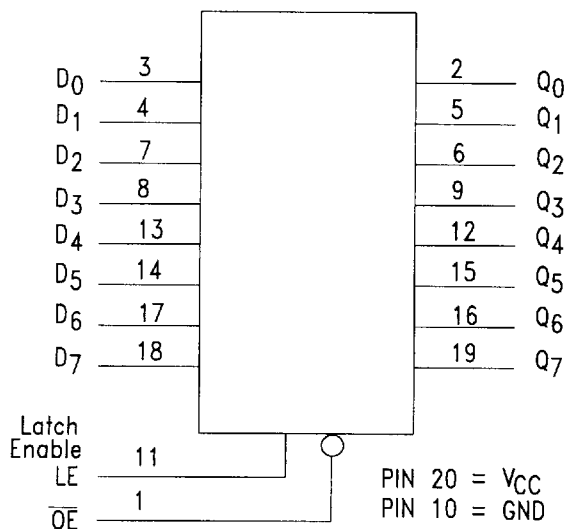


Octal D-Type 3-State Transparent Latch

The DV74LS/74ALS373 circuits consist of eight latches with 3-state outputs for bus organized system applications. The flip-flops appear transparent to the data (data changes asynchronously). The high-impedance state and increased high-logic level drive provide these registers with the capability of being connected directly to and driving the bus lines in a bus-organized system without need for interface or pull-up components. They are particularly suited for buffer registers, I/O ports, bi-directional bus drivers, and working registers.

- AVG's LS operates over extended Vcc from 4.5 to 5.5 V
- AVG's LS and ALS both have guaranteed DC and AC specification over full temperature and Vcc range
- Switching specifications for ALS at 50 pF
- AVG's ALS has the lowest speed power product (4pJ per gate typical) of all logic series



Pin Assignments:

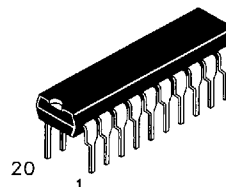
D0-D7 Data Inputs

LE Latch Enable (Active HIGH) Input

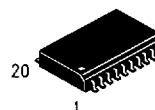
OE Output Enable (Active LOW) Input

Q0-Q7 Outputs

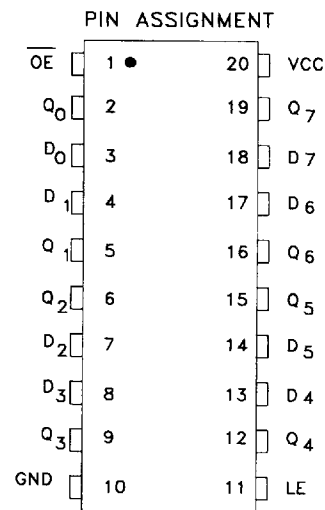
DV74LS373 DV74ALS373



P Suffix
Plastic DIP
AVG-005 Case



D Suffix
Plastic SOP
AVG-006 Case



TRUTH TABLE (Each Flip-Flop)

Inputs			Output
Output Enable	Latch Enable	D	Q
L	H	H	H
L	H	L	L
L	L	X	NC
H	X	X	Z

H=High Logic Level

L=Low Logic Level

X=Don't Care

NC=No change, data latched

Z=HIGH Impedance (Flip-Flops contents are unaffected by the state of OE)

ABSOLUTE MAXIMUM RATINGS

Maximum ratings are those values beyond which damage to the device may occur.

Symbol	Parameter	LS373	ALS373	Unit
V _{CC}	Supply Voltage	7.0	7.0	V
V _{IN}	Input Voltage	7.0	7.0	V
T _{STG}	Storage Temperature Range	-65 to +150	-65 to +150	°C
V _{OZ}	Output Voltage - High Impedance	5.5	5.5	V

GUARANTEED OPERATING CONDITIONS

Symbol	Parameter	LS373		ALS373		Unit
		Min	Max	Min	Max	
V _{CC}	Supply Voltage	4.5	5.5	4.5	5.5	V
V _{IH}	High Level Input Voltage	2.0		2.0		V
V _{IL}	Low Level Input Voltage		0.8		0.8	V
I _{OH}	High Level Output Current		-2.6		-2.6	mA
I _{OL}	Low Level Output Current		24		24	mA
T _A	Ambient Temperature Range	-10 to +70		-10 to +70		°C

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter	Condition		LS373			ALS373			Unit
				Min	Typ	Max	Min	Typ	Max	
V _{IK}	Input Clamp Voltage	V _{CC} = min, I _{IN} = -18 mA				-1.5			-1.5	V
V _{OH}	High Level Output Voltage	V _{CC} = min, I _{OH} = max		2.4	3.1		2.4	3.2		V
V _{OL}	Low Level Output Voltage	V _{CC} =min	I _{OL} = 12 mA		0.25	0.4		0.25	0.4	V
			I _{OL} = 24 mA		0.35	0.5		0.35	0.5	V
I _{IH}	High Level Input Current	V _{CC} =max, V _{IN} = 2.7V				20			20	μA
		V _{CC} =max, V _{IN} = 7V				0.1			0.1	mA
I _{IL}	Low Level Input Current	V _{CC} =max, V _{IN} =0.4V				-0.4			-0.1	mA
I _O	Output Short Circuit Current	V _O - 2.25 V		-30		-130	-30		-112	mA
I _{OZH}	High Level 3-State Output Current	V _{CC} =max, V _{OUT} - 2.7V				20			20	μA
I _{OZL}	Low Level 3-State Output Current	V _{CC} =max, V _{OUT} - 0.4V				-20			-20	μA
I _{CC}	Supply Current	V _{CC} =max				40		12	27	mA

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	INPUT	OUTPUT	LS373 CL=45 pF, RL=667 Ω		ALS373 CL=50 pF, R1=R2=500 Ω		Unit
				Min	Max	Min	Max	
f _{MAX}	Maximum Clock Frequency			35		35		MHz
t _{PLH}	Propagation Delay Time Low-to-High Level Output	Data	Any Q		28	2	12	ns
t _{PHL}	Propagation Delay Time High-to-Low Level Output	Data	Any Q		28	4	18	ns

SWITCHING CHARACTERISTICS (continued)

Symbol	Parameter	INPUT	OUTPUT	LS373 CL=45 pF, RL=667 Ω		ALS373 CL=50 pF, R1=R2=500 Ω		Unit
				Min	Max	Min	Max	
t _{PZH}	Output Enable Time to High Level Output	OE	Any Q		28	6	18	ns
t _{PZL}	Output Enable Time to Low Level Output	OE	Any Q		36	5	20	ns
t _{PHZ}	Output Disable Time from High Level Output	OE	Any Q		20	2	10	ns
t _{PLZ}	Output Disable Time from Low Level Output (C _L =5 pF)	OE	Any Q		25	2	12	ns

SWITCHING WAVEFORMS

AC SETUP REQUIREMENTS over full operating conditions

Symbol	Parameter	LS373		ALS 373		Unit
		MIN	MAX	MIN	MAX	
t _w	Enable Width	15		10		ns
t _s	Setup Time	5		10		ns
t _h	Hold Time	20		7		ns

