CD54HC240/3A
CD54HCT240/3A

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

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

CHARACTERISTIC	SYMBOL	V_{CC} V	25°C HC Min.	25°C HC Max.	25°C HCT Min.	25°C HCT Max.	-55°C to +125°C 54HC Min.	54HC Max.	54HCT Min.	54HCT Max.	UNITS
Propagation Delay Data to Outputs	t_{PLH} t_{PHL}	2	—	100	—	—	—	150	—	—	ns
		4.5	—	20•	—	22•	—	30•	—	33•	
		6	—	17	—	—	—	26	—	—	
Output Enable and Disable Times	t_{PZH} t_{PZL} t_{PHZ} t_{PLZ}	2	—	150	—	—	—	225	—	—	
		4.5	—	30•	—	30•	—	45•	—	45•	
		6	—	26	—	—	—	38	—	—	
Output Transition Time	t_{TLH} t_{THL}	2	—	60	—	—	—	90	—	—	
		4.5	—	12	—	12	—	18	—	18	
		6	—	10	—	—	—	15	—	—	
Input Capacitance	C_I	—	—	10	—	10	—	10	—	10	pF
3-State Output Capacitance	C_O	—	—	20	—	20	—	20	—	20	

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

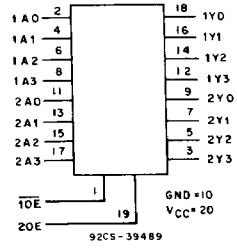
Static	STATIC BURN-IN I OPEN	STATIC BURN-IN I GROUND	STATIC BURN-IN I V_{CC} (6V)	STATIC BURN-IN II OPEN	STATIC BURN-IN II GROUND	STATIC BURN-IN II V_{CC} (6V)
CD54HC/HCT240	3,5,7,9,12, 14,16,18	1,2,4,6,8,10,11,13, 15,17,19	20	3,5,7,9,12, 14,16,18	10	1,2,4,6,8,11,13,15, 17,19,20
Dynamic	**OPEN**	**GROUND**	**1/2 V_{CC} (3V)**	**V_{CC} (6V)**	**OSCILLATOR 50 kHz**	**OSCILLATOR 25 kHz**
CD54HC/HCT240	—	1,10,19	3,5,7,9,12,14, 16,18	20	2,4,6,8,11,13, 15,17	—

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

CD54HC241/3A
CD54HCT241/3A

Octal Buffer/Line Driver, 3-State, Non-Inverting

The RCA CD54HC241 and CD54HCT241 are non-inverting three-state buffers that have one active-high and one active-low output enable.



FUNCTIONAL DIAGRAM

Package Specifications

See Section 11, Fig. 13

CD54HC241/3A
CD54HCT241/3A

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

CHARACTERISTICS		TEST CONDITIONS HC/HCT V_{DD}	V_O	I_O	V_{CC} or GND	V_{IN} HC V_{IL} or V_{IH}	V_{IN} HCT V_{IL} or V_{IH}	LIMITS MIN.	MAX.	UNITS
Output High (Source) Current I_{OH} Min. - TTL Load	25°C	4.5	3.98	—	—	0, 4.5	0, 4.5	-6•	—	mA
	-55°C, +125°C	4.5	3.70	—	—	0, 4.5	0, 4.5	-6•	—	
Output Low (Sink) Current I_{OL} Min. - TTL Load	25°C	4.5	0.26	—	—	0, 4.5	0, 4.5	6•	—	
	-55°C, +125°C	4.5	0.40	—	—	0, 4.5	0, 4.5	6•	—	
High Level Output Voltage V_{OH} - TTL Load	25°C	4.5	—	-6	—	1.35, 3.15	0.8, 2.0	3.98•	—	V
	-55°C, +125°C	4.5	—	-6	—	1.35, 3.15	0.8, 2.0	3.70•	—	
Low Level Output Voltage V_{OL} - TTL Load	25°C	4.5	—	6	—	1.35, 3.15	0.8, 2.0	—	0.26•	
	-55°C, +125°C	4.5	—	6	—	1.35, 3.15	0.8, 2.0	—	0.40•	
Quiescent Device Current I_{CC}	25°C	6	—	—	6, 0	—	—	—	8•	μA
	-55°C, +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*
nA0-A3	0.7
$\overline{1OE}$	0.7
$\overline{2OE}$	1.5

*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 HC Min.	25°C HC Max.	25°C HCT Min.	25°C HCT Max.	-55°C to +125°C 54HC Min.	54HC Max.	54HCT Min.	54HCT Max.	UNITS
Propagation Delay Data to Outputs	t_{PLH}, t_{PHL}	2	—	110	—	—	—	165	—	—	ns
		4.5	—	22•	—	25•	—	33•	—	38•	
		6	—	19	—	—	—	28	—	—	
Output Enable and Disable Times	t_{PZH}, t_{PZL}, t_{PHZ}, t_{PLZ}	2	—	150	—	—	—	225	—	—	
		4.5	—	30•	—	30•	—	45•	—	45•	
		6	—	26	—	—	—	38	—	—	
Output Transition Time	t_{TLH}, t_{THL}	2	—	60	—	—	—	90	—	—	
		4.5	—	12	—	12	—	18	—	18	
		6	—	10	—	—	—	15	—	—	
Input Capacitance	C_I	—	—	10	—	10	—	10	—	10	pF
3-State Output Capacitance	C_O	—	—	20	—	20	—	20	—	20	

CD54HC241/3A
CD54HCT241/3A

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/HCT241	3,5,7,9,12, 14,16,18	1,2,4,6,8,10,11,13, 15,17,19	20	3,5,7,9,12, 14,16,18	10	1,2,4,6,8,11,13,15, 17,19,20
Dynamic	**OPEN**	**GROUND**	**1/2 V_{CC} (3V)**	**V_{CC} (6V)**	**OSCILLATOR 50 kHz**	**OSCILLATOR 25 kHz**
CD54HC/HCT241	—	1,10	3,5,7,9,12,14, 16,18	19,20	2,4,6,8,11, 13,15,17	—

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

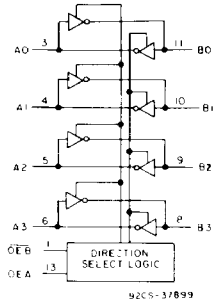
5

Quad Bus Transceiver, 3-State, Inverting

CD54HC242/3A
CD54HCT242/3A

The RCA CD54HC242 and CD54HCT242 are silicon-gate CMOS three-state bidirectional inverting buffers intended for two-way asynchronous communication between data buses. They have high drive current outputs which enable high-speed operation when driving large bus capacitances. These circuits possess the low power dissipation of CMOS circuits, and have speeds comparable to low-power Schottky TTL circuits. They can drive 15 LSTTL loads.

The states of the output enables ($\overline{OEB}$, OEA) determine both the direction of flow (A to B, B to A) and the three-state mode.



FUNCTIONAL DIAGRAM

Package Specifications

See Section 11, Fig. 10

HCT INPUT LOADING TABLE

INPUT	UNIT LOAD*
An, Bn	1.1
OEA, $\overline{OEB}$	0.6

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