

**SCL4029B**

PRESETTABLE UP/DOWN COUNTER

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

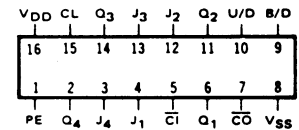
PARAMETER	CONDITIONS	$V_{DD}$ (Vdc)	$T_{LOW}^{*}$		+25°C		$T_{HIGH}^{**}$		UNIT
			MIN	MAX	MIN	MAX	MIN	MAX	
QUIESCENT DEVICE CURRENT $I_{DD}$	$V_{IN} = V_{SS}$ OR $V_{DD}$	5		5		0.05	5		150
		10		10		0.1	10		300
		15		20		0.2	20		600

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.

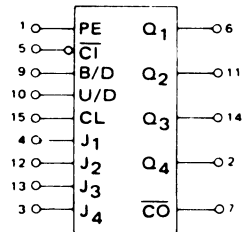
**DYNAMIC CHARACTERISTICS: (  $C_L = 50pF, T_A = 25°C$  )**

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			$\mu s$
	10	15			
	15	15			
SETUP TIME MINIMUM $t_{set}$ (CARRY IN)	5		150	300	ns
	10		65	130	
	15		50	100	
SETUP TIME MINIMUM $t_{set}$ (UP/DOWN, B/D)	5		325	650	ns
	10		115	230	
	15		85	170	

**CONNECT DIAGRAM**



**BLOCK DIAGRAM**



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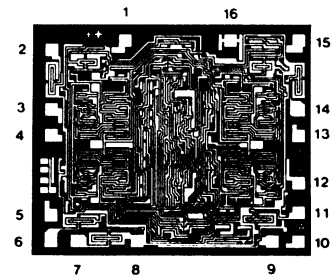
PRESETTABLE UP/DOWN COUNTER

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

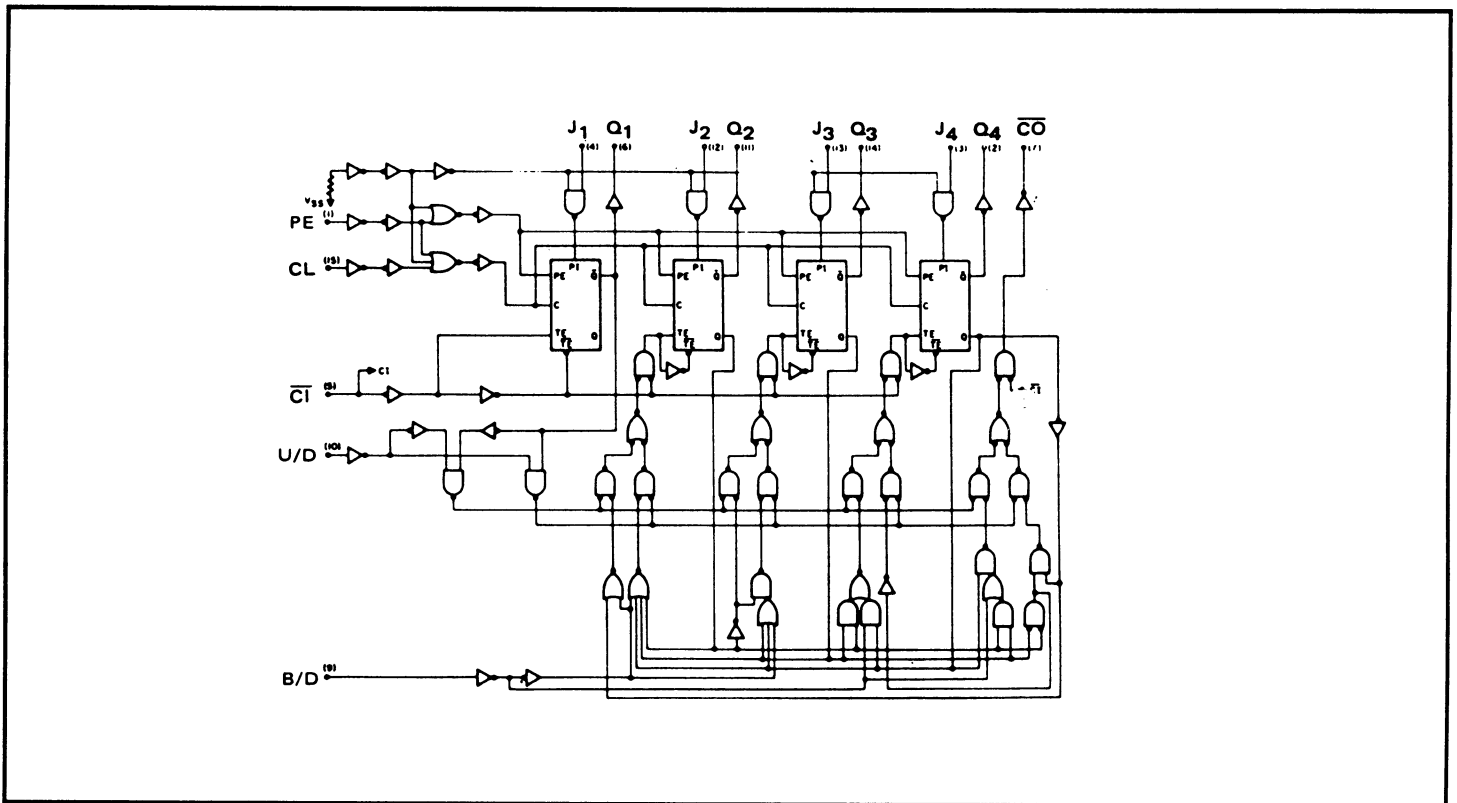
PARAMETER	$V_{DD}$ $V_{dc}$	MINIMUM	TYPICAL	MAXIMUM	UNIT
RESET PROPAGATION	5		360	720	ns
DELAY TIME $t_{PLH}$ $t_{PHL}$ (PRESET ENABLE TO Q)	10		140	280	
	15		110	220	
PROPAGATION	5		410	820	ns
DELAY TIME $t_{PLH}$ $t_{PHL}$ (PRESET ENABLE TO CARRY OUT)	10		165	330	
	15		130	260	
PRESET ENABLE PULSE	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.