

TYPES SN75497, SN75498
MOS-TO-LED 7- OR 9-CHANNEL DRIVERS

BULLETIN NO. DL-S 7712490 MAY 1977

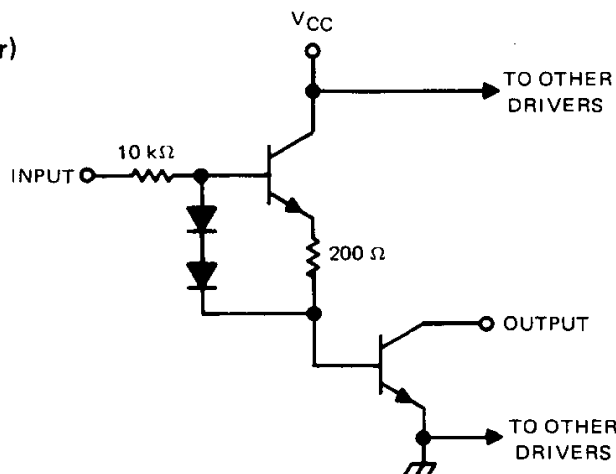
- **100-mA Output Sink Current Capability**
- **Low-Voltage Operation**
- **MOS- and TTL-Compatible Inputs**
- **Input Threshold . . . 2.7 V Max**
- **7 Drivers (SN75497) or 9 Drivers (SN75498) per Package**
- **Low-Voltage Saturating Outputs**
- **Low Standby Power**

description

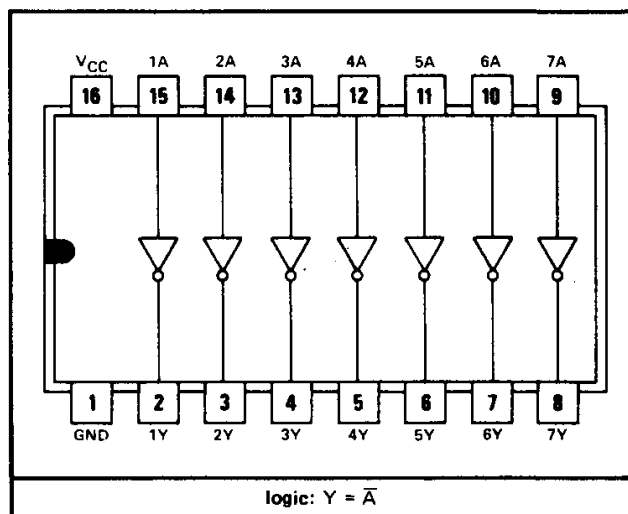
The SN75497 and SN75498 are designed to drive common-cathode LED's in serially addressed multi-digit displays used in conjunction with MOS calculator circuits. The input of each circuit is capable of interfacing with an MOS push-pull output buffer while the output is capable of sinking the output current from a strobed LED display. These drivers are also essentially compatible with TTL inputs. They have a guaranteed threshold of 2.7 volts maximum, making them ideal for two-battery calculators or other low-voltage battery systems. They are designed to be used with active-pull-down MOS devices, but can also be used with open-drain MOS outputs with the addition of pull-down resistors on each input.

The 100-mA output current capability (open collector) and low output saturation voltage makes these devices ideal for other applications such as lamp drivers, relay drivers, line drivers, high-fan-out TTL buffers, etc. The advantages over earlier digit drivers include lower operating voltage, lower output saturation voltage, lower input current, and higher input voltage range.

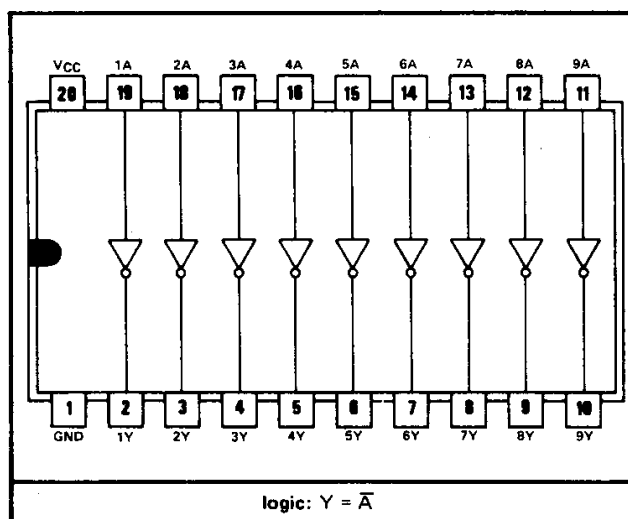
schematic (each driver)



SN75497 . . . N DUAL-IN-LINE PACKAGE
(TOP VIEW)



SN75498 . . . N DUAL-IN-LINE PACKAGE
(TOP VIEW)



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TYPES SN75497, SN75498

MOS-TO-LED 7- OR 9-CHANNEL DRIVERS

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, V_{CC} (see Note 1)	−11 V to V
Input voltage	V
Output voltage	125
Continuous output collector current	250
Ground-terminal current	500
Continuous total dissipation over entire operating range	0°C to 7
Operating free-air temperature range	−65°C to 15
Storage temperature range	26
Lead temperature 1/16 inch from case for 10 seconds	

NOTE 1: Voltage values are with respect to network ground terminal.

recommended operating conditions

	MIN	MAX	UN
Supply voltage, V_{CC}	2.7	6.6	V
High-level input voltage, V_{IH}	2.7	V_{CC}	V
Low-level input voltage, V_{IL}	−8.5	0	V
Output Current, I_O		100	mA
Operating free-air temperature, T_A	0	70	°C

electrical characteristics over recommended free-air temperature range (unless otherwise noted)

PARAMETER		TEST CONDITIONS		MIN	TYP†	MAX	UN
$I_{O(off)}$	Off-state output current	$V_{CC} = 6.6$ V, A at 0 V, Y at 6.6 V			10	100	μ
$V_{O(on)}$	On-state output voltage	$V_{CC} = 6.6$ V, A at 6.6 V thru 500 Ω, $I_O = 100$ mA			0.24	0.4	V
		$V_{CC} = 2.7$ V, A at 2.7 V thru 500 Ω	$I_O = 50$ mA		0.12	0.25	
			$I_O = 100$ mA		0.24	0.4	
I_{IH}	High-level input current	$V_{CC} = 6.6$ V, A at 6.6 V, $I_O = 100$ mA			0.6	1	mA
		$V_{CC} = 2.7$ V, A at 2.7 V, $I_O = 100$ mA				0.4	
I_{IL}	Low-level input current	$V_{CC} = 6.6$ V, A at −8.5 V, $V_O = 6.6$ V		−10	−100		μ
		$V_{CC} = 2.7$ V, A at −8.5 V, $V_O = 2.7$ V			−100		
I_{CC}	Supply current	$V_{CC} = 6.6$ V, One A input at 6.6 V, $I_O = 100$ mA, Other A inputs at 0 V			2.5	5	mA
		$V_{CC} = 6.6$ V, All inputs at 0 V				200	

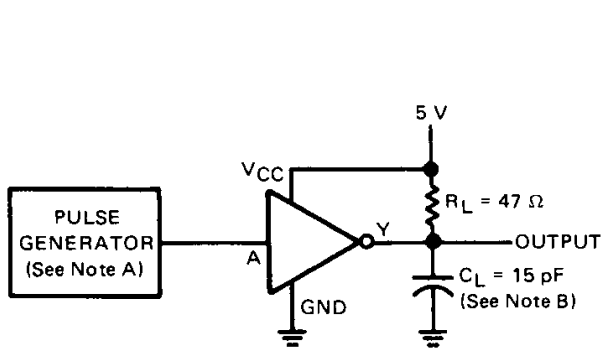
† All typical values are at $T_A = 25^\circ\text{C}$

TYPES SN75497, SN75498 MOS-TO-LED 7- OR 9-CHANNEL DRIVERS

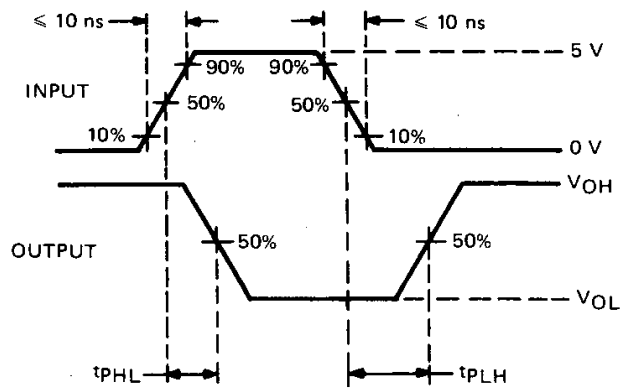
switching characteristics, $V_{CC} = 5\text{ V}$, $T_A = 25^\circ\text{C}$

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH} Propagation delay time, low-to-high level output	$C_L = 15\text{ pF}$, $R_L = 47\ \Omega$		250		ns
t_{PHL} Propagation delay time, high-to-low level output			40		ns

PARAMETER MEASUREMENT INFORMATION



TEST CIRCUITS



VOLTAGE WAVEFORMS

NOTES: A. The pulse generator has the following characteristics: $Z_{out} = 50\ \Omega$, $PRR = 100\text{ kHz}$, $t_w = 1\ \mu\text{s}$.
B. C_L includes probe and jig capacitance.

FIGURE 1—PROPAGATION DELAY TIMES

TYPICAL CHARACTERISTICS

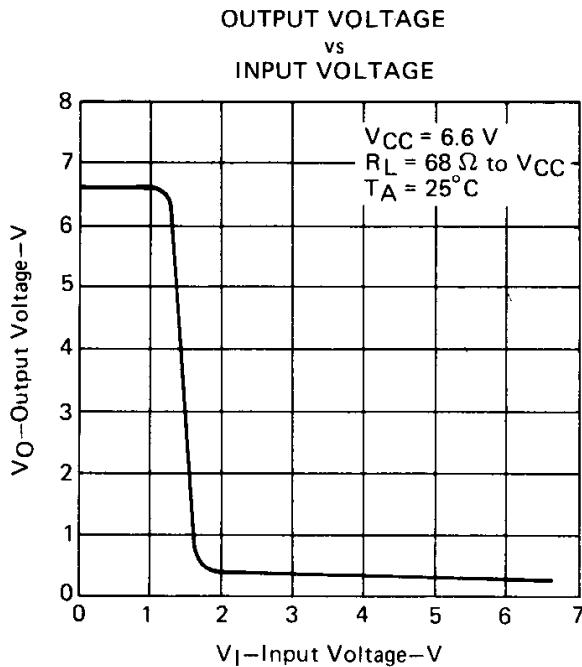


FIGURE 2

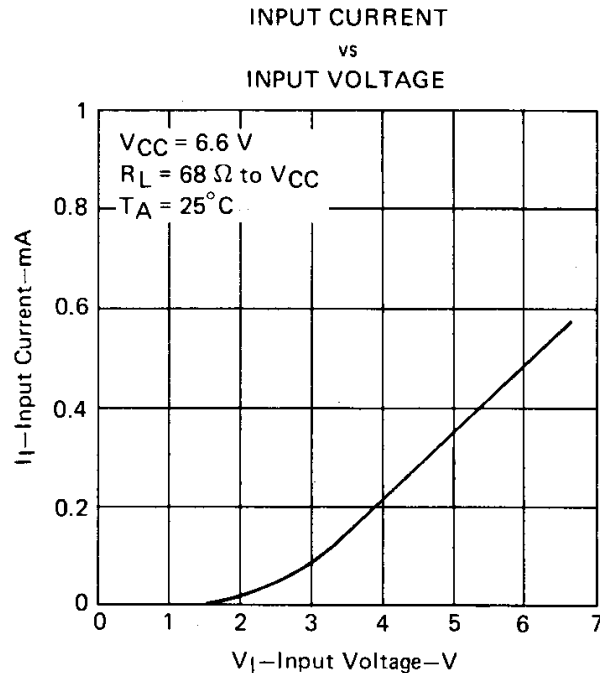


FIGURE 3

TEXAS
INSTRUMENTS

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