

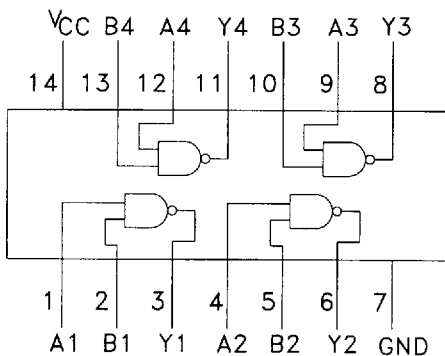
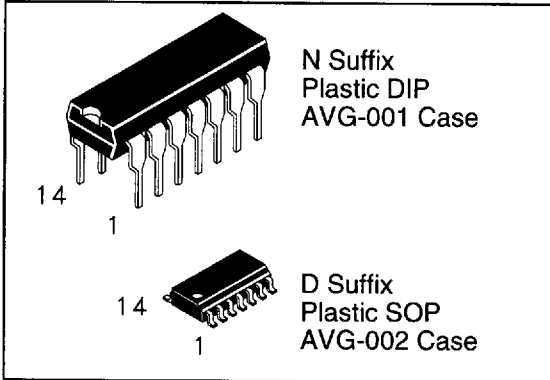
Available Q3, 1995

Quad 2-Input NAND Schmitt Trigger

This inverter contains four 2-input NAND gates, capable of transforming slowly changing inputs to sharp edged, jitter free outputs.

- Advanced very high speed CMOS
- Outputs source/sink 24 mA
- Transmission line driving 50 ohms
- ACT has TTL compatible inputs
- AC device operation guaranteed from 2 to 6 volts
- DC & AC Parameters guaranteed over -40 to +85°C

DV74AC132
DV74ACT132



Inputs		Output
A	B	\bar{Y}
L	L	H
L	H	H
H	L	H
H	H	L

H=High Level Logic
L=Low Level Logic

ABSOLUTE MAXIMUM RATINGS

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

Symbol	Parameter	AC132, ACT132	Unit
V _{CC}	DC Supply Voltage (Referenced to GND)	- 0.5 to +7.0	V
V _{IN}	DC Input Voltage (Referenced to GND)	- 0.5 to V _{CC} +0.5	V
V _{OUT}	DC Output Voltage (Referenced to GND)	- 0.5 to V _{CC} +0.5	V
I _{IN}	DC Input Current, per Pin	± 20	mA
I _{OUT}	DC Output Sink/Source Current, per Pin	± 50	mA
I _{CC}	DC V _{CC} or GND Current per Output Pin	± 50	mA
T _{stg}	Storage Temperature	- 65 to +150	°C

GUARANTEED OPERATING CONDITIONS

Symbol	Parameter	Min	Typ	Max	Unit	
V _{CC}	Supply Voltage	'AC	2.0	5.0	6.0	V
		'ACT	4.5	5.0	5.5	
V _{IN} , V _{OUT}	DC Input Voltage, Output Voltage, (Ref. to GND)	0		V _{CC}	V	
T _A	Operating Ambient Temperature Range	-40	25	85	°C	
C _{IN}	Input Capacitance		4.5		pF	
C _{PD}	Power Dissipation Capacitance		30		pF	

1. V_{IN} from 30% to 70% V_{CC}
2. V_{IN} from 0.8 to 2.0 V

132

DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V _{CC} (V)	AC132			Unit
				T _A = +25°C		T _A = -40 to +85°C	
				Typ	Guaranteed Limits		
V _{T+}	Maximum Positive Threshold		3.0	2.2			V
			4.5	3.2			
			5.5	3.9			
V _{T-}	Minimum Negative Threshold		3.0	0.5			V
			4.5	0.9			
			5.5	1.1			
V _H	Minimum Input Hysteresis		3.0	0.3			V
			4.5	0.4			
			5.5	0.5			
V _{OH}	Minimum High Level Output Voltage	I _{OUT} = -50 μA	3.0	2.99	2.9	2.9	V
			4.5	4.49	4.4	4.4	
			5.5	5.49	5.4	5.4	
	I _{OH}	V _{IN} = V _{IL} or V _{IH} -12mA -24mA -24mA	3.0		2.56	2.46	V
			4.5		3.86	3.76	
			5.5		4.86	4.76	
V _{OL}	Maximum Low Level Output Voltage	I _{OUT} = 50 μA	3.0	0.002	0.1	0.1	V
			4.5	0.001	0.1	0.1	
			5.5	0.001	0.1	0.1	
	I _{OL}	V _{IN} = V _{IL} or V _{IH} 12mA 24mA 24mA	3.0		0.36	0.44	V
			4.5		0.36	0.44	
			5.5		0.36	0.44	
I _{IN}	Maximum Input Leakage Current	V _{IN} = V _{CC} or GND	5.5		±0.1	±1.0	μA
I _{CC}	Maximum Quiescent Supply Current	V _{IN} = V _{CC} or GND	5.5		4.0	40	μA

AC CHARACTERISTICS

Symbol	Parameter	V _{CC} ±10% (V)	AC132				Unit
			T _A = +25°C C _L = 50 pF		T _A = -40°C to +85°C C _L = 50 pF		
			Min	Max	Min	Max	
t _{PLH}	Propogation Delay	3.3 5.0	2.0	13.0	1.5	14.0	ns
			2.0	9.0	1.5	11.0	
t _{PHL}	Propogation Delay	3.3 5.0	2.0	13.5	1.5	15.0	ns
			2.0	9.0	1.5	10.0	

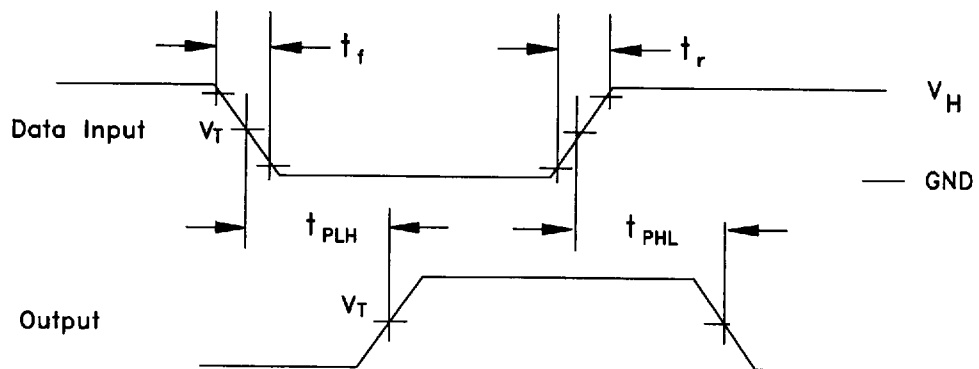
DC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Conditions	V _{CC} (V)	ACT132			Unit
				T _A = +25°C		T _A = -40 to +85°C	
				Typ	Guaranteed Limits		
V _{T+}	Maximum Positive Threshold		4.5	2.0			V
V _{T-}	Minimum Negative Threshold		4.5	0.8			V
V _H	Minimum Input hysteresis		4.5	0.4			V
V _{OH}	Minimum High Level Output Voltage	I _{OUT} = -50 μA	4.5 5.5	4.49 5.49	4.4 5.4	4.4 5.4	V
		V _{IN} = V _{IL} or V _{IH} I _{OH} = -24mA -24 mA	4.5 5.5		3.86 4.86	3.76 4.76	V
V _{OL}	Maximum Low Level Output Voltage	I _{OUT} = 50 μA	4.5 5.5	0.001 0.001	0.1 0.1	0.1 0.1	V
		V _{IN} = V _{IL} or V _{IH} I _{OL} = 24mA 24 mA	4.5 5.5		0.36 0.36	0.44 0.44	V
I _{IN}	Maximum Input Leakage Current	V _{IN} = V _{CC} or GND	5.5		±0.1	±1.0	μA
ΔI _{CC}	Additional Max I _{CC} /Input	V _{IN} = V _{CC} - 2.1 V	5.5	0.6		1.5	mA
I _{CC}	Maximum Quiescent Supply Current	V _{IN} = V _{CC} or GND	5.5		4.0	40	μA

AC CHARACTERISTICS over full operating conditions

Symbol	Parameter	V _{CC} ±10% (V)	ACT132				Unit
			T _A = +25°C C _L = 50 pF		T _A = -40°C to +85°C C _L = 50 pF		
			Min	Max	Min	Max	
t _{PLH}	Propagation Delay	5.0	3.0	11.5	2.5	13.0	ns
t _{PHL}	Propagation Delay	5.0	3.0	11.0	2.5	12.5	ns

SWITCHING WAVEFORMS



Input and output threshold voltage:
V_T = 50% V_{CC} for AC; 1.5V for ACT
V_H = V_{CC} for AC, 3V for ACT