



## Recommended Operating Conditions

SYMBOL	PARAMETER		MIN	NOM	MAX	UNIT
V <sub>CC</sub>	Supply voltage	54	4.5	5	5.5	V
		74	4.75	5	5.25	
I <sub>OH</sub>	High-level output current	54			-12	mA
		74			-15	
I <sub>OL</sub>	Low-level output current	54			12	mA
		74			24	
T <sub>A</sub>	Operating free-air temperature	54	-55		125	°C
		74	0		70	

## Electrical Characteristics over recommended operating free-air temperature range (unless otherwise noted)

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP (Note 1)	MAX	UNIT	
V <sub>IH</sub>	High-level input voltage		2			V	
V <sub>IL</sub>	Low-level input voltage		54		0.7	V	
			74		0.8		
V <sub>IK</sub>	Input clamp voltage	V <sub>CC</sub> =Min, I <sub>I</sub> =-18mA			-1.5	V	
V <sub>T+</sub> -V <sub>T-</sub>	Hysteresis	V <sub>CC</sub> =Min,	0.2	0.4		V	
V <sub>OH</sub>	High-level output voltage	V <sub>CC</sub> =Min, V <sub>IH</sub> =Min V <sub>IL</sub> =Max, I <sub>OH</sub> =-1mA	74	2.7		V	
		V <sub>CC</sub> =Min, V <sub>IH</sub> =Min V <sub>IL</sub> =Max, I <sub>OH</sub> =-3mA	54,74	2.4	3.4		
		V <sub>CC</sub> =Min, V <sub>IH</sub> =Min V <sub>IL</sub> =0.5V, I <sub>OH</sub> =Max	54,74	2			
V <sub>OL</sub>	Low-level output voltage	V <sub>CC</sub> =Min V <sub>IL</sub> =Max V <sub>IH</sub> =Min	I <sub>OL</sub> =12mA	54, 74	0.25	0.4	V
			I <sub>OL</sub> =24mA	74	0.35	0.5	
I <sub>OZH</sub>	Off-state output current high-level voltage applied	V <sub>CC</sub> =Max, V <sub>O</sub> =2.7V V <sub>IH</sub> =Min, V <sub>IL</sub> =Max	G̅ at 2V		20	μA	
I <sub>OZL</sub>	Off-state output current low-level voltage applied	V <sub>CC</sub> =Max, V <sub>O</sub> =0.4V V <sub>IH</sub> =Min, V <sub>IL</sub> =Max	G̅ at 2V		-200	μA	
I <sub>I</sub>	Input current at maximum maximum input voltage	A or B DIR or G̅	V <sub>CC</sub> =Max	V <sub>I</sub> =55V V <sub>I</sub> =7V	0.1	mA	
I <sub>IH</sub>	High-level input current	V <sub>CC</sub> =Max, V <sub>I</sub> =2.7V			20	μA	
I <sub>IL</sub>	Low-level input current	V <sub>CC</sub> =Max, V <sub>I</sub> =0.4V			-0.2	mA	
I <sub>OS</sub>	Short-circuit output current	V <sub>CC</sub> =Max (Note 2)			-40	-225	mA
I <sub>CC</sub>	Supply Current	Outputs high			48	70	mA
		Outputs low	V <sub>CC</sub> =5.25V, Outputs open		62	90	
		All outputs disabled			64	95	

Note 1. All typical values are at V<sub>CC</sub>=5V, T<sub>A</sub>=25°C

Note 2. Not more than one output should be shorted at a time, and duration of the short-circuit should not exceed one second

## Switching Characteristics, $V_{CC} = 5V$ , $T_A = 25^\circ C$

SYMBOL	PARAMETER	TEST CONDITION#	MIN	TYP	MAX	UNIT
$t_{PLH}$	Propagation delay time, low-to-high-level output	$C_L = 45pF, R_L = 667\Omega$	8	12		ns
$t_{PHL}$	Propagation delay time, high-to-low-level output		8	12		ns
$t_{PZL}$	Output enable time to low level		27	40		ns
$t_{PZH}$	Output enable time to high level		25	40		ns
$t_{PLZ}$	Output disable time from low level	$C_L = 5pF, R_L = 667\Omega$	15	25		ns
$t_{PHZ}$	Output disable time from high level		15	25		ns

# For load circuit and voltage waveforms see page 3-11