

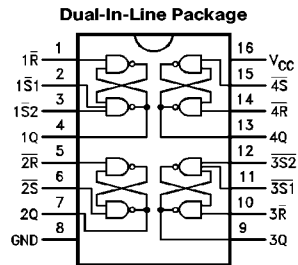
June 1989

## 54279/DM74279 Quad Set-Reset Latch

### General Description

This device contains four independent set-reset type flip-flops with one Q output each.

### Connection Diagram



TL/F/9785-1

Order Number 54279DMQB, 54279FMQB or DM74279N  
NS Package Number J16A, N16E or W16A

Pin Names	Description
$R_n$	Reset Inputs (Active Low)
$S_n$	Set Inputs (Active Low)
Q	Outputs

### Truth Table

Inputs		$\bar{R}$	Output Q
$\bar{S}1$	$\bar{S}2$		
L	L	L	h
L	X	H	H
X	L	H	H
H	H	L	L
H	H	H	No Change

H = HIGH Voltage Level

L = LOW Voltage Level

X = Immaterial

h = The output is HIGH as long as  $\bar{S}1$  or  $\bar{S}2$  is LOW. If all inputs go HIGH simultaneously, the output state is indeterminate; otherwise, it follows the Truth Table.

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### Absolute Maximum Ratings (Note)

If Military/Aerospace specified devices are required, please contact the National Semiconductor Sales Office/Distributors for availability and specifications.

Supply Voltage	7V
Input Voltage	5.5V
Operating Free Air Temperature Range	
54	-55°C to +125°C
DM74	0°C to +70°C
Storage Temperature Range	-65°C to +150°C

Note: 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" table 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	54279			DM74279			Units
		Min	Nom	Max	Min	Nom	Max	
V <sub>CC</sub>	Supply Voltage	4.5	5	5.5	4.75	5	5.25	V
V <sub>IH</sub>	High Level Input Voltage	2			2			V
V <sub>IL</sub>	Low Level Input Voltage			0.8			0.8	V
I <sub>OH</sub>	High Level Output Current			-0.8			-0.8	mA
I <sub>OL</sub>	Low Level Output Current			16			16	mA
T <sub>A</sub>	Free Air Operating Temperature	-55		125	0		70	°C

### Electrical Characteristics

over Recommended Operating Free Air Temperature Range (Unless Otherwise Noted)

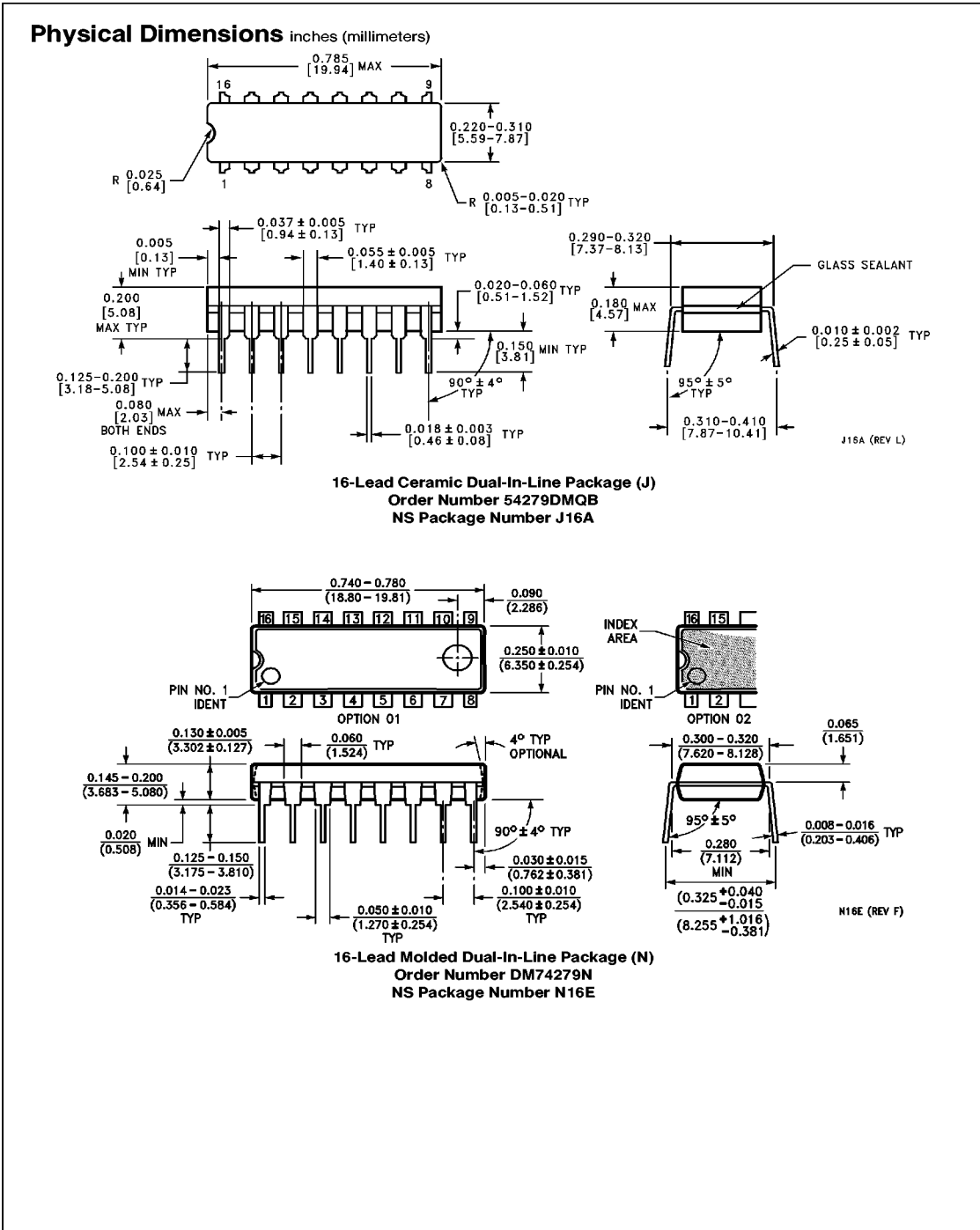
Symbol	Parameter	Conditions	Min	Typ (Note 1)	Max	Units
V <sub>I</sub>	Input Clamp Voltage	V <sub>CC</sub> = Min, I <sub>I</sub> = -12 mA			-1.5	V
V <sub>OH</sub>	High Level Output Voltage	V <sub>CC</sub> = Min, I <sub>OH</sub> = Max, V <sub>IL</sub> = Max	2.4	3.4		V
V <sub>OL</sub>	Low Level Output Voltage	V <sub>CC</sub> = Min, I <sub>OL</sub> = Max, V <sub>IH</sub> = Min		0.2	0.4	V
I <sub>I</sub>	Input Current @ Max Input Voltage	V <sub>CC</sub> = Max, V <sub>I</sub> = 5.5V			1	mA
I <sub>IH</sub>	High Level Input Current	V <sub>CC</sub> = Max, V <sub>I</sub> = 2.4V			40	μA
I <sub>IL</sub>	Low Level Input Current	V <sub>CC</sub> = Max, V <sub>I</sub> = 0.4V			-1.6	mA
I <sub>OS</sub>	Short Circuit Output Current	V <sub>CC</sub> = Max (Note 2)	54 DM74	-20 -18	-55 -57	mA
I <sub>CC</sub>	Supply Current	V <sub>CC</sub> = Max, $\bar{R}$ = 0V			30	mA

### Switching Characteristics

Symbol	Parameter	54/DM74		Units
		Min	Max	
t <sub>PLH</sub> t <sub>PHL</sub>	Propagation Delay S to Q		22 15	ns
t <sub>PHL</sub>	Propagation Delay $\bar{R}$ to Q		27	ns

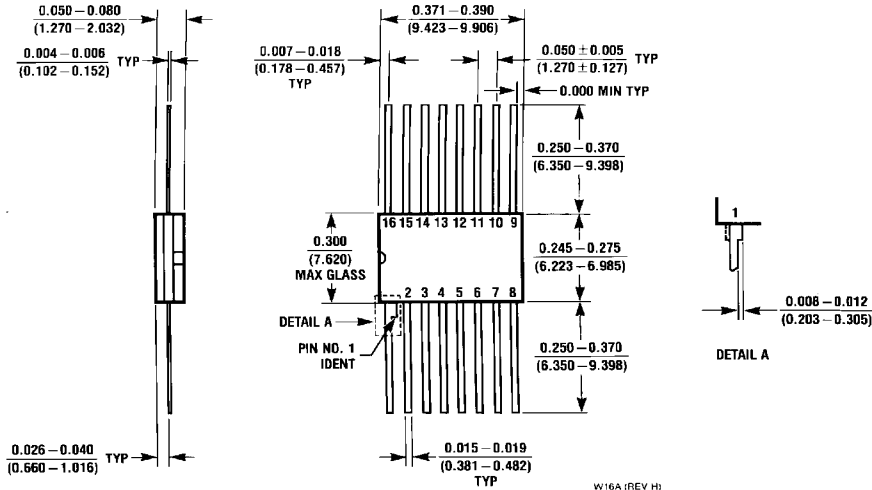
Note 1: All typicals are at V<sub>CC</sub> = 5V, T<sub>A</sub> = 25°C.

Note 2: Not more than one output should be shorted at a time.



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**Physical Dimensions** inches (millimeters) (Continued)



**16-Lead Ceramic Flat Package (W)**  
**Order Number 54279FMQB**  
**NS Package Number W16A**

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