

**CD54HC573/3A**  
**CD54HCT373/3A**

T-46-07-11

**Burn-In Test-Circuit Connections**

Static	STATIC BURN-IN I			STATIC BURN-IN II		
	OPEN	GROUND	V <sub>CC</sub> (6V)	OPEN	GROUND	V <sub>CC</sub> (6V)
CD54HC/HCT573	12-19	1-11	20	12-19	10	1-9,11,20
Dynamic	OPEN	GROUND	1/2 V <sub>CC</sub> (3V)	V <sub>CC</sub> (6V)	OSCILLATOR	
CD54HC/HCT573	—	1,10	12-19	20	50 kHz	25 kHz
					11	2-9

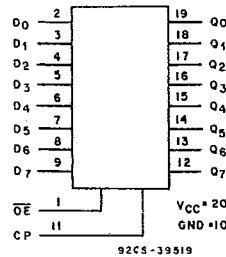
NOTE: Each pin except V<sub>CC</sub> and Gnd will have a resistor of 2k-47k ohms.  
Connect pins marked (\*) without using a resistor.

**Octal D-Type Flip-Flop, 3-State**

**CD54HC574/3A**  
**CD54HCT574/3A**



The RCA CD54HC574 and CD54HCT574 are octal D-type flip-flops with three-state outputs and the capability to drive 15 LSTTL loads. The eight edge-triggered flip-flops enter data into their registers on the LOW to HIGH transition of clock (CP). The Output Enable (OE) controls the three-state outputs and is independent of the register operation. When Output Enable (OE) is HIGH the outputs will be in the high impedance state. The 574 and 374 are identical in function and differ only in their pinout arrangements.



**Package Specifications**

See Section 11, Fig. 13

FUNCTIONAL DIAGRAM

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

CHARACTERISTICS	TEMPERATURE	TEST CONDITIONS							LIMITS	UNITS	
		HC/HCT				V <sub>IN</sub>		MIN.			MAX.
		V <sub>DD</sub>	V <sub>O</sub>	I <sub>O</sub>	V <sub>CC</sub> OR GND	HC V <sub>IL</sub> or V <sub>IH</sub>	HCT V <sub>IL</sub> or V <sub>IH</sub>				
Output High (Source) Current I <sub>OH</sub> Min. - TTL Load	25°C -55°C +125°C	4.5	3.98	—	—	0, 4.5	0, 4.5	-6•	—	mA	
Output Low (Sink) Current I <sub>OL</sub> Min. - TTL Load	25°C -55°C +125°C	4.5	0.26	—	—	0, 4.5	0, 4.5	6•	—		
High Level Output Voltage V <sub>OH</sub> - TTL Load	25°C -55°C +125°C	4.5	—	-6	—	1.35, 3.15	0.8, 2.0	3.98•	—		V
Low Level Output Voltage V <sub>OL</sub> - TTL Load	25°C -55°C +125°C	4.5	—	6	—	1.35, 3.15	0.8, 2.0	—	0.26•		
Quiescent Device Current I <sub>CC</sub>	25°C -55°C +125°C	6	—	—	6, 0	—	—	—	8•	μA	
		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.

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**CD54HCT574/3A**

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**HCT INPUT LOADING TABLE**

INPUT	UNIT LOAD*
D0-D7	0.4
CP	0.75
OE	0.6

\*Unit load is  $\Delta I_{CC}$  limit specified in Static Characteristics Chart, e.g., 360  $\mu$ A 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 Clock to Output	$t_{PLH}$	2	—	165	—	—	—	250	—	—	ns
	$t_{PHL}$	4.5	—	33•	—	33•	—	50•	—	50•	
		6	—	28	—	—	—	43	—	—	
Propagation Delay Output Disable to Q	$t_{PLZ}$	2	—	135	—	—	—	205	—	—	
	$t_{PHZ}$	4.5	—	27•	—	28•	—	41•	—	42•	
		6	—	23	—	—	—	35	—	—	
Propagation Delay Output Enable to Q	$t_{PZL}$	2	—	150	—	—	—	225	—	—	
	$t_{PZH}$	4.5	—	30•	—	30•	—	45•	—	45•	
		6	—	26	—	—	—	38	—	—	
Output Transition Time	$t_{TLH}$	2	—	60	—	—	—	90	—	—	
	$t_{THL}$	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			STATIC BURN-IN II		
	OPEN	GROUND	$V_{CC}$ (6V)	OPEN	GROUND	$V_{CC}$ (6V)
CD54HC/HCT574	12-19	1-11	20	12-19	10	1-9,11,20
Dynamic	OPEN	GROUND	$1/2 V_{CC}$ (3V)	$V_{CC}$ (6V)	OSCILLATOR	
CD54HC/HCT574	—	1,10	12-19	20	50 kHz	25 kHz
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NOTE: Each pin except  $V_{CC}$  and Gnd will have a resistor of 2k-47k ohms.