

CA3161

BCD to Seven Segment Decoder/Driver

FN1079 Rev.3.00 Aug 1997

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 Dissipation18mW (Typ)

Ordering Information

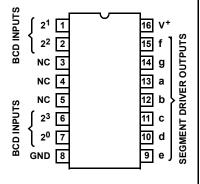
PART NUMBER	TEMP. RANGE (°C)	PACKAGE	PKG. NO.	
CA3161E	0 to 70	16 Ld PDIP	E16.3	

Description

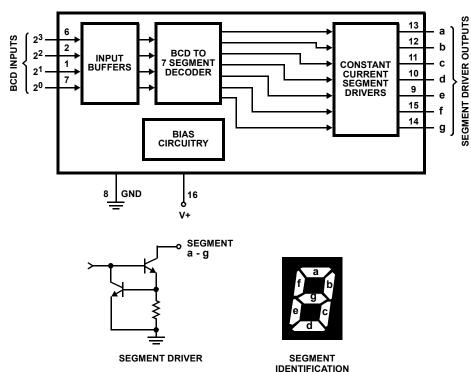
The CA3161E is a monolithic integrated circuit that performs the BCD to seven segment decoding function and features constant current segment drivers. When used with the CA3162E A/D Converter the CA3161E provides a complete digital readout system with a minimum number of external parts.

Pinout

CA3161 (PDIP) TOP VIEW



Functional Block Diagram



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	
Maximum Storage Temperature Range	65°C to 150°C
Maximum Lead Temperature (Soldering 10s)	300°C

Operating Conditions

Temperature Range0°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. $\theta_{\mbox{\scriptsize JA}}$ is measured with the component mounted on an evaluation PC board in free air.

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

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	μΑ	
Input Voltage High (Logic "1" Level		2	-	-	V	
Input Voltage Low (Logic "0" Level)		-	-	0.8	V	
Input Current High (Logic "1")		2V	-30	-	-	μΑ
Input Current Low (Logic "0")		0V	-40	-	-	μΑ
Propagation Delay Time,	pagation Delay Time, t _{PHL}		-	2.6	-	μS
	t _{PLH}		-	1.4	-	μS

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TRUTH TABLE

BINARY		INP	UTS		OUTPUTS							
STATE	23	22	21	20	а	b	С	d	е	f	g	DISPLAY
0	L	L	L	L	L	L	L	L	L	L	Н	
1	L	L	L	Н	Н	L	L	Н	Н	Н	Н	
2	L	L	Н	L	L	L	Н	L	L	Н	L	
3	L	L	Н	Н	L	L	L	L	Н	Н	L	
4	L	Н	L	L	Н	L	L	Н	Н	L	L	4
5	L	Н	L	Н	L	Н	L	L	Н	L	L	5
6		Н	Н	L	L	I	L	L	_	ا	L	
7		Н	Н	Τ	L	L	L	I	Н	Н	Τ	(
8	Н	L	L	L	L	L	L	L	L	L	L	
9	Н	L	L	Н	L	L	L	L	Н	L	L	
10	Н	L	Н	L	Н	Н	Н	Н	Н	Н	L	-
11	Н	L	Н	Н	L	H	Н	L	L	L	L	
12	Н	Н	L	L	Н	L	L	Н	L	L	L	H
13	Н	Н	L	Н	Н	Н	Н	L	L	L	Н	
14	Н	Н	Н	L	L	L	Н	Н	L	L	L	
15	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	BLANK