

DS75494 Hex Digit Driver

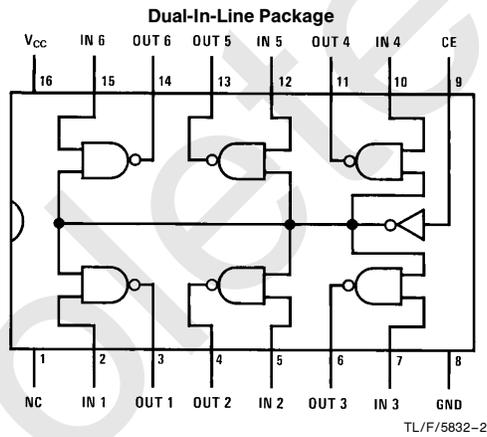
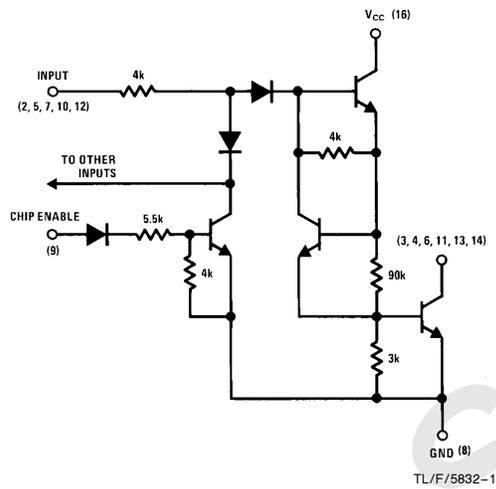
General Description

The DS75494 is a hex digit driver designed to interface between most MOS devices and common cathodes configured LED's with a low output voltage at high operating currents. The enable input disables all the outputs when taken high.

Features

- 150 mA sink capability
- Low voltage operation
- Low input current for MOS compatibility
- Low standby power
- Display blanking capability
- Low voltage saturating outputs
- Hex high gain circuits

Schematic and Connection Diagrams



Order Number DS75494N
See NS Package Number N16A

Truth Table

Enable	V _{IN}	V _{OUT}
0	0	1
0	1	0
1	X	1

X = don't care

Absolute Maximum Ratings (Note 1)

If Military/Aerospace specified devices are required, please contact the National Semiconductor Sales Office/Distributors for availability and specifications.

Supply Voltage	10V
Input Voltage	10V
Output Voltage	10V
Storage Temperature Range	-65°C to +150°C
Maximum Power Dissipation* at 25°C	
Cavity Package	1433 mW
Molded Package	1362 mW
Lead Temperature (Soldering 4 seconds)	260°C

*Derate molded package 10.9 mW/°C above 25°C.

Operating Conditions

	Min	Max	Units
Supply Voltage, V_{CC}	3.2	8.8	V
Temperature, T_A	0	+70	°C

Electrical Characteristics (Notes 2 and 3)

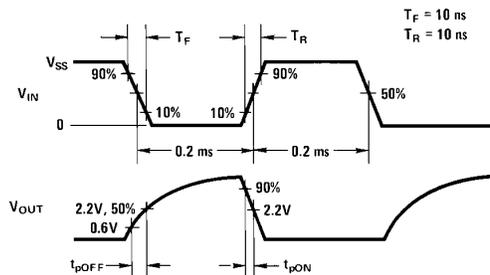
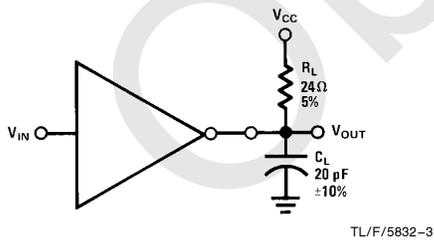
Symbol	Parameter	Conditions	Min	Typ	Max	Units	
I_{IH}	Logical "1" Input Current	$V_{CC} = \text{Min}, V_{IN} = 8.8V$			2.0	mA	
		$V_{CE} = 8.8V$ through 100k			2.7		
I_{IL}	Logical "0" Input Current	$V_{CC} = \text{Max}, V_{IN} = -5.5V$			-20	μA	
I_{OH}	Logical "1" Output Current	$V_{CC} = \text{Max}, V_{OH} = 8.8V$			400	μA	
		$V_{IN} = 8.8V$ through 100k, $V_{CE} = 0V$			400		
V_{OL}	Logical "0" Output Voltage	$V_{CC} = \text{Min}, I_{OL} = 150 \text{ mA}, V_{IN} = 6.5V$ through 1.0k,	DS75494	0.25	0.35	V	
		$V_{CE} = 8.8V$ through 100k					
I_{CC}	Supply Currents	$V_{CC} = \text{Max}$	One Driver "ON", $V_{IN} = 8.8V$	DS75474	8.0	mA	
			All Other Pins to GND	$V_{CE} = 6.5V$ through 1.0k		100	μA
				$V_{IN} = 8.8V$ through 100k		100	μA
			All Other Pins to GND			40	μA
t_{OFF}	Output "OFF" Time	$C_L = 20 \text{ pF}, R_L = 24\Omega, V_{CC} = 4.0V$, See AC Test Circuits		0.04	1.2	μs	
t_{ON}	Output "ON" Time	$C_L = 20 \text{ pF}, R_L = 24\Omega, V_{CC} = 4.0V$, See AC Test Circuits		13	100	ns	

Note 1: "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. They are not meant to imply that the devices should be operated at these limits. The table of "Electrical Characteristics" provides conditions for actual device operation.

Note 2: Unless otherwise specified min/max limits apply across the 0°C to +70°C range for the DS75494.

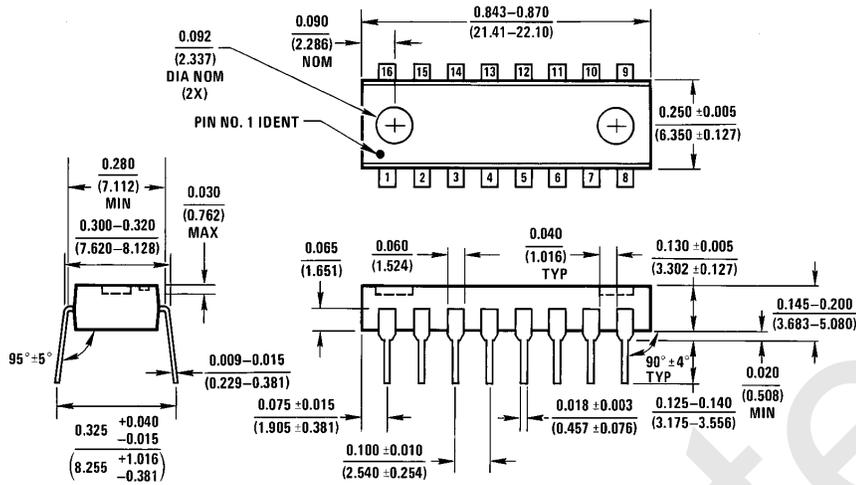
Note 3: All currents into device pins shown as positive, out of device pins as negative, all voltages referenced to ground unless otherwise noted. All values shown as max or min on absolute value basis.

AC Test Circuit and Switching Time Waveforms



Obsolete

Physical Dimensions inches (millimeters)



Molded Dual-In-Line Package (N)
Order Number DS75494N
NS Package Number N16A

N16A (REV E)

LIFE SUPPORT POLICY

NATIONAL'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF NATIONAL SEMICONDUCTOR CORPORATION. As used herein:

- Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
- A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.



National Semiconductor Corporation
 1111 West Bardin Road
 Arlington, TX 76017
 Tel: 1(800) 272-9959
 Fax: 1(800) 737-7018

National Semiconductor Europe
 Fax: (+49) 0-180-530 85 86
 Email: cnjwge@tevm2.nsc.com
 Deutsch Tel: (+49) 0-180-530 85 85
 English Tel: (+49) 0-180-532 78 32
 Français Tel: (+49) 0-180-532 93 58
 Italiano Tel: (+49) 0-180-534 16 80

National Semiconductor Hong Kong Ltd.
 19th Floor, Straight Block,
 Ocean Centre, 5 Canton Rd.
 Tsimshatsui, Kowloon
 Hong Kong
 Tel: (852) 2737-1600
 Fax: (852) 2736-9960

National Semiconductor Japan Ltd.
 Tel: 81-043-299-2309
 Fax: 81-043-299-2408

National does not assume any responsibility for use of any circuitry described, no circuit patent licenses are implied and National reserves the right at any time without notice to change said circuitry and specifications.