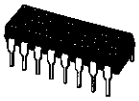
上海双岭电子有限公司

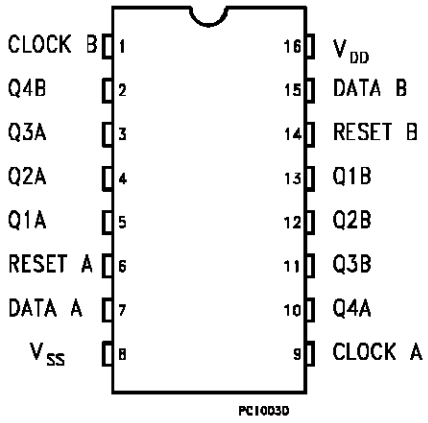
CC4015

DUAL 4-STAGE STATIC SHIFT REGISTER WITH SERIAL INPUT/PARALLEL OUTPUT

- MEDIUM SPEED OPERATION : 12MHz (typ.) CLOCK RATE AT V_{DD} - V_{SS} = 10V
- FULLY STATIC OPERATION
- 8 MASTER-SLAVE FLIP-FLOPS PLUS INPUT AND OUTPUT BUFFERING
- HIGH NOISE IMMUNITY
- QUIESCENT CURRENT SPECIFIED TO 20V FOR HCC DEVICE
- INPUT CURRENT OF 100nA AT 18V AND 25°C FOR HCC DEVICE
- 100% TESTED FOR QUIESCENT CURRENT
- 5V, 10V, AND 15V PARAMETRIC RATINGS
- MEETS ALL REQUIREMENTS OF JEDEC TENTATIVE STANDARD N°. 13A, "STANDARD SPECIFICATIONS FOR DESCRIPTION OF "B" SERIES CMOS DEVICES"



PIN CONNECTIONS

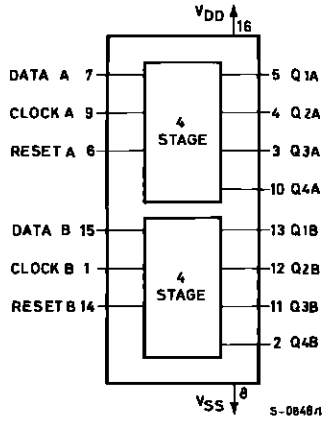


DESCRIPTION

The **CC4015** (extended temperature range) and **CC4015** (intermediate temperature range) are monolithic integrated circuits, available in 16-lead dual in-line plastic or ceramic package and plastic micropackage.

The **CC4015** consists of two identical, independent, 4-stage serial-input/parallel-output registers. Each register has independent CLOCK and RESET inputs as well as a single serial DATA input. "Q" outputs are available from each of the four stages on both registers. All register stages are D-type, master-slave flip-flops. The logic level present at the DATA input is transferred into the first register stage and shifted over one stage at each positive-going clock transition. Resetting of all stages is accomplished by a high level on the reset line. Register expansion to 8 stages using one **CC4015** package, or to more than 8 stages using additional **CC4015** 's is possible.

FUNCTIONAL DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{DD}*	Supply Voltage :	– 0.5 to + 18	V
V_i	Input Voltage	– 0.5 to V_{DD} + 0.5	V
I_I	DC Input Current (any one input)	± 10	mA
P_{tot}	Total Power Dissipation (per package) Dissipation per Output Transistor for T_{op} = Full Package-temperature Range	200 100	mW mW
T_{op}	Operating Temperature :	– 55 to + 125	°C
T_{stg}	Storasge Temperature	– 65 to + 150	°C

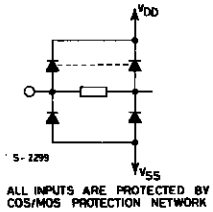
Stresses above those listed under "Absolute Maximum Ratings "may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for external periods may affect device reliability.

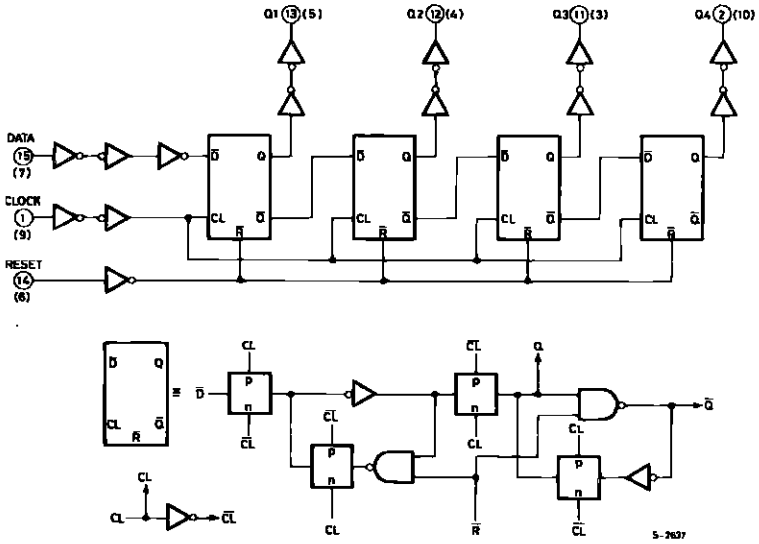
* All voltage values are referred to V_{SS} pin voltage.

RECOMMENDED OPERATING CONDITIONS

Symbol	Parameter	Value	Unit
V_{DD}	Supply Voltage :	3 to 18	V
V_I	Input Voltage	0 to V_{DD}	V
T_{op}	Operating Temperature :	– 55 to + 125	°C

LOGIC DIAGRAMS AND TRUTH TABLE





CL	D	R	Q_1	Q_n
⎍	0	0	0	Q_{n-1}
⎍	1	0	1	Q_{n-1}
⎎	X	0	Q_1	Q_n (no. change)
X	X	1	0	0

STATIC ELECTRICAL CHARACTERISTICS (over recommended operating conditions)

Symbol	Parameter	Test Conditions				Value							Unit
		V_I (V)	V_O (V)	$\|I_O\|$ (µA)	V_{DD} (V)	T_{Low}*		25°C			T_{High}*		
						Min.	Max.	Min.	Typ.	Max.	Min.	Max.	
I_L	Quiescent Current	0/ 5			5		5		0.04	5		150	µA
		0/10			10		10		0.04	10		300	
		0/15			15		20		0.04	20		600	
		0/18			18		100		0.08	100		3000	
V_{OH}	Output High Voltage	0/ 5		< 1	5	4.95		4.95			4.95		V
		0/10		< 1	10	9.95		9.95			9.95		
		0/15		< 1	15	14.95		14.95			14.95		
V_{OL}	Output Low Voltage	5/0		< 1	5		0.05			0.05		0.05	V
		10/0		< 1	10		0.05			0.05		0.05	
		15/0		< 1	15		0.05			0.05		0.05	
V_{IH}	Input High Voltage		0.5/4.5	< 1	5	3.5		3.5			3.5		V
			1/9	< 1	10	7		7			7		
			1.5/13.5	< 1	15	11		11			11		
V_{IL}	Input Low Voltage		4.5/0.5	< 1	5		1.5			1.5		1.5	V
			9/1	< 1	10		3			3		3	
			13.5/1.5	< 1	15		4			4		4	
I_{OH}	Output Drive Current	0/ 5	2.5		5	– 2		– 1.6	– 3.2		– 1.15		mA
		0/ 5	4.6		5	– 0.64		– 0.51	– 1		– 0.36		
		0/10	9.5		10	– 1.6		– 1.3	– 2.6		– 0.9		
		0/15	13.5		15	– 4.2		– 3.4	– 6.8		– 2.4		
I_{OL}	Output Sink Current	0/ 5	0.4		5	0.64		0.51	1		0.36		mA
		0/10	0.5		10	1.6		1.3	2.6		0.9		
		0/15	1.5		15	4.2		3.4	6.8		2.4		
I_{IH}, I_{IL}	Input Leakage Current	0/18	Any Input		18		± 0.1		$\pm 10^{-5}$	± 0.1		± 1	µA
C_I	Input Capacitance		Any Input						5	7.5			pF