- **Permit Multiplexing from N Lines to 1 Line**
- **Perform Parallel-to-Serial Conversion**
- **Strobe Line Provided for Cascading (N Lines to N Lines)**
- **Flow-Through Architecture Optimizes PCB Layout**
- **Center-Pin V_{CC} and GND Pin Configurations Minimize High-Speed Switching Noise**
- **_EPIC_ ™ (Enhanced-Performance Implanted CMOS) 1-μm Process**
- **500-mA Typical Latch-Up Immunity at 125°C**
- **Package Options Include Plastic Small-Outline Packages, and Standard Plastic 300-mil DIPs**

D OR N PACKAGE
(TOP VIEW)

A	1	16	1C0
B	2	15	1C1
1Y	3	14	1C2
GND	4	13	1C3
2Y	5	12	V_{CC}
1$\overline{OE}$	6	11	2C0
2$\overline{OE}$	7	10	2C1
2C3	8	9	2C2
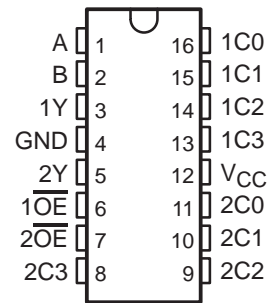
description

Each of these data selectors/multiplexers contains inverters and drivers to supply full binary-decoding data selection to the AND-OR gates. Separate strobe output-enable ($\overline{OE}$) inputs are provided for each of the two four-line sections.

The 74AC11352 is characterized for operation from −40°C to 85°C.

FUNCTION TABLE
(each multiplexer)

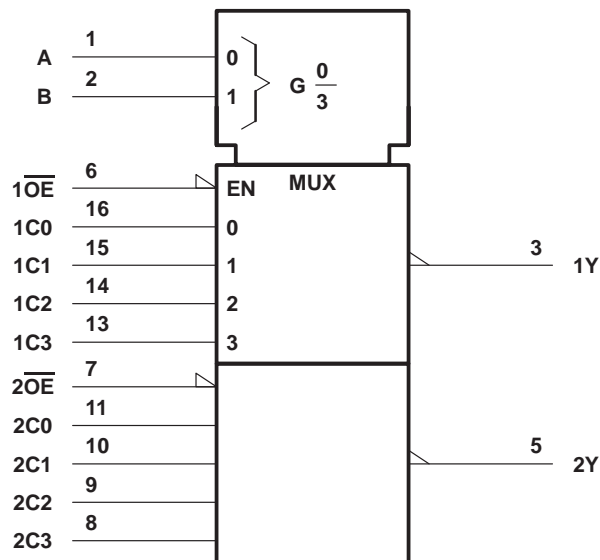| SELECT INPUTS		DATA INPUTS				STROBE	OUTPUT
B	A	C0	C1	C2	C3	$\overline{OE}$	Y
X	X	X	X	X	X	H	H
L	L	L	X	X	X	L	H
L	L	H	X	X	X	L	L
L	H	X	L	X	X	L	H
L	H	X	H	X	X	L	L
H	L	X	X	L	X	L	H
H	L	X	X	H	X	L	L
H	H	X	X	X	L	L	H
H	H	X	X	X	H	L	L

EPIC is a trademark of Texas Instruments Incorporated.

TEXAS INSTRUMENTS

74AC11352
DUAL 4–LINE TO 1–LINE DATA SELECTOR/MULTIPLEXER
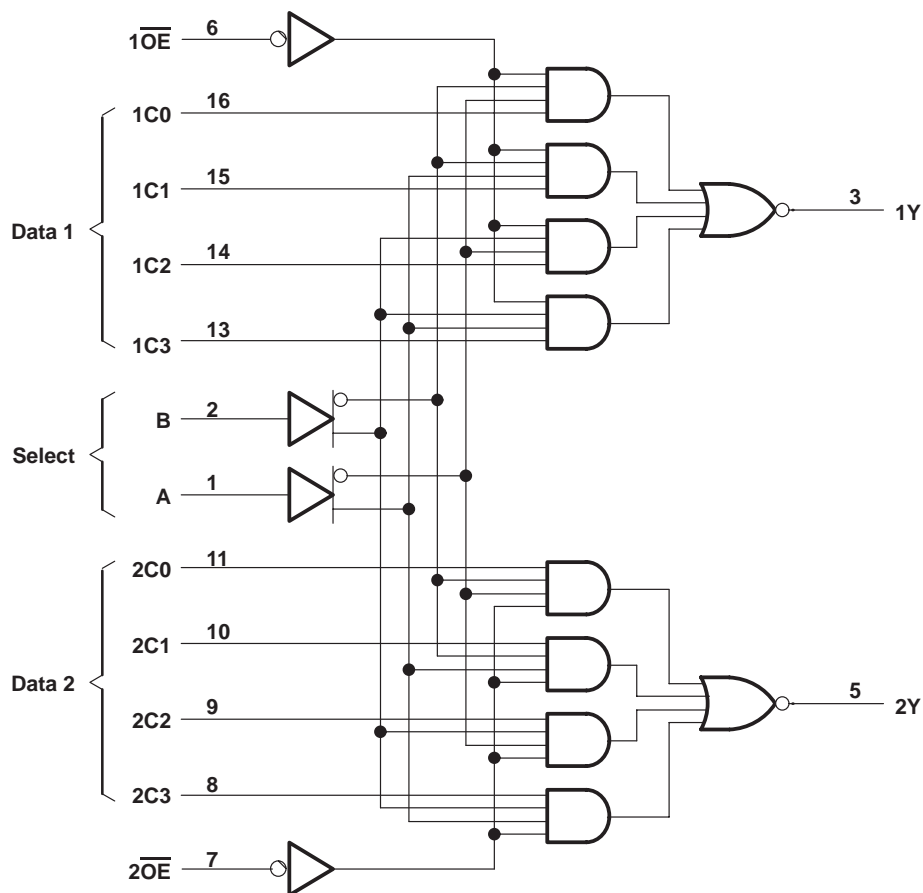
SCAS167 – DECEMBER 1991 – REVISED APRIL 1993

logic symbol†

† This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

logic diagram (positive logic)

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

Supply voltage range, V_{CC} .... −0.5 V to 7 V
Input voltage range, V_I (see Note 1) .... −0.5 V to V_{CC} + 0.5 V
Output voltage range, V_O (see Note 1) .... −0.5 V to V_{CC} + 0.5 V
Input clamp current, I_{IK} (V_I < 0 or V_I > V_{CC}) .... ±20 mA
Output clamp current, I_{OK} (V_O < 0 or V_O > V_{CC}) .... ±50 mA
Continuous output current, I_O (V_O = 0 to V_{CC}) .... ±50 mA
Continuous current through V_{CC} or GND pins .... ±100 mA
Storage temperature range .... −65°C to 150°C

† Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.

NOTE 1: The input and output voltage ratings may be exceeded if the input and output clamp-current ratings are observed.

recommended operating conditions (see Note 2)

			MIN	NOM	MAX	UNIT
V_{CC}	Supply voltage		3	5	5.5	V
V_{IH}	High-level input voltage	V_{CC} = 3 V	2.1			V
		V_{CC} = 4.5 V	3.15			
		V_{CC} = 5.5 V	3.85			
V_{IL}	Low-level input voltage	V_{CC} = 3 V			0.9	V
		V_{CC} = 4.5 V			1.35	
		V_{CC} = 5.5 V			1.65	
V_I	Input voltage		0		V_{CC}	V
V_O	Output voltage		0		V_{CC}	V
I_{OH}	High-level output current	V_{CC} = 3 V			−4	mA
		V_{CC} = 4.5 V			−24	
		V_{CC} = 5.5 V			−24	
I_{OL}	Low-level output current	V_{CC} = 3 V			12	mA
		V_{CC} = 4.5 V			24	
		V_{CC} = 5.5 V			24	
$\Delta t/\Delta v$	Input transition rise or fall rate		0		10	ns/V
T_A	Operating free-air temperature		−40		85	°C

NOTE 2: Unused or floating inputs must be held high or low.

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

PARAMETER	TEST CONDITIONS	V_{CC}	T_A = 25°C MIN	TYP	MAX	MIN	MAX	UNIT
V_{OH}	I_{OH} = − 50 µA	3 V	2.9			2.9		V
		4.5 V	4.4			4.4		
		5.5 V	5.4			5.4		
	I_{OH} = − 4 mA	3 V	2.58			2.48		
		4.5 V	3.94			3.8		
	I_{OL} = − 24 mA	5.5 V	4.94			4.8		
	I_{OH} = − 50 mA†	5.5 V						
	I_{OH} = − 75 mA†	5.5 V				3.85		
V_{OL}	I_{OL} = 50 µA	3 V		0.1			0.1	V
		4.5 V		0.1			0.1	
		5.5 V		0.1			0.1	
	I_{OL} = 12 mA	3 V		0.36			0.44	
	I_{OL} = 24 mA	4.5 V		0.36			0.44	
		5.5 V		0.36			0.44	
	I_{OL} = 50 mA†	5.5 V						
	I_{OL} = 75 mA†	5.5 V					1.65	
I_I	V_I = V_{CC} or GND	5.5 V		±0.1			±1	µA
I_{OZ}	V_O = V_{CC} or GND	5.5 V		±0.5			±5	µA
I_{CC}	V_I = V_{CC} or GND, I_O = 0	5.5 V		8			80	µA
C_i	V_I = V_{CC} or GND	5 V		3.5				pF

† Not more than one output should be tested at a time, and the duration of the test should not exceed 10 ms.

switching characteristics over recommended operating free-air temperature range,
V_{CC} = 3.3 V ± 0.3 V (unless otherwise noted) (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	T_A = 25°C MIN	TYP	MAX	MIN	MAX	UNIT
t_{PLH}	A or B	Y	2.5	7.1	9	2.5	10	ns
t_{PHL}			3	7.2	9	3	10.8	
t_{PLH}	Any C	Y	2.3	6.7	8.1	2.3	8.9	ns
t_{PHL}			3	6.8	8.1	3	9.5	
t_{PLH}	OE	Y	2	5.3	6.6	2	7.2	ns
t_{PHL}			2.2	5.6	6.8	2.2	8.3	

TEXAS
INSTRUMENTS

POST OFFICE BOX 655303 ● DALLAS, TEXAS 75265
POST OFFICE BOX 1443 ● HOUSTON, TEXAS 77251–1443

switching characteristics over recommended operating free-air temperature range, V_{CC} = 5 V $\pm$ 0.5 V (unless otherwise noted) (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	T_A = 25°C			MIN	MAX	UNIT
			MIN	TYP	MAX			
t_{PLH}	A or B	Y	2.2	4.5	6.2	2.2	7.4	ns
t_{PHL}			2.5	5.3	7.5	2.5	8.9	
t_{PLH}	Any C	Y	2	4.2	5.7	2	6.6	ns
t_{PHL}			2.5	5.1	6.8	2.5	7.9	
t_{PLH}	$\overline{OE}$	Y	1.7	3.6	5.1	1.7	5.5	ns
t_{PHL}			2.2	4.5	5.9	2.2	7.2	

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

PARAMETER		TEST CONDITIONS	TYP	UNIT
C_{pd}	Power dissipation capacitance	C_L = 50 pF, f = 1 MHz	30	pF

PARAMETER MEASUREMENT INFORMATION

LOAD CIRCUIT

VOLTAGE WAVEFORMS
PROPAGATION DELAY TIMES
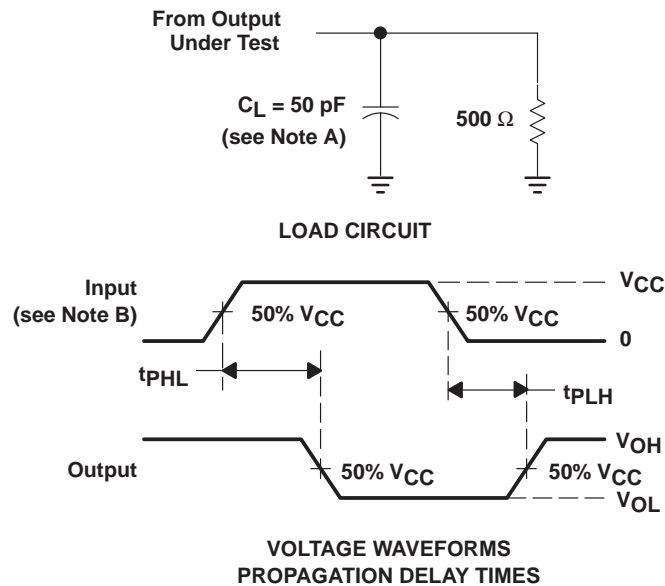
NOTES: A. C_L includes probe and jig capacitance.
       B. Input pulses are supplied by generators having the following characteristics: PRR ≤ 10 MHz, Z_O = 50 Ω, t_r = 3 ns, t_f = 3 ns.
       C. The outputs are measured one at a time with one input transition per measurement.

Figure 1. Load Circuit and Voltage Waveforms

IMPORTANT NOTICE

Texas Instruments and its subsidiaries (TI) reserve the right to make changes to their products or to discontinue any product or service without notice, and advise customers to obtain the latest version of relevant information to verify, before placing orders, that information being relied on is current and complete. All products are sold subject to the terms and conditions of sale supplied at the time of order acknowledgement, including those pertaining to warranty, patent infringement, and limitation of liability.

TI warrants performance of its semiconductor products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are utilized to the extent TI deems necessary to support this warranty. Specific testing of all parameters of each device is not necessarily performed, except those mandated by government requirements.

CERTAIN APPLICATIONS USING SEMICONDUCTOR PRODUCTS MAY INVOLVE POTENTIAL RISKS OF DEATH, PERSONAL INJURY, OR SEVERE PROPERTY OR ENVIRONMENTAL DAMAGE ("CRITICAL APPLICATIONS"). TI SEMICONDUCTOR PRODUCTS ARE NOT DESIGNED, AUTHORIZED, OR WARRANTED TO BE SUITABLE FOR USE IN LIFE-SUPPORT DEVICES OR SYSTEMS OR OTHER CRITICAL APPLICATIONS. INCLUSION OF TI PRODUCTS IN SUCH APPLICATIONS IS UNDERSTOOD TO BE FULLY AT THE CUSTOMER'S RISK.

In order to minimize risks associated with the customer's applications, adequate design and operating safeguards must be provided by the customer to minimize inherent or procedural hazards.

TI assumes no liability for applications assistance or customer product design. TI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right of TI covering or relating to any combination, machine, or process in which such semiconductor products or services might be or are used. TI's publication of information regarding any third party's products or services does not constitute TI's approval, warranty or endorsement thereof.