PART NUMBER

DM54279WB-ROCV

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-38535
  • 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.

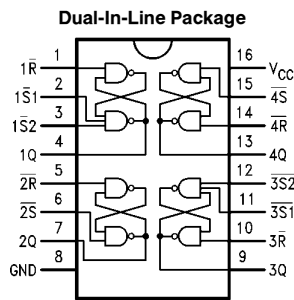National Semiconductor is now part of

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National *Semiconductor*

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

Dual-In-Line Package

Pin	Signal		Pin	Signal
1	$1\overline{R}$		16	V_{CC}
2	$1\overline{S}1$		15	$\overline{4S}$
3	$1\overline{S}2$		14	$\overline{4R}$
4	1Q		13	4Q
5	$\overline{2R}$		12	$\overline{3S2}$
6	$\overline{2S}$		11	$\overline{3S1}$
7	2Q		10	$\overline{3R}$
8	GND		9	3Q

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			Output
$\overline{S}1$	$\overline{S}2$	$\overline{R}$	Q
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 $\overline{S}1$ or $\overline{S}2$ 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, $V_I = 5.5$V				1	mA
I_{IH}	High Level Input Current	$V_{CC} =$ Max, $V_I = 2.4$V				40	μA
I_{IL}	Low Level Input Current	$V_{CC} =$ Max, $V_I = 0.4$V				−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, $\overline{R} = 0$V				30	mA

Switching Characteristics

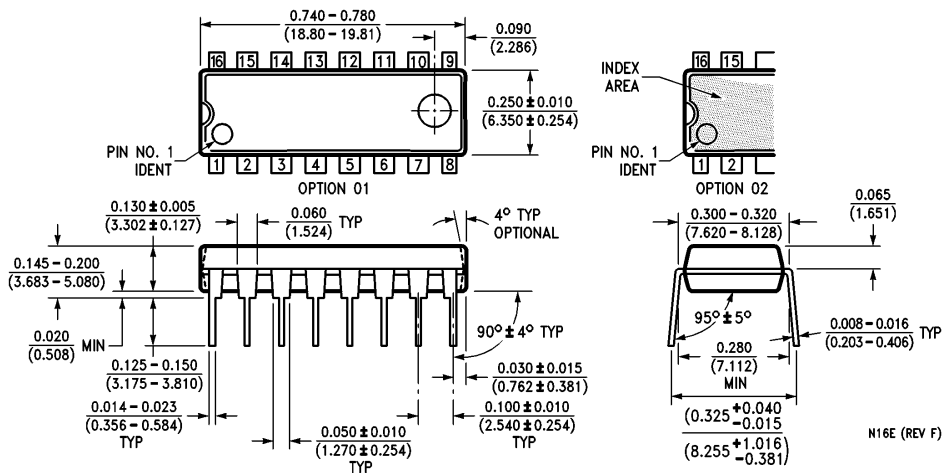| Symbol	Parameter	54/DM74		Units
		Min	Max	
t_{PLH} t_{PHL}	Propagation Delay $\overline{S}$ to Q		22 15	ns
t_{PHL}	Propagation Delay $\overline{R}$ to Q		27	ns

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

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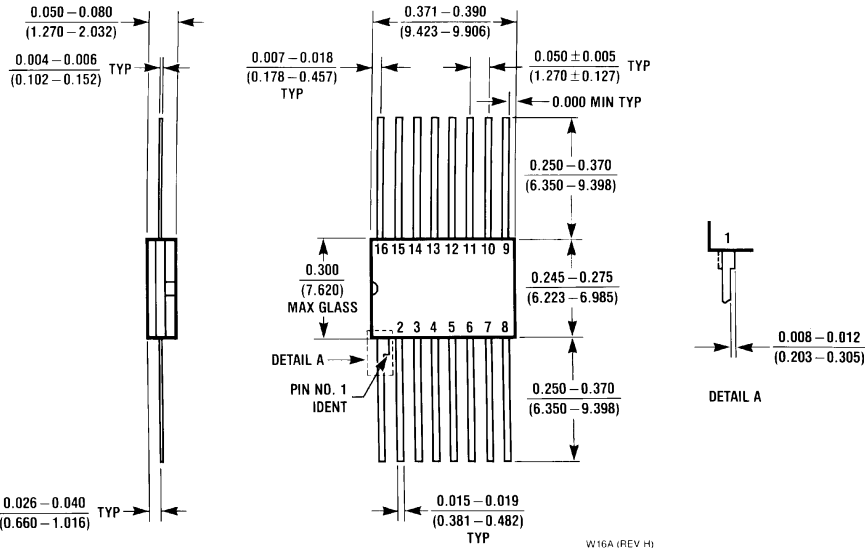
2

Physical Dimensions inches (millimeters)

0.785
[19.94] MAX

16   9

0.220-0.310
[5.59-7.87]

R 0.025
[0.64]

1   8

R 0.005-0.020 TYP
[0.13-0.51]

0.037 ± 0.005
[0.94 ± 0.13] TYP

0.005
[0.13]
MIN TYP

0.055 ± 0.005
[1.40 ± 0.13] TYP

0.290-0.320
[7.37-8.13]

GLASS SEALANT

0.020-0.060 TYP
[0.51-1.52]

0.200
[5.08]
MAX TYP

0.180 MAX
[4.57]

0.010 ± 0.002 TYP
[0.25 ± 0.05]

0.150 MIN TYP
[3.81]

0.125-0.200 TYP
[3.18-5.08]

90° ± 4°
TYP

95° ± 5°
TYP

0.080 MAX
[2.03]
BOTH ENDS

0.018 ± 0.003 TYP
[0.46 ± 0.08]

0.310-0.410
[7.87-10.41]

J16A (REV L)

0.100 ± 0.010 TYP
[2.54 ± 0.25]
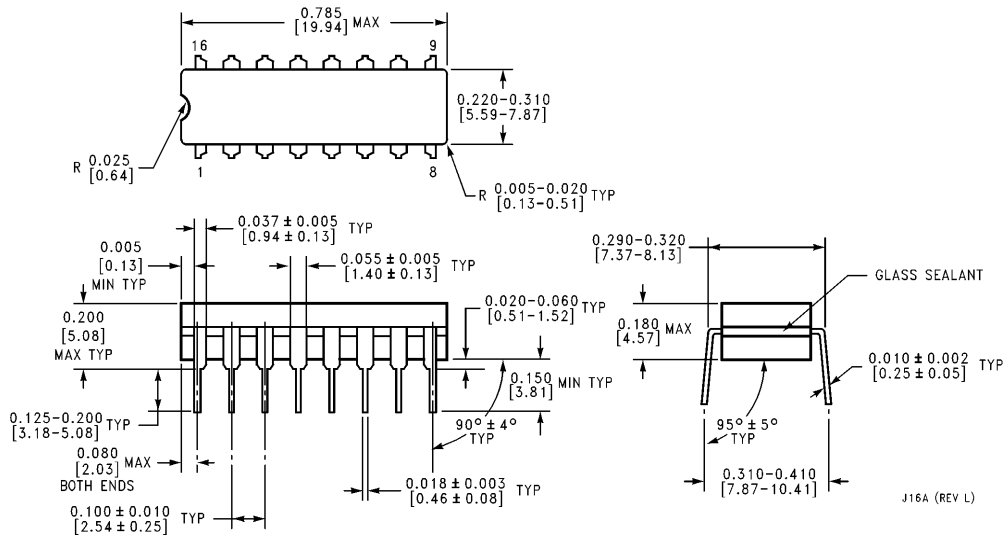
16-Lead Ceramic Dual-In-Line Package (J)
Order Number 54279DMQB
NS Package Number J16A

0.740 - 0.780
(18.80 - 19.81)

0.090
(2.286)

16 15 14 13 12 11 10 9

INDEX
AREA

16 15

0.250 ± 0.010
(6.350 ± 0.254)

PIN NO. 1
IDENT

1   2   3   4   5   6   7   8

OPTION 01

PIN NO. 1
IDENT

1   2

OPTION 02

0.065
(1.651)

0.130 ± 0.005
(3.302 ± 0.127)

0.060 TYP
(1.524)

4° TYP
OPTIONAL

0.300 - 0.320
(7.620 - 8.128)

0.145 - 0.200
(3.683 - 5.080)

95° ± 5°

0.008 - 0.016 TYP
(0.203 - 0.406)

0.020 MIN
(0.508)

90° ± 4° TYP

0.280
(7.112)
MIN

0.125 - 0.150
(3.175 - 3.810)

0.030 ± 0.015
(0.762 ± 0.381)

(0.325 +0.040
-0.015)

0.014 - 0.023
(0.356 - 0.584)
TYP

0.100 ± 0.010
(2.540 ± 0.254)
TYP

(8.255 +1.016
-0.381)

N16E (REV F)

0.050 ± 0.010
(1.270 ± 0.254)
TYP

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

3

Physical Dimensions inches (millimeters) (Continued)

0.050 − 0.080
(1.270 − 2.032)

$\dfrac{0.004 - 0.006}{(0.102 - 0.152)}$ TYP

0.371 − 0.390
(9.423 − 9.906)

$\dfrac{0.007 - 0.018}{(0.178 - 0.457)}$ TYP

$\dfrac{0.050 \pm 0.005}{(1.270 \pm 0.127)}$ TYP

0.000 MIN TYP

$\dfrac{0.250 - 0.370}{(6.350 - 9.398)}$

16 15 14 13 12 11 10 9

$\dfrac{0.300}{(7.620)}$ MAX GLASS

$\dfrac{0.245 - 0.275}{(6.223 - 6.985)}$

2 3 4 5 6 7 8

DETAIL A

PIN NO. 1 IDENT

$\dfrac{0.250 - 0.370}{(6.350 - 9.398)}$

1

$\dfrac{0.008 - 0.012}{(0.203 - 0.305)}$

DETAIL A

$\dfrac{0.026 - 0.040}{(0.660 - 1.016)}$ TYP

$\dfrac{0.015 - 0.019}{(0.381 - 0.482)}$ TYP

W16A (REV H)

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

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