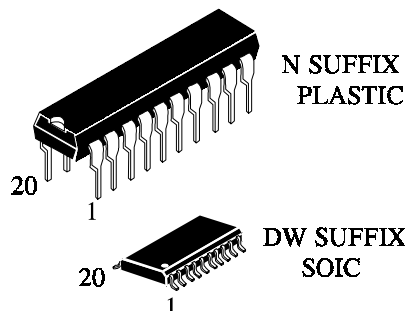


**IN74ALS273**

**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.

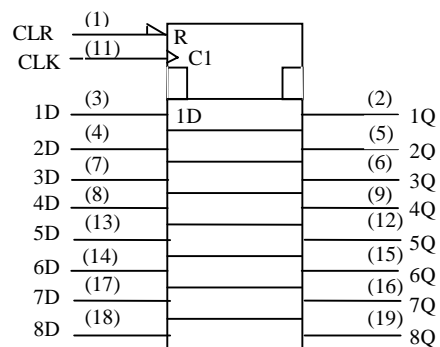
**ORDERING INFORMATION**

IN74ALS273N Plastic  
 IN74ALS273DW SOIC  
 $T_A = 0^\circ$  to  $70^\circ$  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 <sub>o</sub>



**ABSOLUTE MAXIMUM RATINGS OVER OPERATING FREE-AIR TEMPERATURE RANGE**

Supply voltage, V <sub>CC</sub>	7V
Input voltage, V <sub>I</sub>	7V
Operating free-air temperature range, T <sub>A</sub>	0°C to 70°C
Storage temperature range	-65°C to 150°C

**RECOMMENDED OPERATING CONDITIONS**

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

**ELECTRICAL CHARACTERISTICS OVER RECOMMENDED OPERATING FREE-AIR TEMPERATURE RANGE**

Parameter	Test Conditions		MIN	TYP**	MAX	UNIT
V <sub>IK</sub>	V <sub>CC</sub> = 4.5V	I <sub>I</sub> =-18mA			-1.5	V
V <sub>OH</sub>	V <sub>CC</sub> = 4.5V to 5.5V	I <sub>OH</sub> =-0.4mA	V <sub>CC</sub> -2			V
	V <sub>CC</sub> = 4.5V	I <sub>OH</sub> =-2.6mA	2.4	3.2		
V <sub>OL</sub>	V <sub>CC</sub> = 4.5V	I <sub>OL</sub> =12mA		0.25	0.4	V
		I <sub>OL</sub> =24mA		0.35	0.5	V
I <sub>I</sub>	V <sub>CC</sub> = 5.5V	V <sub>I</sub> =7V			0.1	mA
I <sub>IH</sub>	V <sub>CC</sub> = 5.5V	V <sub>I</sub> =2.7V			20	µA
I <sub>IL</sub>	V <sub>CC</sub> = 5.5V	V <sub>I</sub> =0.4V			-0.2	mA
I <sub>O</sub> *	V <sub>CC</sub> = 5.5V	V <sub>O</sub> =2.25V	-30		-112	mA
I <sub>CCH</sub>	V <sub>CC</sub> = 5.5V			11	20	mA
I <sub>CCL</sub>	V <sub>CC</sub> = 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<sub>OS</sub>

\*\* -All typical values are at V<sub>CC</sub>=5V, T<sub>A</sub>=25°C

**SWITCHING CHARACTERISTICS**

Parameter	From (input)	To (output)	$V_{CC}=4.5\text{ V to }5.5\text{V}$ $C_L = 50\text{ pF}$ $R_L=500\ \Omega$ $T_A =\text{MIN to MAX}$		UNIT
			MIN	MAX	
$f_{\text{max}}$			35		MHz
$t_{\text{PHL}}$	CLR	Any Q	4	18	ns
$t_{\text{PLH}}$	CLK	Any Q	2	12	ns
$t_{\text{PHL}}$			3	15	