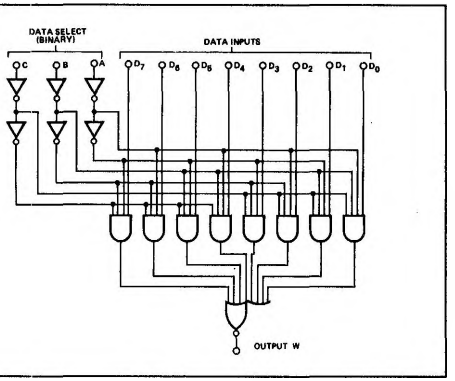
DESCRIPTION

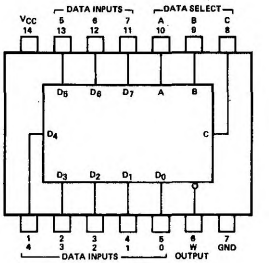
The S54152 is a one-of-eight data selector which performs parallel to serial data conversion. The S54152 is identical to the S54152 with the exclusion of the true output and strobe. It is available in the 14-pin flatpak only.

LOGIC DIAGRAM



PIN CONFIGURATIONS

W PACKAGE



TRUTH TABLE

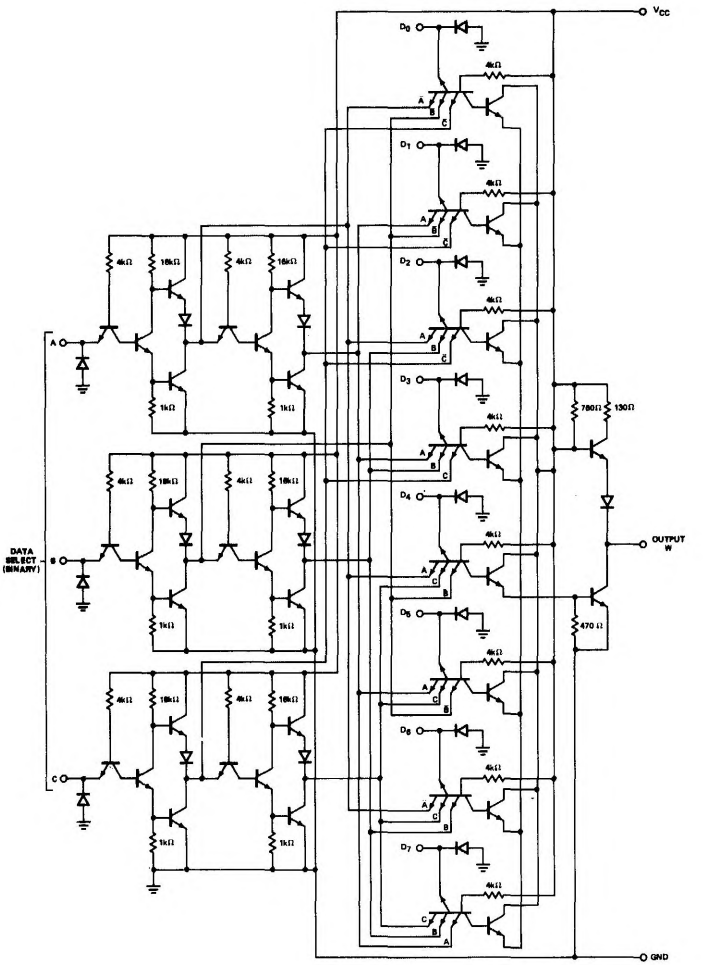
INPUTS												OUTPUTS	
C	B	A	STROBE	D_0	D_1	D_2	D_3	D_4	D_5	D_6	D_7	Y(1)	W
X	X	X	1	X	X	X	X	X	X	X	X	0	1
0	0	0	0	0	X	X	X	X	X	X	X	0	1
0	0	0	0	1	X	X	X	X	X	X	X	1	0
0	0	1	0	X	0	X	X	X	X	X	X	0	1
0	0	1	0	X	1	X	X	X	X	X	X	1	0
0	1	0	0	X	X	0	X	X	X	X	X	0	1
0	1	0	0	X	X	1	X	X	X	X	X	1	0
0	1	1	0	X	X	X	0	X	X	X	X	0	1
0	1	1	0	X	X	X	1	X	X	X	X	1	0
1	0	0	0	X	X	X	X	0	X	X	X	0	1
1	0	0	0	X	X	X	X	1	X	X	X	1	0
1	0	1	0	X	X	X	X	X	0	X	X	0	1
1	0	1	0	X	X	X	X	X	1	X	X	1	0
1	1	0	0	X	X	X	X	X	X	0	X	0	1
1	1	0	0	X	X	X	X	X	X	1	X	1	0
1	1	1	0	X	X	X	X	X	X	X	0	0	1
1	1	1	0	X	X	X	X	X	X	X	1	1	0

When used to indicate an input, X = Irrelevant.

RECOMMENDED OPERATING CONDITIONS

	MIN	NOM	MAX	UNIT
Supply Voltage V_{CC}: S54152 Circuits	4.5	5	5.5	V
N74152 Circuits	4.75	5	5.25	V
Normalized Fan-Out from each Output, N: Logical 0			10	
Logical 1			20	

SCHEMATIC DIAGRAM



Component values shown are nominal.

ELECTRICAL CHARACTERISTICS (over recommended operating free-air temperature range unless otherwise noted)

PARAMETER		TEST CONDITIONS *	MIN	TYP **	MAX	UNIT
$V_{in(1)}$	Input voltage required to ensure logical 1 at any input terminal	V_{CC} = MIN	2			V
$V_{in(0)}$	Input voltage required to ensure logical 0 at any input terminal	V_{CC} = MIN			0.8	V
$V_{out(1)}$	Logical 1 output voltage	V_{CC} = MIN, $V_{in(1)}$ = 2V, $V_{in(0)}$ = 0.8V, I_{load} = -800μA	2.4			V
$V_{out(0)}$	Logical 0 output voltage	V_{CC} = MIN, $V_{in(1)}$ = 2V, $V_{in(0)}$ = 0.8V, I_{sink} = 16mA			0.4	V
$I_{in(1)}$	Logical 1 level input (each input)	V_{CC} = MAX, V_{in} = 2.4V			40	μA
		V_{CC} = MAX, V_{in} = 5.5V			1	mA
$I_{in(0)}$	Logical 0 level input current (each input)	V_{CC} = MAX, V_{in} = 0.4V			-1.6	mA
I_{OS}	Short circuit output current†	V_{CC} = MAX, V_{out} = 0	-20		-55	mA
			-18		-55	mA
I_{CC}	Supply current	V_{CC} = MAX, V_{in} = 4.5V		26	43	mA

SWITCHING CHARACTERISTICS, V_{CC} = 5V, T_A = 25°C, N = 10

PARAMETER	FROM (INPUT)	TO (OUTPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
t_{pd0}	A,B,orC(4 levels)	Y	C_L = 15pF, R_L = 400Ω		20	30	ns
t_{pd1}	A,B,orC(4 levels)	Y			35	52	ns
t_{pd0}	A,B,C,orD(3 levels)	W			22	33	ns
t_{pd1}	A,B,C,orD(3 levels)	W			23	35	ns
t_{pd0}	STROBE	Y			19	30	ns
t_{pd1}	STROBE	Y			35	52	ns
t_{pd0}	STROBE	W			21	30	ns
t_{pd1}	STROBE	W			15.5	24	ns
t_{pd0}	D_0 thru D_7	Y			16	24	ns
t_{pd1}	D_0 thru D_7	Y			19	29	ns
t_{pd0}	E_0 thru E_{15}	W			8.5	14	ns
t_{pd1}	E_0 thru E_{15}	W			13	20	ns

* For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions for the applicable circuit type.

** All typical values are at V_{CC} = 5V, T_A = 25°C.

† Not more than one output should be shorted at a time.