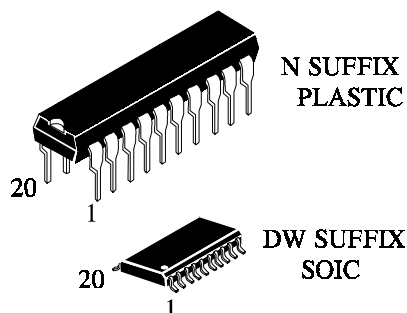


IN74ALS273

OCTAL D-TYPE FLIP-FLOP WITH CLEAR

- Contains Eight Flip-Flops with Single-Rail Outputs
- Buffered Clock and Direct Clear Inputs
- Individual Data Input to Each Flip-Flop
- Applications Include:
 - Buffer/Storage Registers
 - Shift Registers
 - Pattern Generators



DESCRIPTION

This monolithic, positive-edge-triggered flip-flop utilizes TTL circuitry to implement D-type flip-flop logic with a direct clear input.

Information at the D inputs meeting the setup time requirements is transferred to the Q outputs on the positive-going edge of the clock pulse. Clock triggering occurs at a particular voltage level and is not directly related to the transition time of the positive-going pulse. When the clock inputs is at either the high or low level, the D input signal has no effect at the output.

The IN74ALS273 is characterized for operation from 0°C to 70°C.

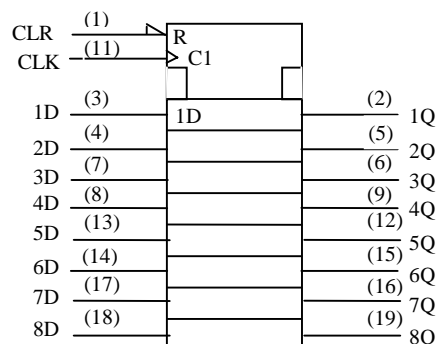
ORDERING INFORMATION

IN74ALS273N Plastic
 IN74ALS273DW SOIC
 $T_A = 0^\circ$ to 70° C for all packages

Function Table and Logic Symbol

(each flip-flop)

INPUTS			OUTPUT
CLEAR	CLOCK	D	Q
L	X	X	L
H	I	H	H
H	I	L	L
H	L	X	Q _o



ABSOLUTE MAXIMUM RATINGS OVER OPERATING FREE-AIR TEMPERATURE RANGE

Supply voltage, V _{CC}	7V
Input voltage, V _I	7V
Operating free-air temperature range, T _A	0°C to 70°C
Storage temperature range	-65°C to 150°C

RECOMMENDED OPERATING CONDITIONS

		MIN	NOM	MAX	UNIT
V _{CC}	Supply voltage	4.5	5	5.5	V
V _{IH}	High-level input voltage	2			V
V _{IL}	Low-level input voltage			0.8	V
I _{OH}	High-level output current			-2.6	mA
I _{OL}	Low-level output current			24	mA
f _{clock}	Clock frequency	0		35	MHz
t _w	Pulse duration CLR low CLK high CLK low	10			ns
		14			
		14			
t _{su}	Setup time before CLKI	Data			ns
		Clear inactive state	10		
t _{lv}	Hold time, data after CLKI	0			ns
T _A	Operating free-air temperature	0		70	°C

ELECTRICAL CHARACTERISTICS OVER RECOMMENDED OPERATING FREE-AIR TEMPERATURE RANGE

Parameter	Test Conditions		MIN	TYP**	MAX	UNIT
V _{IK}	V _{CC} = 4.5V	I _I =-18mA			-1.5	V
V _{OH}	V _{CC} = 4.5V to 5.5V	I _{OH} =-0.4mA	V _{CC} -2			V
	V _{CC} = 4.5V	I _{OH} =-2.6mA	2.4	3.2		
V _{OL}	V _{CC} = 4.5V	I _{OL} =12mA		0.25	0.4	V
		I _{OL} =24mA		0.35	0.5	V
I _I	V _{CC} = 5.5V	V _I =7V			0.1	mA
I _{IH}	V _{CC} = 5.5V	V _I =2.7V			20	µA
I _{IL}	V _{CC} = 5.5V	V _I =0.4V			-0.2	mA
I _O *	V _{CC} = 5.5V	V _O =2.25V	-30		-112	mA
I _{CCH}	V _{CC} = 5.5V			11	20	mA
I _{CCL}	V _{CC} = 5.5V			19	29	mA

*-The output conditions have been chosen to produce a current that closely approximates one half of the true short-circuit output current, I_{OS}

** -All typical values are at V_{CC}=5V, T_A=25°C

SWITCHING CHARACTERISTICS

Parameter	From (input)	To (output)	V _{CC} =4.5 V to 5.5V C _L = 50 pF R _L =500 Ω T _A =MIN to MAX		UNIT
			MIN	MAX	
f _{max}			35		MHz
t _{PHL}	CLR	Any Q	4	18	ns
t _{PLH}	CLK	Any Q	2	12	ns
t _{PHL}			3	15	