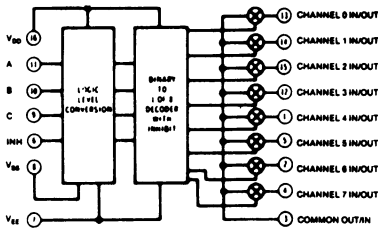


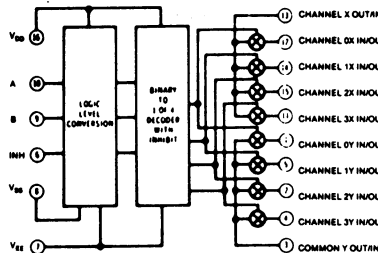
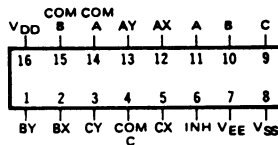
**SCL4051B**

SINGLE 8 CHANNEL MULTIPLEXER/DEMULTIPLEXER



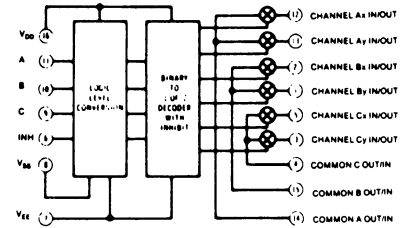
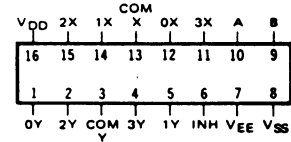
**SCL4052B**

DIFFERENTIAL 4 CHANNEL MULTIPLEXER/DEMULTIPLEXER



**SCL4053B**

TRIPLE 4 CHANNEL MULTIPLEXER/DEMULTIPLEXER



**STATIC CHARACTERISTICS: ( V<sub>SS</sub> = 0 V )**

PARAMETER	CONDITIONS	V <sub>SS</sub> (Vdc)	V <sub>DD</sub> (Vdc)	V <sub>EE</sub> (Vdc)	T <sub>LOW</sub> **		+25°C		T <sub>HIGH</sub> **		UNIT		
					MIN	MAX	MIN	MAX	MIN	MAX			
QUIESCENT DEVICE CURRENT I <sub>DD</sub>	V <sub>IN</sub> = V <sub>SS</sub> OR V <sub>DD</sub>	0	5	0		5		0.05	5		150	μA <sub>dc</sub>	
		0	10	0		10		0.1	10		300		
			5	-5									
		0	15	0		29		0.2	20		600		
			7.5	-7.5									
INPUT HIGH VOLTAGE MINIMUM V <sub>IH</sub> (CONTROL/INHIBIT INPUT)	V <sub>IS</sub> = V <sub>EE</sub> V <sub>OS</sub> = V <sub>DD</sub> I <sub>OS</sub> = 10μA	0	5	0		3.5		2.75	3.5		3.5	Vdc	
		0	10	0		7		5.5	7		7		
		0	15	0		11		8.25	11		11		
INPUT LOW VOLTAGE MAXIMUM V <sub>IL</sub> (CONTROL/INHIBIT INPUT)	V <sub>IS</sub> = V <sub>EE</sub> V <sub>OS</sub> = V <sub>DD</sub> I <sub>OS</sub> = 10μA	0	5	0	1.5		1.5	2.25		1.5		Vdc	
		0	10	0	3		3	4.5		3			
		0	15	0	4		4	6.75		4			
SWITCH INPUT/OUTPUT LEAKAGE I <sub>off</sub> ANY CHANNEL OFF ALL CHANNELS OFF V <sub>IS</sub> = ±7.5Vdc Inh = 7.5 Vdc	V <sub>IN</sub> = V <sub>SS</sub> OR V <sub>DD</sub> V <sub>IS</sub> = ±7.5Vdc	0	7.5	-7.5		±100		±0.01	±100		±1000	nA <sub>dc</sub>	
						±400		±0.08	±400		±1000		
						±200		±0.04	±200		±1000		
						±100		±0.02	±100		±1000		
ON RESISTANCE R <sub>ON</sub>	V <sub>IS</sub> = V <sub>SS</sub> OR V <sub>DD</sub> V <sub>EE</sub> ≤ V <sub>IS</sub> ≤ V <sub>DD</sub> R <sub>L</sub> = 10kΩ	-7.5	7.5	-7.5		220		125	280		400	Ω	
		0	15	0									
		-5	5	-5		310		180	400		590		
		0	10	0									
		-2.5	2.5	-2.5		2000		470	2500		3500		
ON RESISTANCE MATCH DELTA R <sub>ON</sub> (SAME PACKAGE)	V <sub>IS</sub> = V <sub>SS</sub> OR V <sub>DD</sub> V <sub>EE</sub> ≤ V <sub>IS</sub> ≤ V <sub>DD</sub> R <sub>L</sub> = 10kΩ	-7.5	7.5	-7.5				5				Ω	
		0	15	0									
		-5	10	-5				10					
		0	10	0									
		-2.5	2.5	-2.5				50					

Note: \*T<sub>LOW</sub> = -55°C for C / H devices, -40°C for E / S devices, \*\*T<sub>HIGH</sub> = +125°C for C and H devices, +85°C for E / S devices.

**SCL4051B**

SINGLE 8 CHANNEL MULTIPLEXER/DEMULTIPLEXER

**SCL4052B**

DIFFERENTIAL 4 CHANNEL MULTIPLEXER/DEMULTIPLEXER

**SCL4053B**

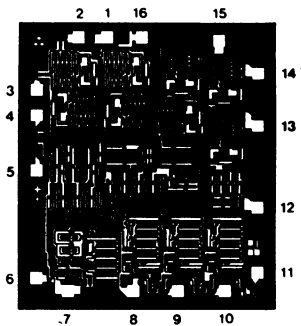
TRIPLE 4 CHANNEL MULTIPLEXER/DEMULTIPLEXER

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

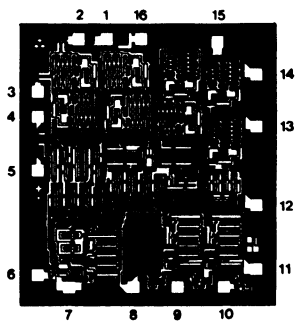
PARAMETER	CONDITIONS	V <sub>SS</sub> (Vdc)	V <sub>DD</sub> (Vdc)	V <sub>EE</sub> (Vdc)	MINIMUM	TYPICAL	MAXIMUM	UNIT
PROPAGATION DELAY TIME (SIGNAL IN TO OUT)	$V_C = V_{DD}$ $R_L = 10\text{k}\Omega$	0	5	0		30	60	ns
	$V_{IS} = \text{SQ. WAVE}$	0	10	0		15	30	
	$V_{IN} = V_{SS}$ or $V_{DD}$	0	15	0		12.5	25	
BANDWIDTH (-3dB) (SINEWAVE) BW	$R_L = 1\text{k}\Omega$	0	5	-5		54		MHz
	$R_L = 10\text{k}\Omega$				40			
	$R_L = 100\text{k}\Omega$				38			
	$R_L = 1\text{M}\Omega$				37			
INSERTION LOSS $= 20 \log_{10} \frac{V_{OS}}{V_{IS}} + V_{IS}$	$R_L = 1\text{k}\Omega$	0	5	-5		2.3		dB
	$R_L = 10\text{k}\Omega$				0.2			
	$R_L = 100\text{k}\Omega$				0.1			
	$R_L = 1\text{M}\Omega$				0.05			
SIGNAL DISTORTION (SINEWAVE)	$V_{IN} = V_{SS}$ or $V_{DD}$ $f_{IS} = 1.0\text{kHz}$	-7.5	7.5	-7.5		0.1		%
	$R_L = 10\text{k}\Omega$	-5	5	-5		0.2		
	CENTERED @ 0.0Vdc	-2.5	2.5	-2.5		1		
FEEDTHROUGH (-50dB)	$R_L = 1\text{k}\Omega$	0	5	-5		1250		kHz
	$R_L = 10\text{k}\Omega$				140			
	$R_L = 100\text{k}\Omega$				18			
	$R_L = 1\text{M}\Omega$				2			
CROSSTALK (-50dB) (BETWEEN 2 SWITCHES)	$V_{IN} = V_{SS}$ or $V_{DD}$ $R_L = 1\text{k}\Omega$	0	5	-5		1		MHz
CAPACITANCE	INPUT $C_{IS}$	0	5	-5		5		pF
	COMMON $C_{OS}$ SCL4051B	0	5	-5		30		
	COMMON $C_{OS}$ SCL4052B				18			
	COMMON $C_{OS}$ SCL4053B				10			
	FEEDTHROUGH $C_{IOS}$	0	5	-5		0.2		
CONTROL INPUT PROPAGATION DELAY TIME (TURN ON) $T_{PC}$	$V_{IN} = V_{SS}$	0	7.5	-7.5		160	320	ns
	$V_{EE} \leq V_{IS} \leq V_{DD}$	0	15	0		120	240	
	$R_L = 10\text{k}\Omega$	0	5	-5		225	450	
		0	10	0		160	320	
		-2.5	2.5	-2.5		400	800	
		0	5	0		360	720	
INHIBIT INPUT PROPAGATION DELAY TIME (TURN ON) $T_{PLH}, T_{PHL}$	$V_{IN} = V_{SS}$ or $V_{DD}$	0	7.5	-7.5		160	320	ns
	$V_{IS} = V_{DD}$	0	15	0		120	240	
	$R_L = 10\text{k}\Omega$	0	5	-5		200	400	
		0	10	0		160	320	
		-2.5	2.5	-2.5		400	800	
		0	5	0		360	720	
INHIBIT RECOVERY TIME $t_{rel}$	$V_{IN} = V_{SS}$ or $V_{DD}$	0	7.5	-7.5		150	300	ns
	$V_{EE} \leq V_{IS} \leq V_{DD}$	0	15	0		80	160	
	$R_L = 10\text{k}\Omega$	0	5	-5		200	400	
		0	10	0		105	210	
		-2.5	2.5	-2.5		300	600	
		0	5	0		225	450	

DIE DRAWINGS

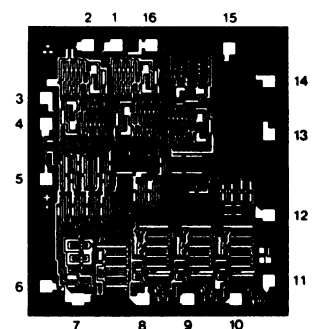
SCL4051B  
81 x 89 mils



SCL4052B  
81 x 89 mils



SCL4053B  
81 x 89 mils



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