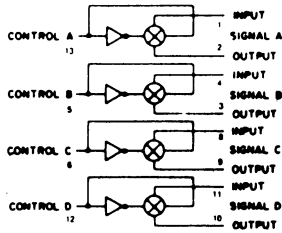
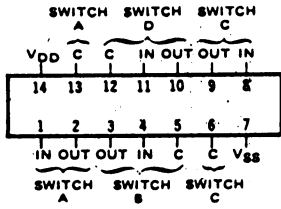


SCL4016B

QUAD ANALOG SWITCH



TYPICAL ON-RESISTANCE CHARACTERISTICS (VARIATION FROM  $R_{ON} = 0 \text{ Ohm}$ )

CHARACTERISTIC	SUPPLY CONDITIONS		LOAD CONDITIONS					
	$V_{DD}$	$V_{SS}$	$R_L = 1 \text{ k Ohm}$		$R_L = 10 \text{ k Ohm}$		$R_L = 100 \text{ k Ohm}$	
			Ohm	$V_{IS}$	Ohm	$V_{IS}$	Ohm	$V_{IS}$
$R_{ON}$	15	0	200	15	200	15	180	15
$R_{ON} \text{ (MAX)}$	15	0	300	11	300	9.3	320	9.2
$R_{ON}$	10	0	280	10	250	10	240	10
$R_{ON} \text{ (MAX)}$	10	0	500	7.4	580	5.6	610	5.5
$R_{ON}$	5	0	860	5	470	5	450	5
$R_{ON} \text{ (MAX)}$	5	0	1.7k	4.2	7k	2.9	33k	2.7
$R_{ON}$	7.5	-7.5	200	7.5	200	7.5	180	7.5
$R_{ON} \text{ (MAX)}$	7.5	-7.5	280	$\pm 0.25$	280	$\pm 25$	400	$\pm 0.25$
$R_{ON}$	5	-5	260	5	250	5	240	5
$R_{ON} \text{ (MAX)}$	5	-5	310	-5	250	-5	240	-5
$R_{ON}$	2.5	-2.5	590	2.5	450	2.5	490	2.5
$R_{ON} \text{ (MAX)}$	2.5	-2.5	720	-2.5	520	-2.5	520	-2.5
$R_{ON} \text{ (MAX)}$	2.5	-2.5	232k	$\pm 0.25$	300k	$\pm 0.25$	870k	$\pm 0.25$

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

PARAMETER	CONDITIONS	$V_{SS}$ (Vdc)	$V_{DD}$ (Vdc)	$T_{LOW}^*$		+25°C			$T_{HIGH}^{**}$		UNIT
				MIN	MAX	MIN	TYP	MAX	MIN	MAX	
QUIESCENT DEVICE CURRENT $I_{DD}$	$V_{IN} = V_{SS} \text{ OR } V_{DD}$	0	5		0.05		0.0005	0.05		1.5	$\mu\text{A}$
		0	10		0.1		0.001	0.1		3.0	
		0	15		0.2		0.002	0.2		6.0	
INPUT HIGH VOLTAGE MINIMUM $V_{IH}$ (CONTROL INPUT)	NOTE	0	5		3.5		1.5	3.5		3.5	Vdc
		0	10		7		1.5	7		7	
		0	15		11		1.5	11		11	
INPUT LOW VOLTAGE MAXIMUM $V_{IL}$ (CONTROL INPUT)	$V_{IS} = V_{SS}$ $V_{OS} = V_{DD}$ $I_{OS} = 10\mu\text{A}$	0	5	0.9		0.7	1.5		0.4		Vdc
		0	10	0.9		0.7	1.5		0.4		
		0	15	0.9		0.7	1.5		0.4		
SWITCH INPUT/OUTPUT LEAKAGE $I_{off}$ (SWITCH OFF)	$V_C = V_{SS}$ $V_{IS} = V_{DD}$	0	15		$\pm 0.1$		$\pm 10^{-5}$	$\pm 0.1$		$\pm 1$	$\mu\text{A}$
ON RESISTANCE $R_{ON}$	$V_{IS} = (V_{DD} - V_{SS}) + 2$ $V_C = V_{DD}$ $R_L = 10\text{ k Ohm}$	0	15		360		200	400		520	Ohm
		0	10		600		250	660		840	
ON RESISTANCE MATCH DELTA $R_{ON}$ (SAME PACKAGE)	$V_C = V_{DD} R_L = 10\text{ k Ohm}$ $V_{IS} = -7.5\text{ V TO } 7.5 \text{ V}$ $V_{IS} = -5\text{ V TO } 5\text{ V}$	-7.5	7.5				10				Ohm
		-5	5				15				

Note:  $*T_{LOW} = -55^\circ\text{C}$  for C / H devices,  $-40^\circ\text{C}$  for E / S devices,  $**T_{HIGH} = +125^\circ\text{C}$  for C and H devices,  $+85^\circ\text{C}$  for E / S devices.

Conditions for measuring  $V_{IH}$  :

$V_{DD}$	$V_{OS}$	$V_{IS}$	$I_{OS} T_{LOW}$	$I_{OS} 25^\circ\text{C}$	$I_{OS} T_{HIGH}$	UNITS
5	5	4.6	-0.25	-0.20	-0.14	mA
10	10	9.5	-0.62	-0.50	-0.35	mA
15	15	13.5	-1.8	-1.5	-1.1	mA

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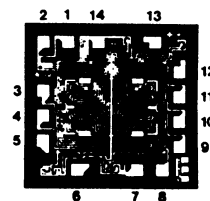
**SCL4016B**

QUAD ANALOG SWITCH

DYNAMIC CHARACTERISTICS: ( CL = 50pF, TA = 25°C )

PARAMETER	CONDITIONS	V <sub>SS</sub> (Vdc)	V <sub>DD</sub> (Vdc)	MINIMUM	TYPICAL	MAXIMUM	UNIT	
<b>SIGNAL INPUTS (V<sub>IS</sub>) &amp; OUTPUTS (V<sub>OS</sub>)</b>								
PROPAGATION DELAY TIME (SIGNAL IN TO OUT)	V <sub>C</sub> = V <sub>DD</sub> V <sub>IS</sub> = SQ. WAVE R <sub>L</sub> = 10k Ohm	0	5		20	40	ns	
		0	10		10	20		
		0	15		7.5	15		
BANDWIDTH (-3dB) (SINEWAVE) BW	R <sub>L</sub> = 1k Ohm	-5	+5		54		MHz	
	R <sub>L</sub> = 10k Ohm				40			
	R <sub>L</sub> = 100k Ohm				38			
	R <sub>L</sub> = 1M Ohm				37			
INSERTION LOSS = 20 log <sub>10</sub> V <sub>IS</sub> + V <sub>OS</sub> V <sub>C</sub> = V <sub>DD</sub> V <sub>IS</sub> = 5V <sub>PP</sub> CENTERED @ 0.0Vdc	R <sub>L</sub> = 1k Ohm	-5	+5		2.3		dB	
	R <sub>L</sub> = 10k Ohm				0.2			
	R <sub>L</sub> = 100k Ohm				0.1			
	R <sub>L</sub> = 1M Ohm				0.05			
SIGNAL DISTORTION (SINEWAVE) V <sub>C</sub> = V <sub>DD</sub> V <sub>IS</sub> = 5V <sub>PP</sub> CENTERED @ 0.0Vdc	f <sub>IS</sub> = 1.0kHz R <sub>L</sub> = 10k Ohm	-5	+5		0.4		%	
FEEDTHROUGH (-50dB) V <sub>C</sub> = V <sub>DD</sub> V <sub>IS</sub> = 5V <sub>PP</sub> CENTERED @ 0.0Vdc	R <sub>L</sub> = 1k Ohm	-5	+5		1250		kHz	
	R <sub>L</sub> = 10k Ohm				140			
	R <sub>L</sub> = 100k Ohm				18			
	R <sub>L</sub> = 1M Ohm				2			
CROSSTALK (-50dB) (BETWEEN 2 SWITCHES) V <sub>C</sub> (A) = V <sub>DD</sub> V <sub>C</sub> (B) = V <sub>SS</sub>	V <sub>IS</sub> = 5V <sub>PP</sub> CENTERED @ 0.0Vdc	-5	+5		0.9		MHz	
CAPACITANCE	V <sub>C</sub> = V <sub>SS</sub>	-5	+5				pF	
	INPUT C <sub>IS</sub>							4
	OUTPUT C <sub>OS</sub>							4
FEEDTHROUGH C <sub>IOS</sub>	0.2							

DIE DRAWING  
SCL4016B  
54 x 51 mils



**CONTROL INPUT (V<sub>C</sub>)**

PROPAGATION DELAY TIME (TURN ON)	V <sub>SS</sub> < V <sub>IS</sub> < V <sub>DD</sub> R <sub>L</sub> = 10k Ohm	0	5		40	80	ns
		0	10		20	40	
		0	15		15	30	
INPUT FREQUENCY MAXIMUM f <sub>C</sub>	V <sub>SS</sub> < V <sub>IS</sub> < V <sub>DD</sub> R <sub>L</sub> = 1.0k Ohm	0	5		5		MHz
		0	10		10		
		0	15		12		
CROSSTALK (TO SIGNAL PORT)	V <sub>C</sub> = SQ. WAVE R <sub>L</sub> = 10k Ohm	0	5		30		mV
		0	10		50		
		0	15		100		

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