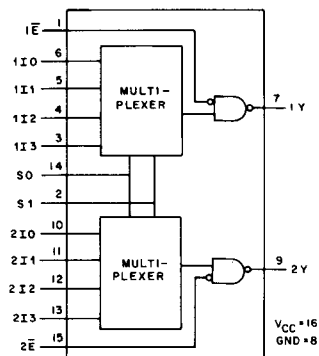


CD54HC153/3A CD54HCT153/3A Dual 4-Input Multiplexer

The RCA-CD54HC153 and CD54HCT153 are dual four-to-one-line selector/multiplexers which select one of four sources for each section by the common select inputs, S0 and S1. When the enable inputs ($\overline{1E}$, $\overline{2E}$) are HIGH, the outputs are in the LOW state.



FUNCTIONAL DIAGRAM

Package Specifications

See Section 11, Fig. 11

Static Electrical Characteristics (Limits with black dots (•) are tested 100%)

CHARACTERISTICS	V _{DD}	TEST CONDITIONS				V _{IN}		LIMITS		UNITS
		HC/HCT				HC	HCT	MIN.	MAX.	
		V _O	I _O	V _{CC} or GND	V _{IL} or V _{IH}	V _{IL} or V _{IH}				
Quiescent Device Current I _{CC}	25°C	6	—	—	6, 0	—	—	—	8•	μA
	-55°C	6	—	—	6, 0	—	—	—	160•	
	+125°C	6	—	—	6, 0	—	—	—	160•	

HCT INPUT LOADING TABLE

INPUT	UNIT LOAD*
DATA	0.45
ENABLE	0.6
SELECT	1.35

The complete static electrical test specification consists of the above by-type static tests combined with the standard static tests in the beginning of this section.

*Unit load is ΔI_{CC} limit specified in Static Characteristics Chart, e.g., 360 μA max. @ 25°C.

Switching Speed (Limits with black dots (•) are tested 100%.)

SWITCHING CHARACTERISTICS (C_L = 50 pF, Input t_r = 6 ns)

CHARACTERISTIC	SYMBOL	TEST CONDITIONS V _{CC} V	LIMITS								UNITS
			25°C				-55°C to +125°C				
			HC		HCT		54HC		54HCT		
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.				
Propagation Delay S to Y	t _{PLH}	2	—	160	—	—	—	240	—	—	ns
	t _{PHL}	4.5	—	32•	—	34•	—	48•	—	51•	
	t _{PHL}	6	—	27	—	—	—	41	—	—	
I to Y	t _{PLH}	2	—	145	—	—	—	220	—	—	ns
		4.5	—	29•	—	24•	—	44•	—	36•	
		6	—	25	—	—	—	38	—	—	
I to Y	t _{PHL}	2	—	145	—	—	—	220	—	—	ns
		4.5	—	29•	—	34•	—	44•	—	51•	
		6	—	25	—	—	—	38	—	—	
\overline{E} to Y	t _{PLH}	2	—	120	—	—	—	180	—	—	ns
		4.5	—	24•	—	27•	—	36•	—	41•	
		6	—	20	—	—	—	31	—	—	
Output Transition Time	t _{TLH} t _{THL}	2	—	75	—	—	—	110	—	—	pF
		4.5	—	15	—	15	—	22	—	22	
		6	—	13	—	—	—	19	—	—	
Input Capacitance	C _i	—	—	10	—	10	—	10	—	10	pF

CD54HC153/3A CD54HCT153/3A

Burn-In Test-Circuit Connections

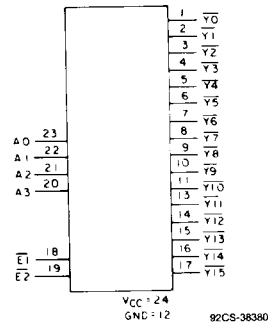
Static	STATIC BURN-IN I			STATIC BURN-IN II		
	OPEN	GROUND	V _{CC} (6V)	OPEN	GROUND	V _{CC} (6V)
CD54HC/HCT153	7,9	1-6,8,10-15	16	7,9	8	1-6,10-16
Dynamic	OPEN	GROUND	1/2 V _{CC} (3V)	V _{CC} (6V)	OSCILLATOR	
CD54HC/HCT153	—	1,3,5,8,11, 13,15	7,9	4,6,10,12, 16	50 kHz	25 kHz

NOTE: Each pin except V_{CC} and Gnd will have a resistor of 2k-47k ohms.

4-to-16-Line Decoder/Demultiplexer

CD54HC154/3A CD54HCT154/3A

The RCA-CD54HC154 and CD54HCT154 are four-to-16-line decoders/demultiplexers with two enable inputs, E1 and E2. A High on either enable input forces the output into the High state. The demultiplexing function is performed by using the four input lines, A0 to A3, to select the output lines Y0 to Y15, and using one enable as the data input while holding the other enable low.



Package Specifications

See Section 11, Fig. 15

FUNCTIONAL DIAGRAM

Static Electrical Characteristics (Limits with black dots (•) are tested 100%)

CHARACTERISTICS		TEST CONDITIONS							LIMITS	UNITS	
		HC/HCT				V _{IN}		MIN.			MAX.
		V _{DD}	V _O	I _O	V _{CC} OR GND	V _{IL} OR V _{IH}	V _{IL} OR V _{IH}				
Quiescent	25°C	6	—	—	6, 0	—	—	—	8•	μA	
Device Current	-55°C	6	—	—	6, 0	—	—	—	160•		
I _{CC}	+125°C	6	—	—	6, 0	—	—	—	160•		

The complete static electrical test specification consists of the above by-type static tests combined with the standard static tests in the beginning of this section.

HCT INPUT LOADING TABLE

INPUT	UNIT LOAD*
A0 — A3	1.4
E1, E2	1.3

*Unit load is ΔI_{CC} limit specified in Static Characteristics Chart, e.g., 360 μA max. @ 25°C.