

**MNDM54LS279-X REV 1A0**

 Original Creation Date: 04/13/98  
 Last Update Date: 07/17/98  
 Last Major Revision Date: 04/13/98

**QUAD SET-RESET LATCH**
**General Description**

The 'LS279 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 on the input data.

**Industry Part Number**

54LS279

**NS Part Numbers**

 DM54LS279J/883  
 DM54LS279W/883

**Prime Die**

L279

**Processing**

MIL-STD-883, Method 5004

**Quality Conformance Inspection**

MIL-STD-883, Method 5005

**Subgrp Description**
**Temp ( °C)**

1	Static tests at	+25
2	Static tests at	+125
3	Static tests at	-55
4	Dynamic tests at	+25
5	Dynamic tests at	+125
6	Dynamic tests at	-55
7	Functional tests at	+25
8A	Functional tests at	+125
8B	Functional tests at	-55
9	Switching tests at	+25
10	Switching tests at	+125
11	Switching tests at	-55

## **Features**

**(Absolute Maximum Ratings)**

(Note 1)

Storage Temperature	-65 C to +150 C
Ambient Temperature under Bias	-55 C to +125 C
Input Voltage	-0.5V to +10.0V
VCC Pin Potential to Ground Pin	-0.5V to +7.0V
Junction Temperature under Bias	-55 C to +175 C
Current Applied to Output in LOW state (Max)	twice the rated I <sub>OL</sub> (ma)

Note 1: Absolute Maximum ratings are those values beyond which the device may be damaged or have its useful life impaired. Functional operation under these conditions is not implied.

**Recommended Operating Conditions**

Free Air Ambient Temperature	
Military	-55 C to +125 C
Supply Voltage	
Military	+4.5V to +5.5V

## Electrical Characteristics

### DC PARAMETER

(The following conditions apply to all the following parameters, unless otherwise specified.)

DC: VCC 4.5V to 5.5V, Temp range: -55C to 125C

SYMBOL	PARAMETER	CONDITIONS	NOTES	PIN-NAME	MIN	MAX	UNIT	SUB-GROUPS
IIH	Input High Current	VCC=5.5V, VM=2.7V, VINH=4.5V, VINL=0.0V	1, 3	INPUTS		20.0	uA	1, 2, 3
IBVI	Input High Current	VCC=5.5V, VM=10.0V, VINH=4.5V, VINL=0.0V	1, 3	INPUTS		100	uA	1, 2, 3
IIL	Input LOW Current	VCC=5.5V, VM=0.4V, VINH=4.5V, VINL=0.0V	1, 3	INPUTS	-0.03	-0.4	mA	1, 2, 3
VOL	Output LOW Voltage	VCC=4.5V, VIH=2.0V, IOL=4.0mA, VINH=4.5V, VIL=0.7V	1, 3	OUTPUTS		0.4	V	1, 2, 3
VOH	Output HIGH Voltage	VCC=4.5V, VIL=0.7V, IOH=-0.4mA, VINH=4.5V, VINL=0.0V, VIH=2.0V	1, 3	OUTPUTS	2.5		V	1, 2, 3
IOS	Short-Circuit Current	VCC=5.5V, VINL=0.0V, VOUT=0.0V, VINH=4.5V	1, 3	OUTPUTS	-20	-100	mA	1, 2, 3
VCD	Input Clamp Diode Voltage	VCC=4.5V, IM=-18mA, VINH=4.5V	1, 3	INPUTS		-1.5	V	1, 2, 3
ICC	Supply Current	VCC=5.5V, VINL=0.0V, VINH=4.5V	1, 3	VCC		7.0	mA	1, 2, 3

### AC PARAMETER - 15pF

(The following conditions apply to all the following parameters, unless otherwise specified.)

AC: CL=15pF, RL=2k ohms Temp range: +25C

tpLH	Propagation Delay	VCC=5.0V	5	$\bar{S}$ to Q		22.0	ns	9
tpHL	Propagation Delay	VCC=5.0V	5	$\bar{S}$ to Q		15.0	ns	9
tpHL 2	Propagation Delay	VCC=5.0V	5	$\bar{R}$ to Q		27.0	ns	9

### AC PARAMETER - 50pF

(The following conditions apply to all the following parameters, unless otherwise specified.)

AC: CL=50pF, RL=2k ohms Temp range: -55C to +125C

tpLH	Propagation Delay	VCC=5.0V	2, 4	$\bar{S}$ to Q	2.0	27.0	ns	9
			2, 4	$\bar{S}$ to Q	2.0	35.0	ns	10, 11
tpHL	Propagation Delay	VCC=5.0V	2, 4	$\bar{S}$ to Q	2.0	20.0	ns	9
			2, 4	$\bar{S}$ to Q	2.0	26.0	ns	10, 11
tpHL 2	Propagation Delay	VCC=5.0V	2, 4	$\bar{R}$ to Q	2.0	32.0	ns	9
			2, 4	$\bar{R}$ to Q	2.0	42.0	ns	10, 11

Note 1: Screen tested 100% on each device at -55C, +25C & +125C temperature, subgroups A1, 2, 3, 7 & 8.

Note 2: Screen tested 100% on each device at +25C temperature only, subgroup A9.

Note 3: Sample tested (Method 5005, Table 1) on each MFG. lot at +25C, +125C & -55C temperature, subgroups A1, 2, 3, 7 & 8.

Note 4: Sample tested (Method 5005, Table 1) on each MFG. lot at +25C, subgroup A9. Subgroups 10 & 11 are guaranteed, not tested.

*(Continued)*

Note 5: Guaranteed, not tested.

**Revision History**

Rev	ECN #	Rel Date	Originator	Changes
1A0	M0002150	07/17/98	Linda Collins	Initial MDS release: MNDM54LS279-X Rev. 1A0. Added note 4 to the AC (50pF) notes reference column. Reworded the phrase in note 4 from "and periodically at +125C & -55C, subgroups 10 & 11" to "Subgroups 10 & 11 are guaranteed, not tested".