

DM74LS279N

Quad \bar{S} - \bar{R} Latch

The DM74LS279 consists of four individual and independent Set-Reset Latches with active low inputs. Two of the four latches have an additional \bar{S} input ANDed with the primary \bar{S} input. A LOW on any \bar{S} input while the \bar{R} input is HIGH will be stored in the latch and appear on the corresponding Q output as a HIGH. A LOW on the \bar{R} input while the \bar{S} input is HIGH will clear the Q output to a LOW. Simultaneous transition of the \bar{R} and \bar{S} inputs from LOW-to-HIGH will cause the Q output to be indeterminate. Both inputs are voltage level triggered and are not affected by transition time of the input data.

Rochester Electronics Manufactured Components

Rochester branded components are manufactured using either die/wafers purchased from the original suppliers or Rochester wafers recreated from the original IP. All re-creations are done with the approval of the Original Component Manufacturer (OCM).

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceeds the OCM data sheet.

Quality Overview

- ISO-9001
- AS9120 certification
- Qualified Manufacturers List (QML) MIL-PRF-35835
 - Class Q Military
 - Class V Space Level
- Qualified Suppliers List of Distributors (QSLD)
 - Rochester is a critical supplier to DLA and meets all industry and DLA standards.

Rochester Electronics, LLC is committed to supplying products that satisfy customer expectations for quality and are equal to those originally supplied by industry manufacturers.

The original manufacturer's datasheet accompanying this document reflects the performance and specifications of the Rochester manufactured version of this device. Rochester Electronics guarantees the performance of its semiconductor products to the original OCM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

FOR REFERENCE ONLY

DM74LS279 Quad \overline{S} -R Latch

General Description

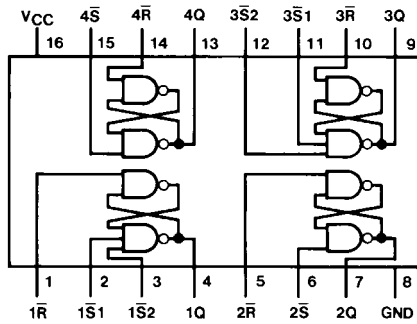
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Ordering Code:

Order Number	Package Number	Package Description
DM74LS279M	M16A	16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow
DM74LS279N	N16E	16-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide

Devices also available in Tape and Reel. Specify by appending the suffix letter "X" to the ordering code.

Connection Diagram



Function Table

Inputs		Output
\overline{S} (Note 1)	\overline{R}	Q
L	L	H (Note 2)
L	H	H
H	L	L
H	H	Q_0

H = HIGH Level

L = LOW Level

Q_0 = The Level of Q before the indicated input conditions were established.

Note 1: For latches with double \overline{S} inputs:

H = both \overline{S} inputs HIGH

L = one or both \overline{S} inputs LOW

Note 2: This output level is pseudo stable; that is, it may not persist when the \overline{S} and \overline{R} inputs return to their inactive (HIGH) level.

Absolute Maximum Ratings(Note 3)

Supply Voltage	7V
Input Voltage	7V
Operating Free Air Temperature Range	0°C to +70°C
Storage Temperature Range	-65°C to +150°C

Note 3: The "Absolute Maximum Ratings" are those values beyond which the safety of the device cannot be guaranteed. The device should not be operated at these limits. The parametric values defined in the Electrical Characteristics tables are not guaranteed at the absolute maximum ratings. The "Recommended Operating Conditions" table will define the conditions for actual device operation.

Recommended Operating Conditions

Symbol	Parameter	Min	Nom	Max	Units
V _{CC}	Supply Voltage	4.75	5	5.25	V
V _{IH}	HIGH Level Input Voltage	2			V
V _{IL}	LOW Level Input Voltage			0.8	V
I _{OH}	HIGH Level Output Current			-0.4	mA
I _{OL}	LOW Level Output Current			8	mA
T _A	Free Air Operating Temperature	0		70	°C

Electrical Characteristics

over recommended operating free air temperature range (unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ (Note 4)	Max	Units
V _I	Input Clamp Voltage	V _{CC} = Min, I _I = -18 mA			-1.5	V
V _{OH}	HIGH Level Output Voltage	V _{CC} = Min, I _{OH} = Max V _{IL} = Max, V _{IH} = Min	2.7	3.5		V
V _{OL}	LOW Level Output Voltage	V _{CC} = Min, I _{OL} = Max V _{IL} = Max, V _{IH} = Min I _{OL} = 4 mA, V _{CC} = Min		0.35 0.25	0.5 0.4	V
I _I	Input Current @ Max Input Voltage	V _{CC} = Max, V _I = 7V			0.1	mA
I _{IH}	HIGH Level Input Current	V _{CC} = Max, V _I = 2.7V			20	μA
I _{IL}	LOW Level Input Current	V _{CC} = Max, V _I = 0.4V			-0.4	mA
I _{OS}	Short Circuit Output Current	V _{CC} = Max (Note 5)	-20		-100	mA
I _{CC}	Supply Current	V _{CC} = Max (Note 6)		3.8	7	mA

Note 4: All typicals are at V_{CC} = 5V, T_A = 25°C.

Note 5: Not more than one output should be shorted at a time, and the duration should not exceed one second.

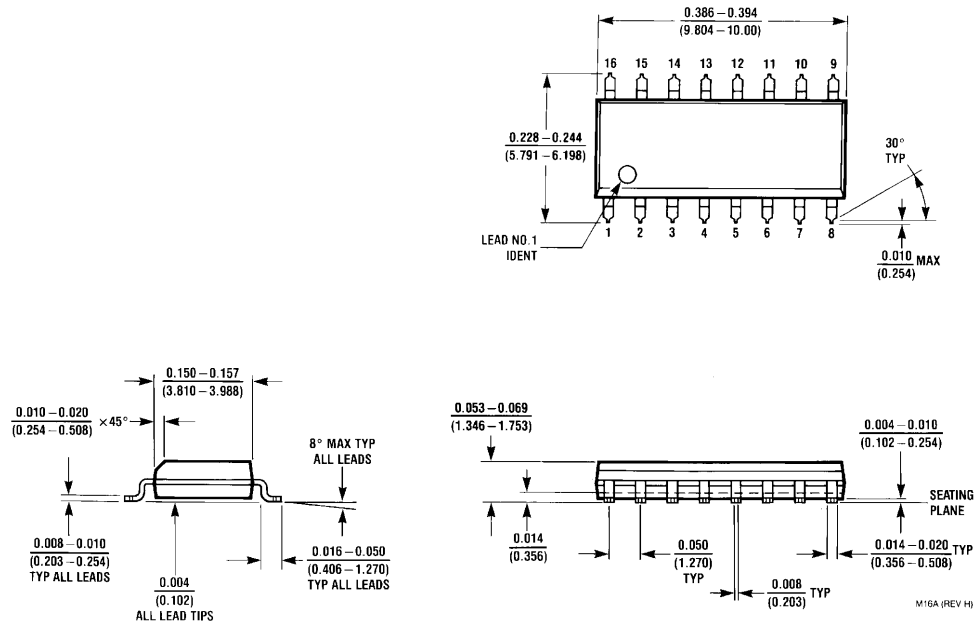
Note 6: I_{CC} is measured with all \bar{R} inputs grounded, all \bar{S} inputs at 4.5V and all outputs OPEN.

Switching Characteristics

at V_{CC} = 5V and T_A = 25°C

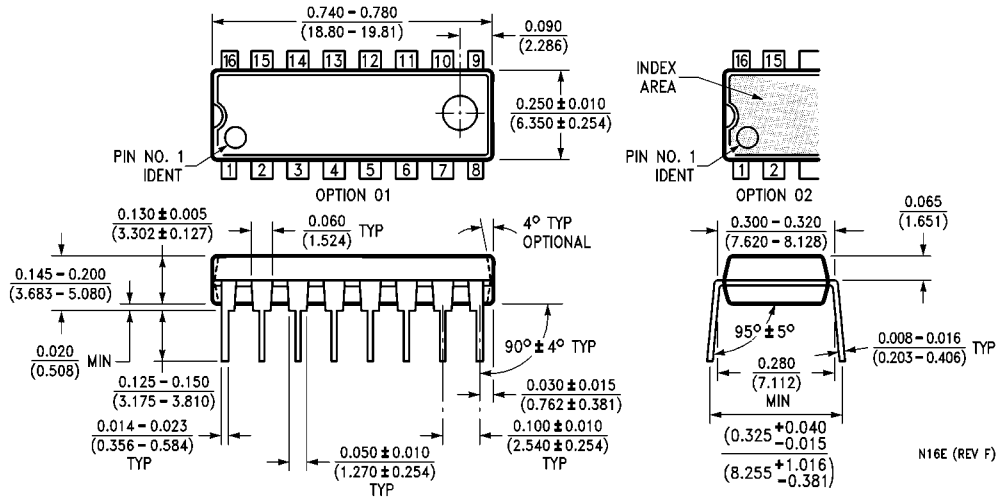
Symbol	Parameter	From (Input) To (Output)	R _L = 2 kΩ				Units
			C _L = 15 pF		C _L = 50 pF		
			Min	Max	Min	Max	
t _{PLH}	Propagation Delay Time LOW-to-HIGH Level Output	\bar{S} to Q		22		25	ns
t _{PHL}	Propagation Delay Time HIGH-to-LOW Level Output	\bar{S} to Q		15		23	ns
t _{PHL}	Propagation Delay Time HIGH-to-LOW Level Output	\bar{R} to Q		27		33	ns

Physical Dimensions inches (millimeters) unless otherwise noted



16-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-012, 0.150 Narrow Package Number M16A

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



16-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300 Wide Package Number N16E

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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