



## U74LS279A

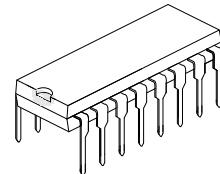
Preliminary

LINEAR INTEGRATED CIRCUIT

### QUADRUPLE $\bar{S}$ - $\bar{R}$ LATCHES

#### DESCRIPTION

The UTC **U74LS279A** offers 4 basic  $\bar{S}$ - $\bar{R}$  flip-flop latches. Under conventional operation, the  $\bar{S}$ - $\bar{R}$  inputs are normally held high. When the  $\bar{S}$  input is pulsed low, the Q output will be set high. When  $\bar{R}$  is pulsed low, the Q output will be reset low. Normally, the  $\bar{S}$ - $\bar{R}$  inputs should not be taken low simultaneously. The Q output will be unpredictable in this condition.



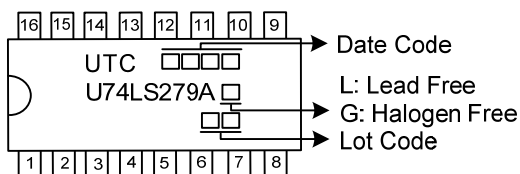
DIP-16

#### ORDERING INFORMATION

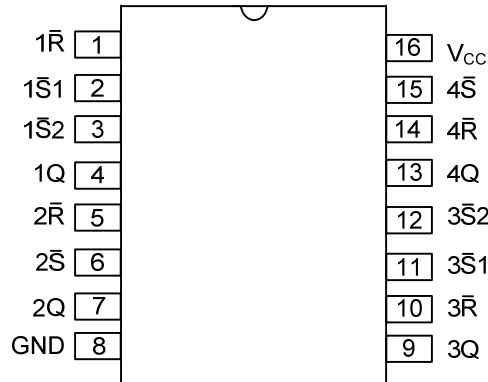
Ordering Number		Package	Packing
Lead Free	Halogen Free		
U74LS279AL-D16-T	U74LS279AG-D16-T	DIP-16	Tube

<p>U74LS279AG-D16-T</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) T: Tube (2) D16: DIP-16 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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#### MARKING



■ PIN CONFIGURATION



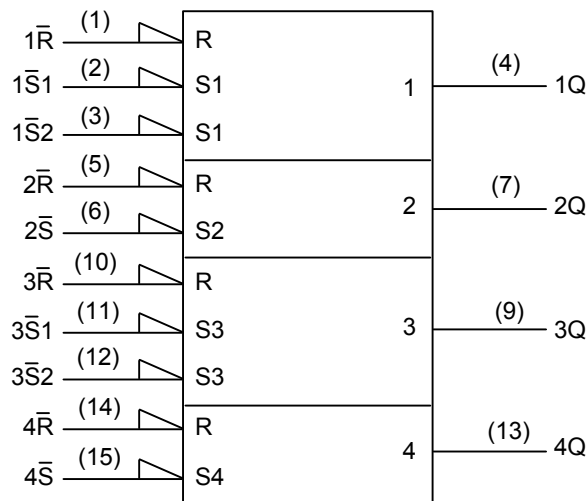
■ FUNCTION TABLE

INPUT		OUTPUT
$\bar{S}$ (Note 1)	$\bar{R}$	Q
H	H	$Q_0$
L	H	H
H	L	L
L	L	H (Note 2)

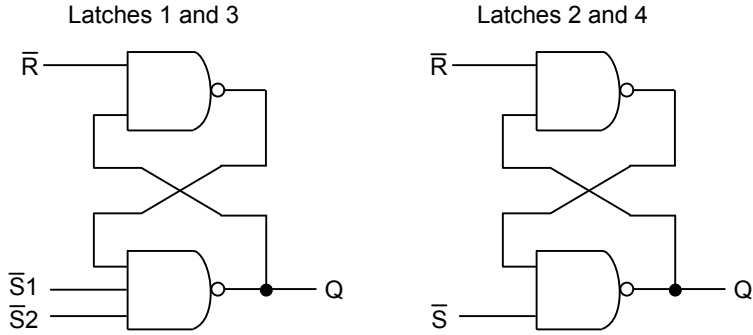
Notes: H=high level, L=low level

1. for latches with double S inputs  
 $Q_0$  = the level of Q before the indicated input conditions were established
2. The configuration is nonstable: that is, it may be persist when the  $\bar{S}$  and  $\bar{R}$  inputs return to their inactive(high) level  
 H= both  $\bar{S}$  inputs high  
 L=one or both  $\bar{S}$  inputs low

■ LOGIC SYMBOL



■ LOGIC DIAGRAM



■ ABSOLUTE MAXIMUM RATING (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sub>CC</sub>	7	V
Input Voltage	V <sub>IN</sub>	7	V
Storage Temperature	T <sub>STG</sub>	-65 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.  
 2. The input and output voltage ratings may be exceeded if the input and output current ratings are observed.

■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	CONDITIONS	MIN	TPY	MAX	UNIT
Supply Voltage	V <sub>CC</sub>		4.75	5	5.25	V
High-Level Input Voltage	V <sub>IH</sub>		2			V
Low-Level Input Voltage	V <sub>IL</sub>				0.8	V
High-Level Output Current	I <sub>OH</sub>				-0.8	mA
Low-Level Output Current	I <sub>OL</sub>				16	mA
Pulse duration, low	t <sub>w</sub>		20			ns
Operating free-air Temperature	T <sub>a</sub>		-40		+125	°C

■ ELECTRICAL CHARACTERISTICS (Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	T <sub>A</sub> =25°C			-40°C~+125°C			UNIT
			MIN	TYP	MAX	MIN	TYP	MAX	
Input Voltage	V <sub>IK</sub>	V <sub>CC</sub> = MIN, I <sub>IN</sub> =-12mA			-1.5			-1.5	V
High-Level Output Voltage	V <sub>OH</sub>	V <sub>CC</sub> = MIN, V <sub>IL</sub> =0.8V, I <sub>OH</sub> =-0.8mA	2.4	3.4		2.2		3.5	V
Low-Level Output Voltage	V <sub>OL</sub>	V <sub>CC</sub> = MIN, V <sub>IH</sub> =2V, I <sub>OL</sub> =-16mA		0.2	0.4	-0.1		0.5	V
Input Leakage Current	I <sub>I(LEAK)</sub>	V <sub>CC</sub> = MAX, V <sub>IN</sub> =5.5V			-1.5			-1.5	μA
High-level Input Leakage Current	I <sub>IH</sub>	V <sub>CC</sub> = MAX, V <sub>IN</sub> =2.4V			40			40	μA
Low-level Input Leakage Current	I <sub>IL</sub>	V <sub>CC</sub> = MAX, V <sub>IN</sub> =0.4V			-1.6			-1.6	μA
Continuous V <sub>CC</sub> or GND Current	I <sub>CC</sub>	V <sub>CC</sub> = MAX		18	30		18	30	μA

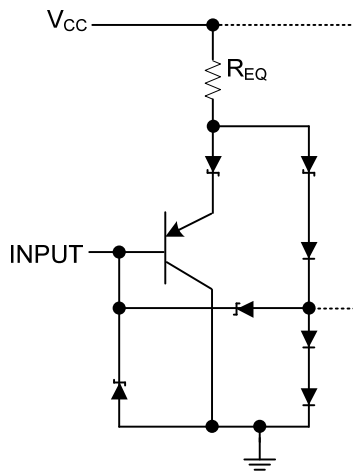
■ SWITCHING CHARACTERISTICS (Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	T <sub>A</sub> =25°C			-40°C~+125°C			UNIT	
			MIN	TYP	MAX	MIN	TYP	MAX		
Propagation delay from input (S) to output (Q)	t <sub>PHL</sub> /t <sub>PLH</sub>	V <sub>CC</sub> =5 V, C <sub>L</sub> =15pF	R <sub>L</sub> =400Ω		12	22	1		27	ns
					9	15	1		19	ns
			R <sub>L</sub> =2KΩ		12	22	1		26	ns
					13	21	1		26	ns
Propagation delay from input (R) to output (Q)	t <sub>PHL</sub>	V <sub>CC</sub> =5 V, C <sub>L</sub> =15pF	R <sub>L</sub> =400Ω		15	27	1		30	ns
			R <sub>L</sub> =2KΩ		15	27	1		30	ns

■ OPERATING CHARACTERISTICS (T<sub>A</sub>=25°C, unless otherwise specified)

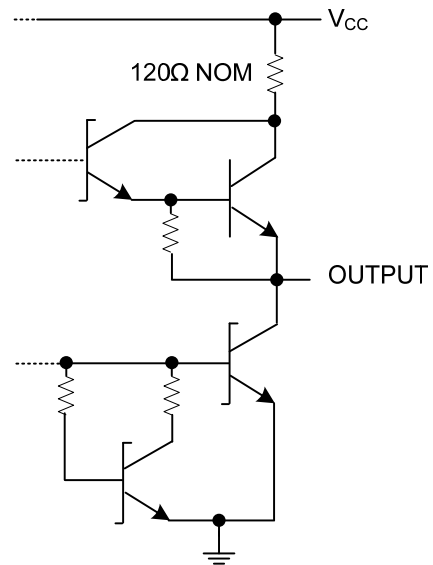
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Capacitance	C <sub>IN</sub>	V <sub>CCA</sub> = V <sub>CCB</sub> =3.3V, V <sub>IN</sub> =3.3V or GND		2.5		pF
Input/Output Capacitance	C <sub>I/O</sub>	V <sub>CCA</sub> = V <sub>CCB</sub> =3.3V, V <sub>IN</sub> =3.3V or GND		5		pF

■ TEST CIRCUIT AND WAVEFORMS



$\bar{R}$  INPUTS- $R_{EQ}=9k\Omega$  NOM  
 $\bar{S}$  INPUTS- $R_{EQ}=15k\Omega$  NOM

Equivalent of All Inputs



Typical of All Outputs

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