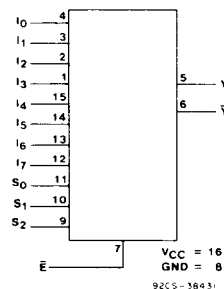


CD54HC151/3A

CD54HCT151/3A

8-Input Multiplexer

The RCA-CD54HC151 and CD54HCT151 are single eight-channel digital multiplexers having three binary control inputs—S0, S1 and S2—and an active low enable (E) input. The three binary signals select one of eight channels. Outputs are both inverting (Y) and non-inverting (Y).



Package Specifications

See Section 11, Fig. 11

FUNCTIONAL DIAGRAM

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

CHARACTERISTICS		TEST CONDITIONS							UNITS	
		HC/HCT				V _{IN}		LIMITS		
						HC V _{IL} or V _{IH}	HCT V _{IL} or V _{IH}			
		V _{DD}	V _O	I _O	V _{CC} or GND			MIN.	MAX.	
Quiescent Device Current I _{CC}	25°C	6	—	—	6, 0	—	—	—	8•	μA
	−55°C	6	—	—	6, 0	—	—	—	160•	
	+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*
Select	1.5
Data	0.45
Enable	0.3

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

CD54HC151/3A

CD54HCT151/3A

Switching Speed

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

SWITCHING CHARACTERISTICS ($C_L = 50$ pF, Input $t_r, t_f = 6$ 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 Any Data Input to Y	t_{PLH} t_{PHL}	2	—	170	—	—	—	255	—	—	ns
		4.5	—	34•	—	38•	—	51•	—	57•	
		6	—	29	—	—	—	43	—	—	
Any Data Input to $\bar{Y}$		2	—	185	—	—	—	280	—	—	
		4.5	—	37	—	36	—	56	—	54	
		6	—	31	—	—	—	48	—	—	
Any Select to Y		2	—	185	—	—	—	280	—	—	
		4.5	—	37	—	41	—	56	—	62	
		6	—	31	—	—	—	48	—	—	
Any Select to $\bar{Y}$		2	—	205	—	—	—	310	—	—	
		4.5	—	41•	—	43•	—	62•	—	65•	
		6	—	35	—	—	—	53	—	—	
Enable to Y		2	—	140	—	—	—	210	—	—	
		4.5	—	28	—	29	—	42	—	44	
		6	—	24	—	—	—	36	—	—	
Enable to $\bar{Y}$		2	—	145	—	—	—	220	—	—	
		4.5	—	29•	—	36•	—	44•	—	54•	
		6	—	25	—	—	—	38	—	—	
Output Transition Time	t_{TLH} t_{THL}	2	—	75	—	—	—	110	—	—	
		4.5	—	15	—	15	—	22	—	22	
		6	—	13	—	—	—	19	—	—	
Input Capacitance	C_i	—	—	10	—	10	—	10	—	10	pF

Burn-In Test-Circuit Connections

(Use Static II for /3A burn-in and Dynamic for Life Test.)

Static	STATIC BURN-IN I			STATIC BURN-IN II		
	OPEN	GROUND	V_{CC} (6V)	OPEN	GROUND	V_{CC} (6V)
CD54HC/HCT151	5,6	1-4,7-15	16	5,6	8	1-4,7,9-16
Dynamic	OPEN	GROUND	$1/2 V_{CC}$ (3V)	V_{CC} (6V)	OSCILLATOR	
					50 kHz	25 kHz
CD54HC/HCT151	1,3,7-9, 12-15	5,6	2,4,16	11	10	—

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