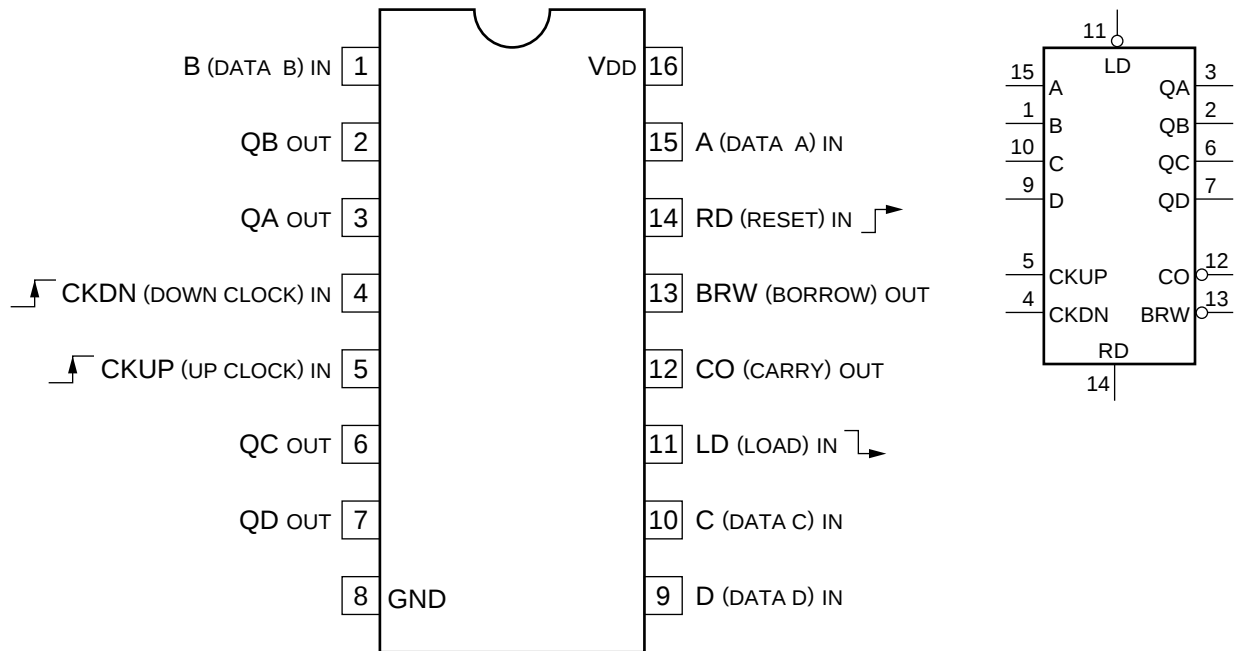


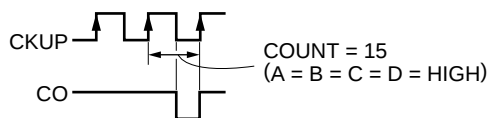
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT UP/DOWN COUNTER

—TOP VIEW—

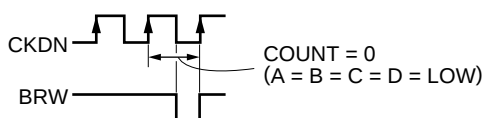


CONTROL INPUT				MODE
RD	LD	CKUP	CKDN	
1	x	x	x	RESET TO ZERO
0	0	x	x	PRESET
0	1		1	UP COUNT
0	1	1		DOWN COUNT
0	1	1	1	NO COUNT

$$CO = \overline{CKUP} \cdot QA \cdot QB \cdot QC \cdot QD$$



$$BRW = \overline{CKDN} \cdot QA \cdot QB \cdot QC \cdot QD$$



COUNT	OUTPUT			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

UP COUNT
DOWN COUNT

0 : LOW LEVEL
1 : HIGH LEVEL
x : DON'T CARE