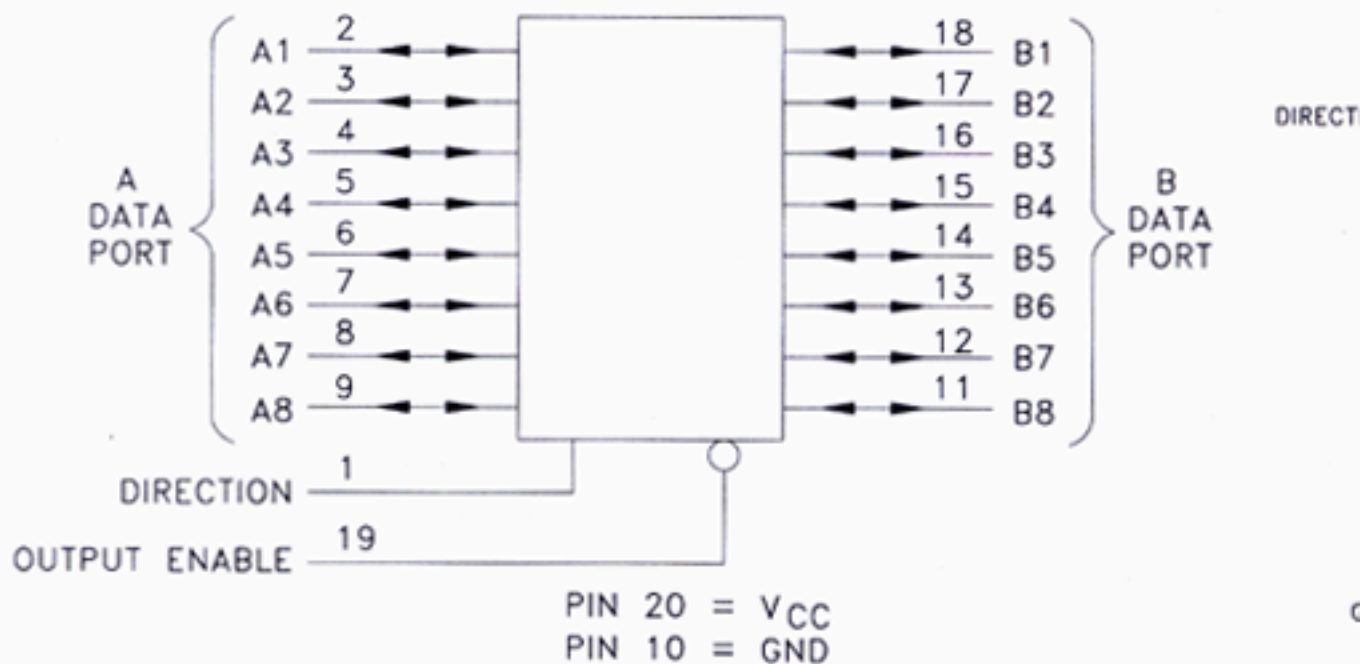


- AVG's LS operates over extended Vcc from 4.5 to 5.5 V
- AVG's LS and ALS both have guaranteed DC and AC specification over full temperature and Vcc range
- Switching specifications for ALS at 50 pF
- AVG's ALS has the lowest speed power product (4pJ per gate typical) of all logic series



'640 Function Table		
Control Inputs		Operation
Output Enable	Direction	
L	L	\bar{B} Data to A Bus
L	H	A Data to B Bus
H	X	High Impedance

L=Low State
H=High State
X=Don't Care

'643 Function Table		
Control Inputs		Operation
Output Enable	Direction	
L	L	\bar{B} Data to A Bus
L	H	A Data to B Bus
H	X	High Impedance

ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter	LS640, ALS640A, LS643
V _{CC}	Supply Voltage	+7.0
V _{IN}	Input Voltage, Control Inputs I/O Ports	-0.5 to +7.0 5.5
V _{OUT}	Voltage Applied to Disabled Output	5.5
T _{STG}	Storage Temperature Range	-65 to 150

V_{OL}	Low Level Output Voltage	$I_{OL}=12\text{mA}$		0.25	0.4
I_{IN}	Input Current	I/O Ports, $V_{IN}=5.5\text{V}$ Control Inputs, $V_{IN}=7.0\text{V}$			0.1 0.1
I_{IH}	High Level Input Current	$V_{CC}=5.5$, $V_{IN}=2.7\text{V}$; I/O Ports and Control Inputs			20
I_{IL}	Low Level Input Current	$V_{CC}=5.5$, $V_{IN}=0.4\text{V}$, I/O Ports and Control Inputs			-0.4
I_O	Output Short Circuit Current	$V_{CC}=5.5\text{V}$, $V_O = 2.25\text{V}$	-40		-225 -30
I_{CC}	Supply Current	$V_{CC}=5.5\text{V}$ (Outputs Disabled)			95

SWITCHING CHARACTERISTICS over full operating conditions

Symbol	Parameter	LS640, LS643 $C_L = 45\text{p}$ $R_1=667\Omega$		ALS640 $C_L = 50\text{p}$ $R_1=500\Omega$
		Min	Max	Min
t_{PLH} t_{PHL}	Propagation Delay Time, From A or B to B or A		10 15	2 2
t_{PZH} t_{PZL}	Output Enable Time, From OE, DIR to A; or OE, DIR to B		40 40	31 26
t_{PLZ} t_{PHZ}	Output Disable Time From OE, DIR to A; or OE, DIR to B		25 25	15 15

SWITCHING WAVEFORMS

