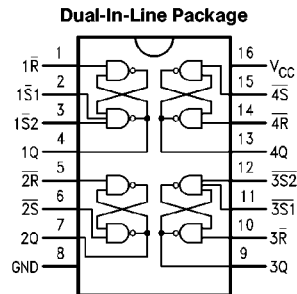


54279/DM74279 Quad Set-Reset Latch

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

| \bar{S}_1 | Inputs | | Output Q |
|-------------|-------------|-----------|-------------|
| | \bar{S}_2 | \bar{R} | |
| 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.

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 _{CC} | Supply Voltage | 4.5 | 5 | 5.5 | 4.75 | 5 | 5.25 | V |
| V _{IH} | High Level Input Voltage | 2 | | | 2 | | | V |
| V _{IL} | Low Level Input Voltage | | | 0.8 | | | 0.8 | V |
| I _{OH} | High Level Output Current | | | -0.8 | | | -0.8 | mA |
| I _{OL} | Low Level Output Current | | | 16 | | | 16 | mA |
| T _A | 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 _I | Input Clamp Voltage | V _{CC} = Min, I _I = -12 mA | | | -1.5 | V |
| V _{OH} | High Level Output Voltage | V _{CC} = Min, I _{OH} = Max, V _{IL} = Max | 2.4 | 3.4 | | V |
| V _{OL} | Low Level Output Voltage | V _{CC} = Min, I _{OL} = Max, V _{IH} = Min | | 0.2 | 0.4 | V |
| I _I | Input Current @ Max Input Voltage | V _{CC} = Max, V _I = 5.5V | | | 1 | mA |
| I _{IH} | High Level Input Current | V _{CC} = Max, V _I = 2.4V | | | 40 | μA |
| I _{IL} | Low Level Input Current | V _{CC} = Max, V _I = 0.4V | | | -1.6 | mA |
| I _{OS} | Short Circuit Output Current | V _{CC} = Max (Note 2) | 54 | -20 | -55 | mA |
| | | DM74 | | -18 | -57 | |
| I _{CC} | Supply Current | V _{CC} = Max, \bar{R} = 0V | | | 30 | mA |

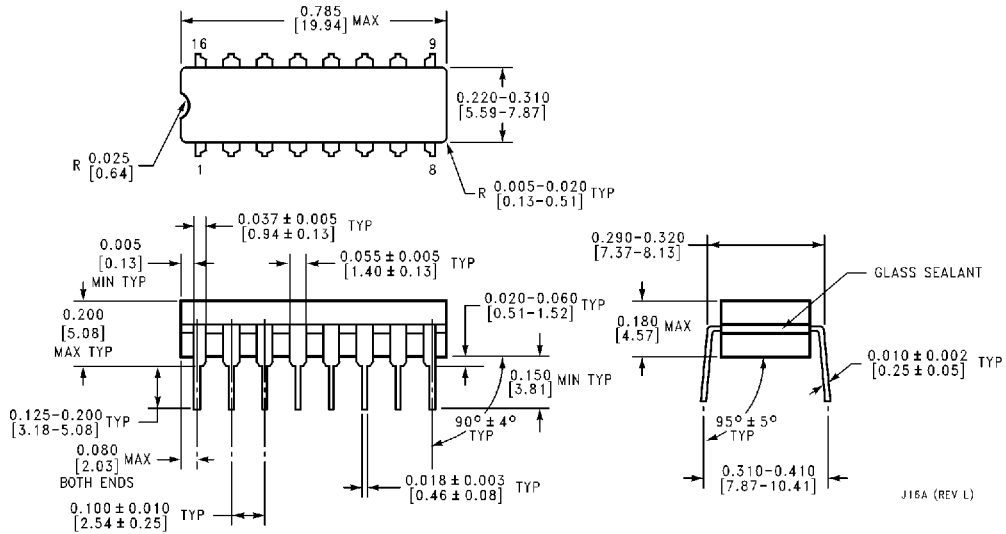
Switching Characteristics

| Symbol | Parameter | 54/DM74 | | Units |
|------------------|-------------------------------------|---------|-----|-------|
| | | Min | Max | |
| t _{PLH} | Propagation Delay \bar{S} to Q | | 22 | ns |
| t _{PHL} | | | 15 | |
| t _{PHL} | Propagation Delay \bar{R} to Q | | 27 | ns |

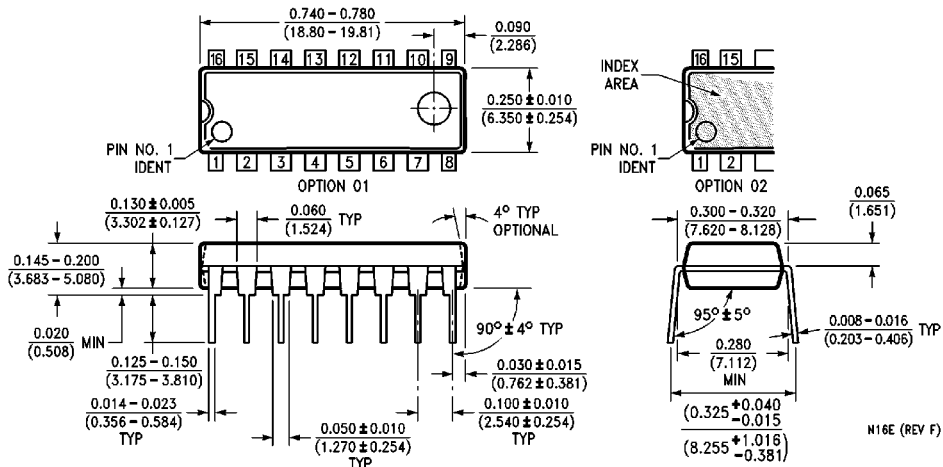
Note 1: All typicals are at V_{CC} = 5V, T_A = 25°C.

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

Physical Dimensions inches (millimeters)

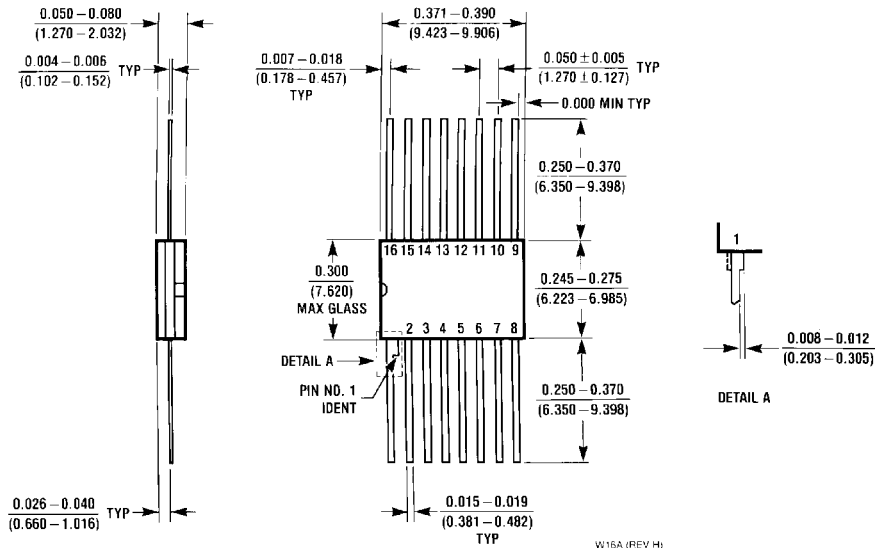


16-Lead Ceramic Dual-In-Line Package (J)
Order Number 54279DMQB
NS Package Number J16A



16-Lead Molded Dual-In-Line Package (N)
Order Number DM74279N
NS Package Number N16E

Physical Dimensions inches (millimeters) (Continued)



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

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2. A critical component is 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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