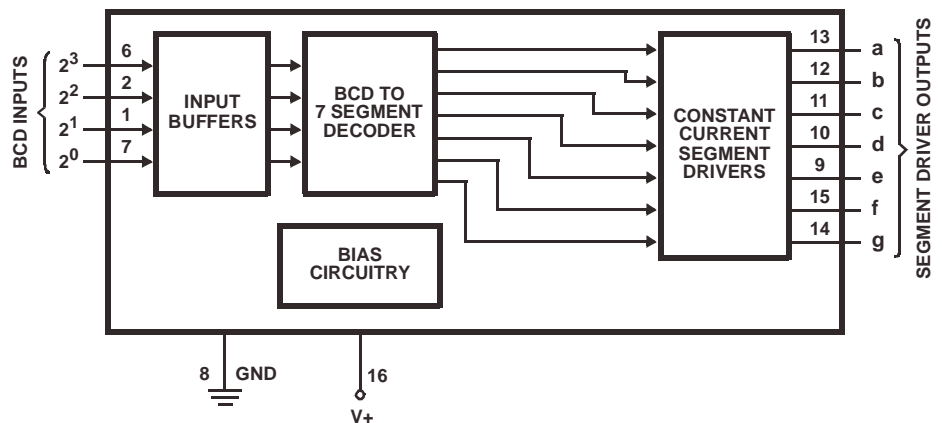
Ordering Information

PART NUMBER	TEMP. RANGE (°C)	PACKAGE	PKG. NO.
CA3161E	0 to 70	16 Ld PDIP	E16.3

Pinout



Functional Block Diagram



CA3161

Absolute Maximum Ratings

DC V_{SUPPLY} (Between Terminals 1 and 10)	+7.0V
Input Voltage (Terminals 1, 2, 6, 7)	+5.5V
Output Voltage	
Output "Off"	+7V
Output "On" (Note 1)	+10V

Thermal Information

Thermal Resistance (Typical, Note 2)	θ_{JA} (°C/W)
PDIP Package	100
Maximum Junction Temperature	150°C
Maximum Storage Temperature Range	-65°C to 150°C
Maximum Lead Temperature (Soldering 10s)	300°C

Operating Conditions

Temperature Range 0°C to 75°C

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress only rating and operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied.

NOTES:

1. This is the maximum output voltage for any single output. The output voltage must be consistent with the maximum dissipation and derating curve for worst case conditions. Example: All segments "ON", 100% duty cycle.
2. θ_{JA} is measured with the component mounted on an evaluation PC board in free air.

Electrical Specifications $T_A = 25^\circ\text{C}$

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
V_{SUPPLY} Operating Range, V^+		4.5	5	5.5	V
Supply Current, I^+ (All Inputs High)		-	3.5	8	mA
Output Current Low ($V_O = 2V$)		18	25	32	mA
Output Current High ($V_O = 5.5V$)		-	-	250	μA
Input Voltage High (Logic "1" Level)		2	-	-	V
Input Voltage Low (Logic "0" Level)		-	-	0.8	V
Input Current High (Logic "1")	2V	-30	-	-	μA
Input Current Low (Logic "0")	0V	-40	-	-	μA
Propagation Delay Time,	t_{PHL}	-	2.6	-	μs
	t_{PLH}	-	1.4	-	μs

CA3161

TRUTH TABLE

BINARY STATE	INPUTS				OUTPUTS							DISPLAY	
	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	L	H	L	2
3	L	L	H	H	L	L	L	L	H	H	H	L	3
4	L	H	L	L	H	L	L	H	H	L	L	L	4
5	L	H	L	H	L	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	L	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	L	L	L	L	H	L	L	L	9
10	H	L	H	L	H	H	H	H	H	H	H	L	-
11	H	L	H	H	L	H	H	L	L	L	L	L	E
12	H	H	L	L	H	L	L	H	L	L	L	L	H
13	H	H	L	H	H	H	H	L	L	L	L	H	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



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.