

August 1997

BCD to Seven Segment Decoder/Driver

Features

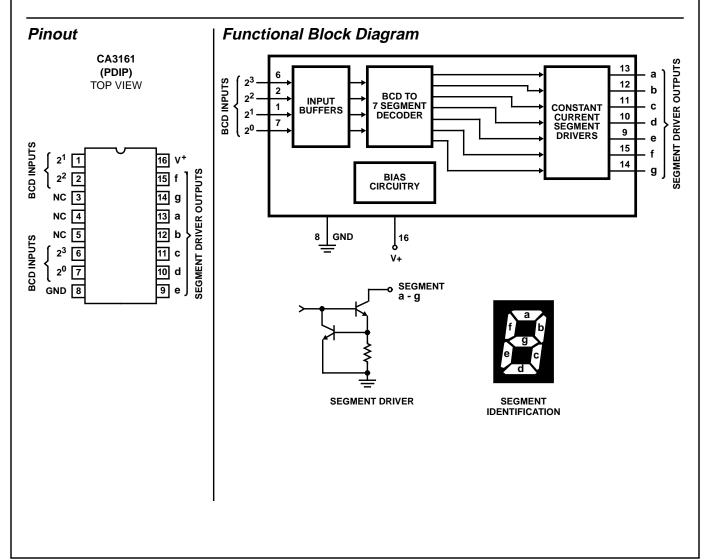
- TTL Compatible Input Logic Levels
- 25mA (Typ) Constant Current Segment Outputs
- Eliminates Need for Output Current Limiting Resistors
- Pin Compatible with Other Industry Standard Decoders
- Low Standby Power Dissipation18mW (Typ)

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.



CA3161

Absolute Maximum Ratings Thermal Information

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

Thermal Resistance (Typical, Note 2)	θ_{JA} (°C/W)
PDIP Package	100
Maximum Junction Temperature	150 ^o C
Maximum Storage Temperature Range65	5 ⁰ C to 150 ⁰ C
Maximum Lead Temperature (Soldering 10s)	300°C

Operating Conditions

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 $T_A = 25^{\circ}C$

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

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DISPLAY		f		UTPUTS		h		20	UTS 2 ¹	INP	2 ³	BINARY STATE
DISPLAT	g H	L	e L	L	L	b L	a L	L	2 '	2 ²	L	0
	Н	Н	Н	Н	L	L	Н	Н	L	L	L	1
	L	Н	L	L	Н	L	L	L	Н	L	L	2
	L	Н	Н	L	L	L	L	Н	Н	L	L	3
4	L	L	Н	Н	L	L	Η	L	L	Η	L	4
5	L	L	Н	L	L	Н	L	Н	L	Н	L	5
5	L	L	L	L	L	Н	L	L	Н	Н	L	6
7	Н	Н	Н	Н	L	L	L	Н	Н	Н	L	7
	L	L	L	L	L	L	L	L	L	L	Н	8
	L,	L	Н	L	L	L	L	Н	L	L	H	9
-	L	Н	Н	Н	Н	Н	Н	L	Н	L	Н	10
E	L	L	L	L	Н	Н	L	Н	Н	L	H	11
H	L	L	L	Н	L	L	Н	L	L	Н	H	12
1	Н	L	L	L	Н	Н	Н	Н	L	Н	Н	13
	L,	L	L	Н	Н	L	L	L	Н	Н	H	14
BLANK	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	15

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