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 recreations are done with the approval of the OCM.

Parts are tested using original factory test programs or Rochester developed test solutions to guarantee product meets or exceed 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 OEM specifications. 'Typical' values are for reference purposes only. Certain minimum or maximum ratings may be based on product characterization, design, simulation, or sample testing.

- **Inverting Versions of SN54LS153, SN74LS153**
- **Schottky-Diode-Clamped Transistors**
- **Permits Multiplexing from N lines to 1 line**
- **Performs Parallel-to-Serial Conversion**
- **Typical Average Propagation Delay Times:**
  - **Data Input to Output . . . 15 ns**
  - **Strobe Input to Output . . . 19 ns**
  - **Select Input to Output . . . 22 ns**
- **Fully Compatible with most TTL Circuits**
- **Low Power Dissipation . . . 31 mW Typical (Enabled)**
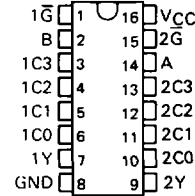
description

Each of these Schottky-clamped data selectors/-multiplexers contains inverters and drivers to supply fully complementary, on-chip, binary decoding data selection to the AND-OR-invert gates. Separate strobe inputs are provided for each of the two four-line sections.
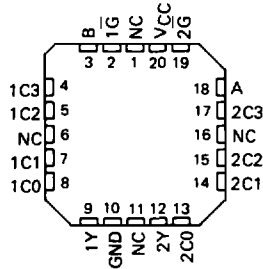
SN54LS352 . . . J OR W PACKAGE
SN74LS352 . . . D OR N PACKAGE
(TOP VIEW)

1G̅	1	16	V_CC
B	2	15	2G
1C3	3	14	A
1C2	4	13	2C3
1C1	5	12	2C2
1C0	6	11	2C1
1Y	7	10	2C0
GND	8	9	2Y

SN54LS352 . . . FK PACKAGE
(TOP VIEW)

Top pins: B, 1G̅, NC, V_CC, 2G (pins 3 2 1 20 19)

Left	Pin	Pin	Right
1C3	4	18	A
1C2	5	17	2C3
NC	6	16	NC
1C1	7	15	2C2
1C0	8	14	2C1

Bottom pins: 1Y, GND, NC, 2Y, 2C0 (pins 9 10 11 12 13)

NC – No internal connection

FUNCTION TABLE

SELECT INPUTS		DATA INPUTS				STROBE	OUTPUT
B	A	C0	C1	C2	C3	G̅	Y
X	X	X	X	X	X	H	H
L	L	L	X	X	X	L	H
L	L	H	X	X	X	L	L
L	H	X	L	X	X	L	H
L	H	X	H	X	X	L	L
H	L	X	X	L	X	L	H
H	L	X	X	H	X	L	L
H	H	X	X	X	L	L	H
H	H	X	X	X	H	L	L

Select inputs A and B are common to both sections
H = high level, L = low level, X = irrelevant

logic symbol[†]
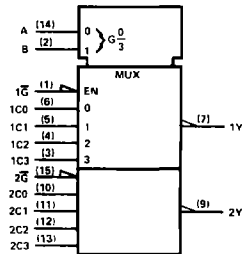
[†]This symbol is in accordance with ANSI/IEEE Std. 91-1984 and IEC Publication 617-12.
Pin numbers shown are for D, J, N, and W packages.

absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Supply voltage, V_CC (see Note 1)	7 V
Input voltage	7 V
Operating free-air temperature range: SN54LS352	−55°C to 125°C
SN74LS352	0°C to 70°C
Storage temperature range	−65°C to 150°C

NOTE 1 Voltage values are with respect to network ground terminal.

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TTL Devices

logic diagram (positive logic)
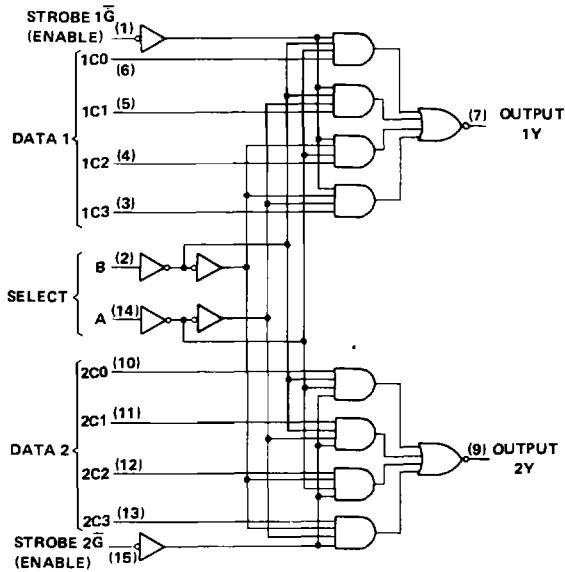
Pin numbers shown are for D, J, N, and W packages.

schematics of inputs and outputs

EQUIVALENT OF $\overline{G}$ INPUTS	EQUIVALENT OF ALL OTHER INPUTS	TYPICAL OF BOTH OUTPUTS

recommended operating conditions

		SN54LS352			SN74LS352			UNIT
		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			0.7			0.8	V
I_{OH}	High-level output current			−0.4			−0.4	mA
I_{OL}	Low-level output current			4			8	mA
T_A	Operating free-air temperature	−55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS[†]		SN54LS352			SN74LS352			UNIT
			MIN	TYP[‡]	MAX	MIN	TYP[‡]	MAX	
V_{IK}	V_{CC} = MIN,	I_I = −18 mA			−1.5			−1.5	V
V_{OH}	V_{CC} = MIN, V_{IH} = 2 V, V_{IL} = MAX, I_{OH} = −0.4 mA		2.5	3.4		2.7	3.4		V
V_{OL}	V_{CC} = MIN, V_{IH} = 2 V, V_{IL} = MAX	I_{OL} = 4 mA		0.25	0.4		0.25	0.4	V
		I_{OL} = 8 mA					0.35	0.5	
I_I	V_{CC} = MAX,	V_I = 7 V			0.1			0.1	mA
I_{IH}	V_{CC} = MAX,	V_I = 2.7 V			20			20	µA
I_{IL} Ḡ	V_{CC} = MAX,	V_I = 0.4 V			−0.2			−0.2	mA
All other					−0.4			−0.4	
I_{OS}§	V_{CC} = MAX		−20		−100	−20		−100	mA
I_{CCL}	V_{CC} = MAX, See Note 2			6.2	10		6.2	10	mA

† For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.
‡ All typical values are at V_{CC} = 5 V, T_A = 25°C.
§ Not more than one output should be shorted at a time, and duration of the short-circuit should not exceed one second.
NOTE 2: I_{CCL} is measured with the outputs open and all inputs grounded.

switching characteristics, V_{CC} = 5 V, T_A = 25°C

PARAMETER¶	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{PLH}	Data	Y			13	20	ns
t_{PHL}	Data	Y			17	26	ns
t_{PLH}	A or B	Y	R_L = 2 kΩ, C_L = 15 pF, See Note 3		19	29	ns
t_{PHL}	A or B	Y			25	38	ns
t_{PLH}	Ḡ	Y			16	24	ns
t_{PHL}	Ḡ	Y			21	32	ns

¶ t_{PLH} = propagation delay time, low-to-high-level output
t_{PHL} = propagation delay time, high-to-low-level output
NOTE 3: Load circuits and voltage waveforms are shown in Section 1.