

SCL4029B

PRESETTABLE UP/DOWN COUNTER

STATIC CHARACTERISTICS: ($V_{SS} = 0V$)

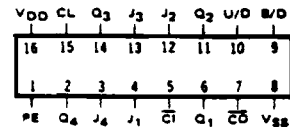
PARAMETER	CONDITIONS	V_{DD} (Vdc)	T_{LOW}^{**}		+25°C			T_{HIGH}^{**}		UNIT
			MIN	MAX	MIN	TYP	MAX	MIN	MAX	
QUIESCENT DEVICE CURRENT I_{DD}	$V_{IN} = V_{SS}$ OR V_{DD}	5		5		0.05	5		150	μA_{dc}
		10		10		0.1	10		300	
		15		20		0.2	20		600	

Note: * T_{LOW} = -55°C for C / H devices, -40°C for E / S devices, ** T_{HIGH} = +125°C for C / H devices, +85°C for E / S devices.

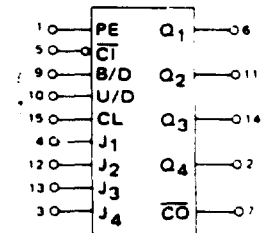
DYNAMIC CHARACTERISTICS: ($C_L = 50pF, T_A = 25°C$)

PARAMETER	V_{DD} Vdc	MINIMUM	TYPICAL	MAXIMUM	UNIT
PROPAGATION DELAY TIME t_{PLH}, t_{PHL} (CLOCK TO Q)	5		250	500	ns
	10		120	240	
	15		90	180	
PROPAGATION DELAY TIME t_{PLH}, t_{PHL} (CLOCK TO CARRY OUT)	5		280	560	ns
	10		130	260	
	15		95	190	
PROPAGATION DELAY TIME t_{PLH}, t_{PHL} (CARRY IN TO CARRY OUT)	5		170	340	ns
	10		70	140	
	15		50	100	
OUTPUT TRANSITION TIME t_{TLH}, t_{THL}	5		100	200	ns
	10		50	100	
	15		40	80	
CLOCK PULSE WIDTH MINIMUM PW_{CL}	5		170	340	ns
	10		85	170	
	15		70	140	
CLOCK FREQUENCY MAXIMUM f_{CL}	5	2	4		MHz
	10	4	8		
	15	5.5	11		
CLOCK RISE & FALL TIME MAXIMUM t_{rCL}, t_{fCL}	5	15			μs
	10	15			
	15	15			
SETUP TIME MINIMUM (CARRY IN) t_{set}	5		150	300	ns
	10		65	130	
	15		50	100	
SETUP TIME MINIMUM (UP/DOWN, B/D) t_{set}	5		325	650	ns
	10		115	230	
	15		85	170	

CONNECT DIAGRAM



BLOCK DIAGRAM



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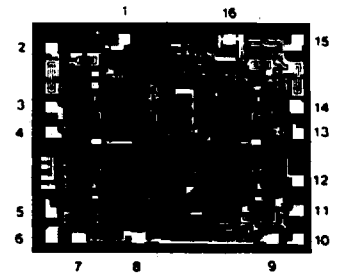
PRESETTABLE UP/DOWN COUNTER

DYNAMIC CHARACTERISTICS: ($C_L = 50\text{pF}$, $T_A = 25^\circ\text{C}$)

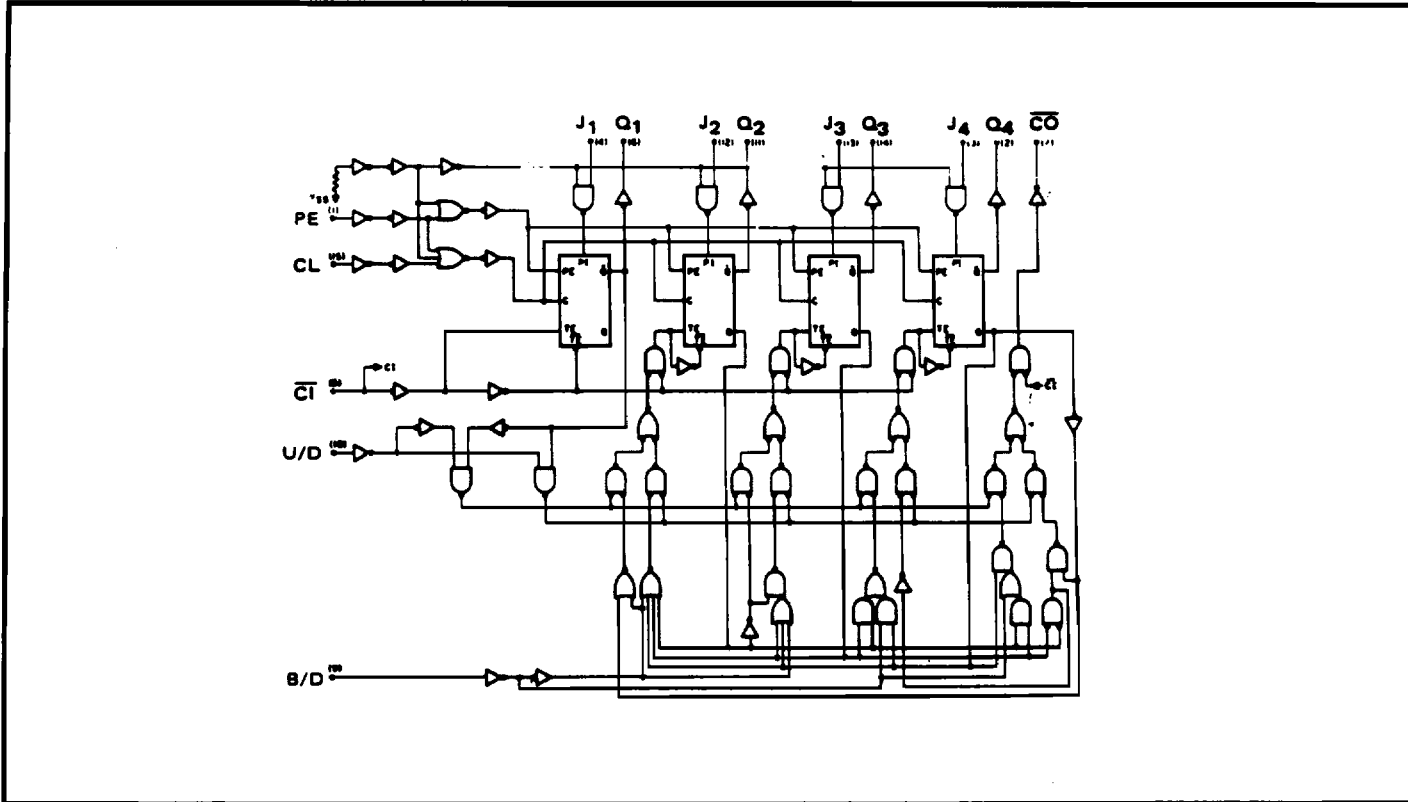
PARAMETER	V_{DD} V_{dc}	MINIMUM	TYPICAL	MAXIMUM	UNIT
RESET PROPAGATION	5		360	720	ns
DELAY TIME t_{PLH} t_{PHL}	10		140	280	
(PRESET ENABLE TO Q)	15		110	220	
PROPAGATION	5		410	820	ns
DELAY TIME t_{PLH} t_{PHL}	10		165	330	
(PRESET ENABLE TO CARRY OUT)	15		130	260	
PRESET ENABLE PULSE	5		170	340	ns
WIDTH MINIMUM PW_{PE}	10		85	170	
	15		70	140	
PRESET ENABLE	5		325	650	ns
REMOVAL TIME t_{rem}	10		110	220	
	15		90	180	

DIE DRAWING

SCL4029B
86 x 72 mils



LOGIC DIAGRAM



Note: Refer to "SCL4000B SERIES FAMILY SPECIFICATIONS" for remaining Dynamic & Static Characteristics, and, for recommended and maximum operating conditions.