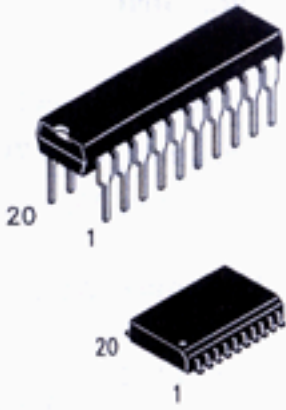


Octal D-Type Edge-Triggered Flip-Flops with Clear

These positive-edge-triggered flip-flops utilize TTL circuitry to implement D-type flip-flop logic with a master reset input.

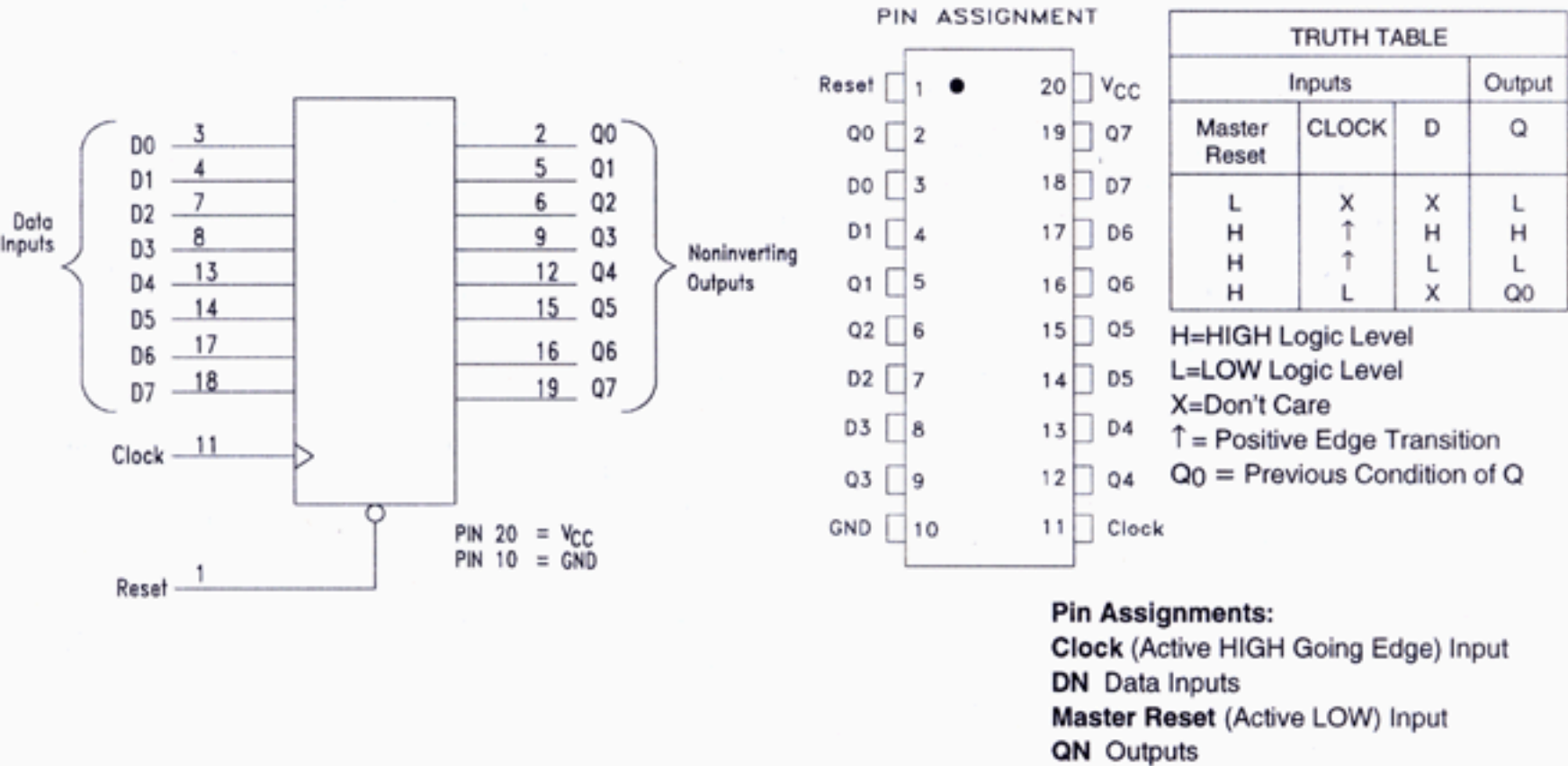
- AVG's LS operates over extended Vcc from 4.5 to 5.5 V
- AVG's LS and ALS both have guaranteed DC and AC specification over full temperature and Vcc range
- Switching specifications for ALS at 50 pF
- AVG's ALS has the lowest speed power product (4pJ per gate typical) of all logic series

DV74LS273 DV74ALS273



N Suffix
Plastic DIP
AVG-005 Case

D Suffix
Plastic SOP
AVG-006 Case



ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter	LS273	ALS273	Unit
V _{CC}	Supply Voltage	+7.0	7.0	V
V _{IN}	Input Voltage	0.5 - 7.0	7.0	V
T _{STG}	Storage Temperature Range	-65 to +150	-65 to +150	°C

GUARANTEED OPERATING CONDITIONS

Symbol	Parameter	LS273		ALS273		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		V
V _{IL}	Low Level Input Voltage		0.8		0.8	V
I _{OH}	High Level Output Current		-0.4		-2.6	mA
I _{OL}	Low Level Output Current		8.0		24	mA
T _A	Operating Free Air Temperature Range	-10 to + 70		-10 to +70		°C

DC ELECTRICAL CHARACTERISTICS over full operating conditions

Symbol	Parameter	Condition	LS273			ALS273			Unit
			Min	Typ	Max	Min	Typ	Max	
V_{IK}	Input Clamp Voltage	$V_{CC} = \text{min}, I_{IN} = -18 \text{ mA}$			-1.5			-1.5	V
V_{OH}	High Level Output Voltage	$V_{CC} = \text{min}, I_{OH} = \text{max}$	$V_{CC}-2$	3.5		$V_{CC}-2$			V
V_{OL}	Low Level Output Voltage	$V_{CC} = \text{min}, I_{OL} = \text{MAX}$		0.25	0.4		0.25	0.4	V
		$I_{OL} = \text{MAX}$		0.35	0.5		0.35	0.5	V
I_{IH}	High Level Input Current	$V_{CC} = \text{max}, V_{IN} = 2.7 \text{ V}$			20			20	μA
		$V_{CC} = \text{max}, V_{IN} = 7 \text{ V}$			0.1			0.1	mA
I_{IL}	Low Level Input Current	$V_{CC} = \text{max}, V_{IN} = 0.4 \text{ V}$			-0.4			-0.2	mA
I_O	Output Short Circuit Current	$V_{CC} = \text{max}, V_O = 2.25 \text{ V}$	-20		-110	-30		-112	mA
I_{CC}	Supply Current	$V_{CC} = \text{max}$ Output High Output LOW					11	20	mA
					27		19	29	mA

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	INPUT	OUTPUT	LS273 $C_L = 15 \text{ pF}, R_L = 2 \text{ K}\Omega$		ALS273 $C_L = 50 \text{ pF}, R_L = 500 \text{ W}$		Unit
				Min	Max	Min	Max	
f_{MAX}	Maximum Clock Frequency			30		35		MHz
t_{PHL}	Propagation Delay Time High to Low Level Output	Master Reset	Any Q		27	4	18	ns
t_{PLH}	Propagation Delay Time Low to High Level Output	Clock	Any Q		27	2	12	ns
t_{PHL}	Propagation Delay Time High-to-Low Level Output	Clock	Any Q		27	3	15	ns

AC SETUP REQUIREMENTS over full operating conditions

Symbol	Parameter	Limits				Unit
		LS273		ALS 273		
		MIN	MAX	MIN	MAX	
t _w	Clock or Reset Pulse Width	20		14		ns
t _s	Setup Time	20		10		ns
t _h	Hold Time	5.0		0		ns
t _{rec}	Recovery Time	25		15		ns

SWITCHING WAVEFORMS

