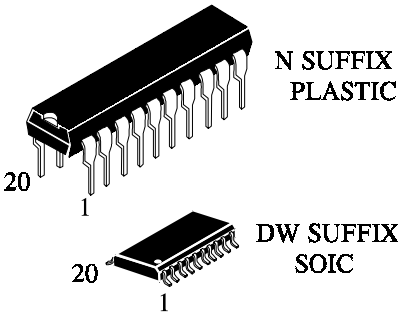
IN74ALS240A

OCTAL BUFFER / DRIVER WITH 3-STATE OUTPUTS

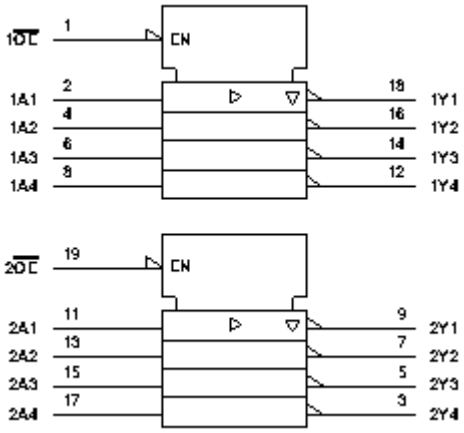


ORDERING INFORMATION
IN74LS240AN Plastic
IN74ALS240AD SOIC
T_A = 0° to 70° C for all packages

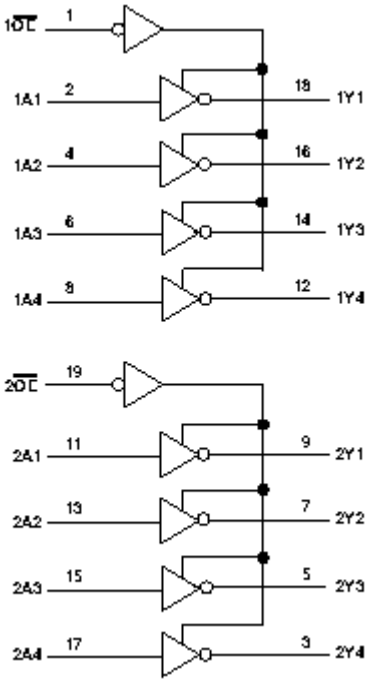
This octal buffer/driver is designed specially to improve both the performance and density of 3-state memory address drivers, clock drivers and bus-oriented receivers and transmitters. When this device is used with the 'ALS241, 'AS241A, 'ALS244 and AS244A, the circuit designer has a choice of selected combinations of inverting and noninverting outputs, symmetrical active-low output-enable (OE) inputs and complementary OE and OE inputs. This device features high fan-out and improved fan-in.

The IN74ALS240A is characterized for operation from 0^oC to 70^oC.

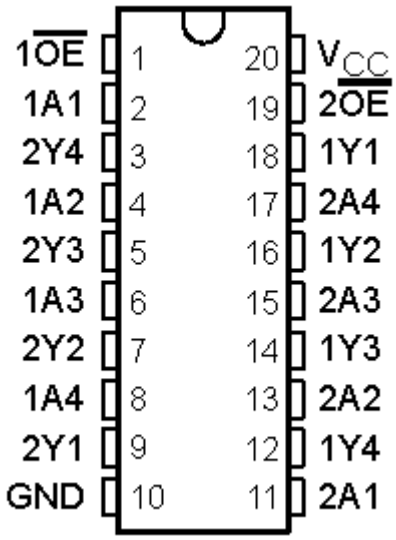
Logic Symbol



Logic Diagram (Positive Logic)



PIN ASSIGNMENT



FUNCTION TABLE

INPUTS		OUTPUT
$\overline{OE}$	**A**	**Y**
L	H	L
L	L	H
H	X	Z

ABSOLUTE MAXIMUM RATINGS
OVER OPERATING FREE-AIR TEMPERATURE RANGE

Supply voltage, Vcc	7 V
Input voltage, V_I	7 V
Voltage applied to a disabled 3-state output	5.5V
Operating free-air temperature range, T_A	0^oC to 70^oC.
Storage temperature range	-65^oC to 150^oC

RECOMMENDED OPERATING CONDITIONS

		MIN	NOM	MAX	UNIT
V_{CC}	Supply voltage	4.5	5	5.5	V
V_{IH}	High-level input voltage	2			V
V_{IL}	Low-level input voltage			0.8	V
I_{OH}	High-level output current			-15	mA
I_{OL}	Low-level output current			24	mA
T_A	Operating free-air temperature	0		70	^oC

ELECTRICAL CHARACTERISTICS OVER RECOMMENDED OPERATING FREE-AIR TEMPERATURE RANGE

Parameter	Test Conditions		MIN	TYP**	MAX	UNIT
V_{IK}	V_{CC} = 4.5V	I_I = -18mA			-1.2	V
V_{OH}	V_{CC} = 4.5V to 5.5V	I_{OH} = -0.4mA	V_{CC}-2			V
	V_{CC} = 4.5V	I_{OH} = -3mA	2.4	3.2		V
		I_{OH} = -15mA	2			
V_{OL}	V_{CC} = 4.5V	I_{OL}= 12 mA		0.25	0.4	V
		I_{OL} = 24 mA		0.35	0.5	
		I_{OL} = 48 mA*		0.35	0.5	
I_{OZH}	V_{CC} = 5.5V	V_O= 2.7V			20	µA
I_{OZL}	V_{CC} = 5.5V	V_O= 0.4V			-20	µA
I_I	V_{CC} = 5.5V	V_I = 7V			0.1	mA
I_{IH}	V_{CC} = 5.5V	V_I = 2.7V			20	µA
I_{IL}	V_{CC} = 5.5V	V_I = 0.4V			-0.1	mA
I_O***	V_{CC} = 5.5V	V_O= 2.25V	-30		-112	mA
I_{CC}	V_{CC} = 5.5V	Output high		4	11	mA
		Outputs low		13	23	
		Outputs disabled		14	25	

*- Applies only to the -1 version and only if V_{CC} is between 4.75V and 5.25V

**- All typical values are at V_{CC}=5V, T_A=25°C

***- The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current, I_{OS}

SWITCHING CHARACTERISTICS

Parameter	From (input)	To (output)	V_{CC} = 4.5 V to 5.5 V C_L = 50 pF R_1= 500 Ω R_2= 500 Ω T_A = MIN to MAX*		UNIT
			MIN	MAX	
t_{PLH}	~~A~~	Y	2	9	ns
t_{PHL}			2	9	
t_{PZH}	~~OE~~	Y	5	13	ns
t_{PZL}			5	18	
t_{PHZ}	OE	Y	2	10	ns
t_{PLZ}			3	12	

*- For conditions shown as MIN and MAX, use the appropriate value specified under recommended operating conditions