

CD54HC4514/3A

CD54HCT4514/3A

Switching Speed

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

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

CHARACTERISTIC	SYMBOL	V_{CC} V	25° C				-55° C to +125° C				UNITS
			HC		HCT		54HC		54HCT		
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Propagation Delay Select to Outputs		2	—	275	—	—	—	115	—	—	ns
		4.5	—	55•	—	55•	—	83•	—	83•	
		6	—	47	—	—	—	71	—	—	
\overline{LE} to Outputs	t_{PLH} t_{PHL}	2	—	225	—	—	—	340	—	—	
		4.5	—	45•	—	50•	—	68•	—	75•	
		6	—	38	—	—	—	58	—	—	
\overline{E} to Outputs		2	—	175	—	—	—	265	—	—	
		4.5	—	35•	—	40•	—	53•	—	60•	
		6	—	30	—	—	—	45	—	—	
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/HCT4514	4-11,13-20	1-3,12,21-23	24	4-11,13-20	12	1-3,21-24
Dynamic	OPEN	GROUND	$1/2 V_{CC}$ (3V)	V_{CC} (6V)	OSCILLATOR 50 kHz	OSCILLATOR 25 kHz
CD54HC/HCT4514	—	2,3,12	4-11,13-20	21,22,24	1	23

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

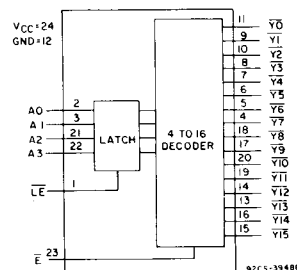
4-to-16-Line Decoder with Input Latches

CD54HC4515/3A

CD54HCT4515/3A

The RCA CD54HC4515 and CD54HCT4515 are high-speed silicon-gate devices consisting of a 4-bit strobed latch and a 4-to-16-line decoder. The selected output is enabled by a low on the enable input (\overline{E}). A high on \overline{E} inhibits selection of any output. Demultiplexing is accomplished by using the \overline{E} input as the data input and the select inputs (A0-A3) as addresses. This \overline{E} input also serves as a chip select when these devices are cascaded.

When Latch Enable (\overline{LE}) is high the output follows changes in the inputs. When \overline{LE} is low the output is isolated from changes in the input and remains at the level (low) it had before the latches were enabled. These devices, enhanced versions of the equivalent CMOS types, can drive 10 LSTTL loads.



Package Specifications

See Section 11, Fig. 15

FUNCTIONAL DIAGRAM

CD54HC4515/3A

CD54HCT4515/3A

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	HC V _{IL} or V _{IH}	HCT 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•			

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	0.15
$\overline{\text{LE}}$	0.85
$\overline{\text{E}}$	0.3

*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, t_f = 6 ns)

CHARACTERISTIC	SYMBOL	V _{CC} V	25°C				-55°C to +125°C				UNITS
			HC		HCT		54HC		54HCT		
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
Propagation Delay Select to Outputs		2	—	275	—	—	—	115	—	—	ns
		4.5	—	55•	—	55•	—	83•	—	83•	
		6	—	47	—	—	—	71	—	—	
$\overline{\text{LE}}$ to Outputs	t _{PLH} t _{PHL}	2	—	225	—	—	—	340	—	—	
		4.5	—	45•	—	50•	—	68•	—	75•	
		6	—	38	—	—	—	58	—	—	
$\overline{\text{E}}$ to Outputs		2	—	175	—	—	—	265	—	—	
		4.5	—	35•	—	40•	—	53•	—	60•	
		6	—	30	—	—	—	45	—	—	
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/HCT4515	4-11,13-20	1-3,12,21-23	24	4-11,13-20	12	1-3,21-24
Dynamic	OPEN	GROUND	1/2 V _{CC} (3V)	V _{CC} (6V)	OSCILLATOR	
	CD54HC/HCT4515	—	2,3,12	4-11,13-20	21,22,24	50 kHz 1

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