



DS75494 Hex Digit Driver

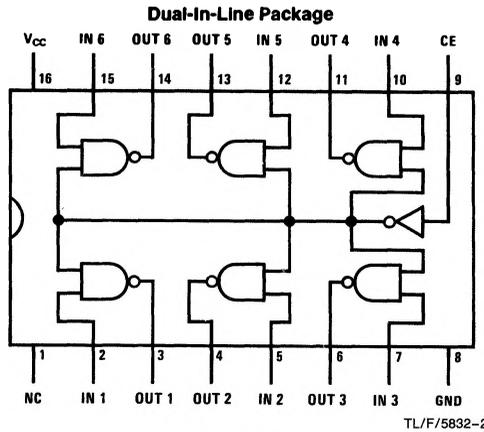
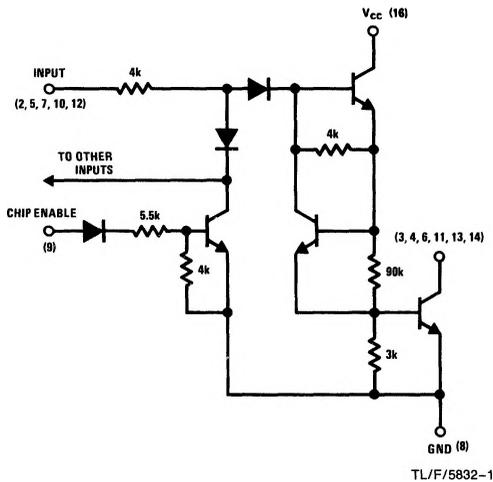
General Description

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



Top View
 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			
DS75494	0	+70	°C

Electrical Characteristics (Notes 2 and 3)

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