

- Inverting Versions of SN54F153 and SN74F153
- Permits Multiplexing from N Lines to 1 Line
- Performs Parallel-to-Serial Conversion
- Strobe (Enable) Line Provided for Cascading (N Lines to n Lines)
- Package Options Include Plastic "Small Outline" Packages, Ceramic Chip Carriers, and Standard Plastic and Ceramic 300-mil DIPs
- Dependable Texas Instruments Quality and Reliability

**description**

Each of these data selectors/multiplexers contains inverters and drivers to supply fully complementary binary decoding data selection to the AND-OR-invert gates. Separate strobe inputs ( $\bar{G}$ ) are provided for each of the two four-line sections.

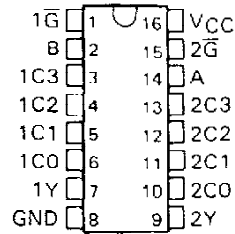
The SN54F352 is characterized for operation over the full military temperature range of  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$ . The SN74F352 is characterized for operation from  $0^{\circ}\text{C}$  to  $70^{\circ}\text{C}$ .

FUNCTION TABLE

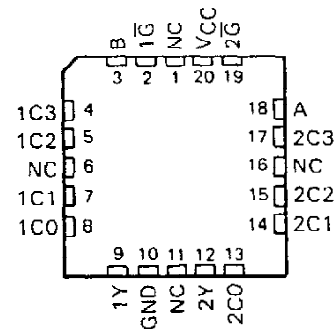
SELECT INPUTS		DATA INPUTS				STROBE	OUTPUT
B	A	C0	C1	C2	C3	$\bar{G}$	Y
X	X	X	X	X	X	H	H
L	L	L	X	X	X	L	H
L	L	H	X	X	X	L	L
L	H	X	L	X	X	L	H
L	H	X	H	X	X	L	L
H	L	X	X	L	X	L	H
H	L	X	X	H	X	L	L
H	H	X	X	X	L	L	H
H	H	X	X	X	H	L	L

Select inputs A and B are common to both sections.

SN54F352 . . . J PACKAGE  
SN74F352 . . . D OR N PACKAGE  
(TOP VIEW)

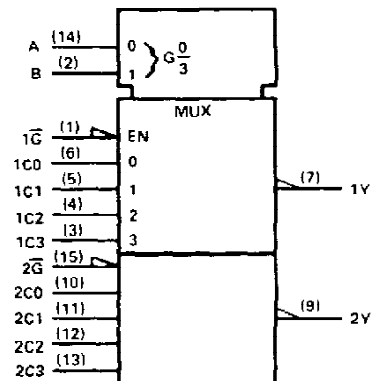


SN54F352 . . . FK PACKAGE  
(TOP VIEW)



NC—No internal connection

**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, and N packages.

PRODUCTION DATA documents contain information current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.

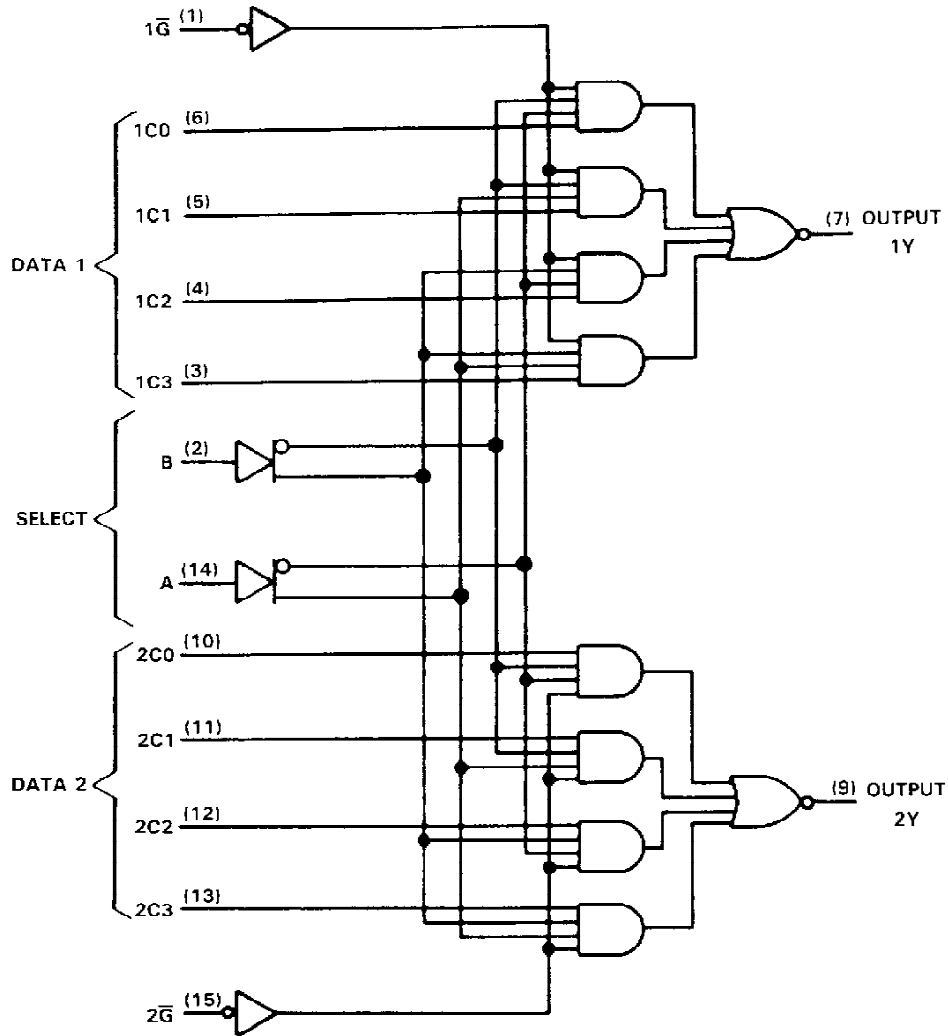


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**SN54F352, SN74F352**  
**DUAL 4-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS**

logic diagram (positive logic)



Pin numbers shown are for D, J, and N packages.

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

Supply voltage, $V_{CC}$ .....	-0.5 V to 7 V
Input voltage <sup>†</sup> .....	-1.2 V to 7 V
Input current .....	-30 mA to 5 mA
Voltage applied to any output in the high state .....	-0.5 V to $V_{CC}$
Current into any output in the low state .....	40 mA
Operating free-air temperature range: SN54F352 .....	-55°C to 125°C
SN74F352 .....	0°C to 70°C
Storage temperature range .....	-65°C to 150°C

<sup>†</sup>The input voltage ratings may be exceeded provided the input current ratings are observed.



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SN54F352, SN74F352  
DUAL 4-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS

recommended operating conditions

		SN54F352			SN74F352			UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
V <sub>CC</sub>	Supply voltage	4.5	5	5.5	4.5	5	5.5	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>IK</sub>	Input clamp current			-18			-18	mA
I <sub>OH</sub>	High-level output current			-1			-1	mA
I <sub>OL</sub>	Low-level output current			20			20	mA
T <sub>A</sub>	Operating free-air temperature	-55		125	0		70	°C

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

PARAMETER	TEST CONDITIONS	SN54F352			SN74F352			UNIT
		MIN	TYP†	MAX	MIN	TYP†	MAX	
V <sub>IK</sub>	V <sub>CC</sub> = 4.5 V, I <sub>I</sub> = -18 mA			-1.2			-1.2	V
V <sub>OH</sub>	V <sub>CC</sub> = 4.5 V, I <sub>OH</sub> = -1 mA	2.5	3.4		2.5	3.4		V
	V <sub>CC</sub> = 4.75 V, I <sub>OH</sub> = -1 mA				2.7			
V <sub>OL</sub>	V <sub>CC</sub> = 4.5 V, I <sub>OL</sub> = 20 mA		0.3	0.5		0.3	0.5	V
I <sub>I</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 7 V			0.1			0.1	mA
I <sub>IH</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 2.7 V			20			20	μA
I <sub>IL</sub>	V <sub>CC</sub> = 5.5 V, V <sub>I</sub> = 0.5 V			-0.6			-0.6	mA
I <sub>OS</sub> ‡	V <sub>CC</sub> = 5.5 V, V <sub>O</sub> = 0	-60		-150	-60		-150	mA
I <sub>CC</sub> H	V <sub>CC</sub> = 5.5 V,		9.3	14		9.3	14	mA
I <sub>CC</sub> L	V <sub>CC</sub> = 5.5 V,		13.3	20		13.3	20	

switching characteristics (see Note 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V <sub>CC</sub> = 5V, C <sub>L</sub> = 50 pF, R <sub>L</sub> = 500 Ω, T <sub>A</sub> = 25°C			V <sub>CC</sub> = 4.5 V to 5.5 V, C <sub>L</sub> = 50 pF, R <sub>L</sub> = 500 Ω, T <sub>A</sub> = MIN to MAX§				UNIT
			F352			SN54F352		SN74F352		
			MIN	TYP	MAX	MIN	MAX	MIN	MAX	
t <sub>PLH</sub>	A or B	Y	2.7	7.6	11	2.2	14	2.2	12.5	ns
t <sub>PHL</sub>			2.2	6.1	8.5	1.7	11	1.7	9.5	
t <sub>PLH</sub>	G	Y	1.7	4.1	6	1.2	8	1.2	7	ns
t <sub>PHL</sub>			2.2	4.6	7	1.7	9	1.7	8	
t <sub>PLH</sub>	Data (Any C)	Y	1.7	4.8	7	1.2	9	1.2	8	ns
t <sub>PHL</sub>			1	2.1	3.5	1	5	1	4	

†All typical values are at V<sub>CC</sub> = 5 V, T<sub>A</sub> = 25°C.

‡Not more than one output should be shorted at a time and the duration of the short circuit should not exceed one second.

§For conditions shown as MIN or MAX, use the appropriate value specified under Recommended Operating Conditions.

NOTE 1: Load circuits and waveforms are shown in Section 1.



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