

MN4519B / MN4519BS

Quad 2-Input Multiplexers

■ Description

The MN4519B/S have following functions in one package.

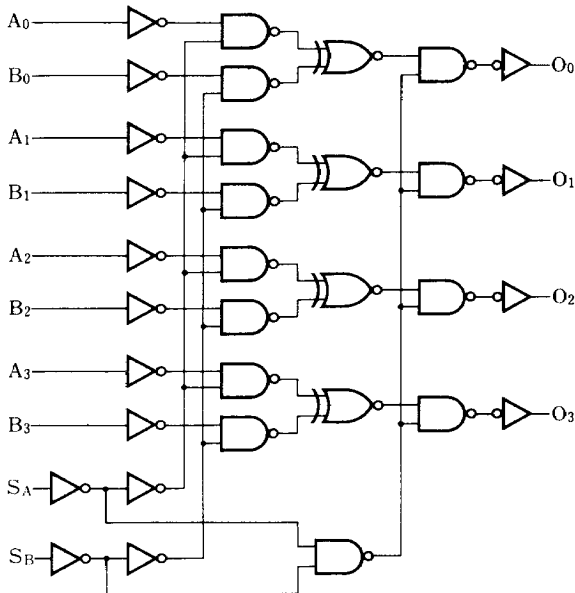
- * 4-Bit AND/OR selector
- * Quad 2-input data selector
- * Quad Exclusive-NOR gate

■ Truth Table

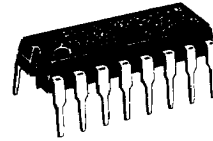
Input				Output
S _A	S _B	A _n	B _n	O _n
L	L	X	X	L
H	L	A _n	X	A _n
L	H	X	B _n	B _n
H	H	L	L	H
H	H	H	L	L
H	H	L	H	L
H	H	H	H	H

Note) X : don't care

■ Logic Diagram



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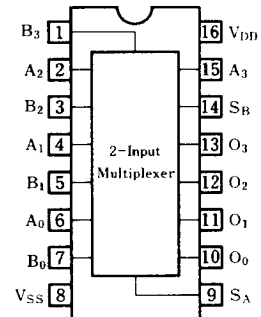
16-Pin • Plastic DIL Package

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16-Pin • Panafiat Package (SO-16D)

Pin Configuration



■ Maximum Ratings (Ta=25°C)

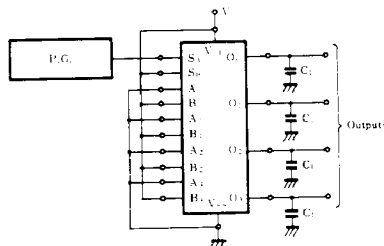
Item	Symbol	Ratings	Unit
Supply Voltage	V _{DD}	-0.5~+18	V
Input Voltage	V _I	-0.5~V _{DD} +0.5*	V
Output Voltage	V _O	-0.5~V _{DD} +0.5*	V
Peak Input - Output Current	±I _I	max. 10	mA
Power Dissipation (per package)	P _{DI}	max. 400	mW
		Decrease up to 200mW rating at 8mW/°C	
Power Dissipation (per output terminal)	P _{DO}	max. 100	mW
Operating Ambient Temperature	T _{opr}	-40~+85	°C
Storage Temperature	T _{stg}	-65~+150	°C

* V_{DD} + 0.5V should be under 18V

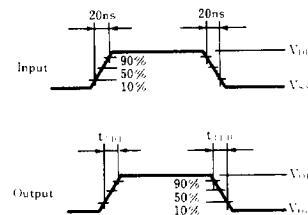
■ DC Characteristics (V_{SS}=0V)

Item	V _{DD} V	Symbol	Conditions	Ta=-40°C		Ta=25°C		Ta=85°C		Unit
				min.	max.	min.	max.	min.	max.	
Quiescent Power Supply Current	5	I _{DD}	V _I =V _{SS} or V _{DD}	—	20	—	20	—	150	μA
	10			—	40	—	40	—	300	
	15			—	80	—	80	—	600	
Output Voltage Low Level	5	V _{OL}	V _I =V _{SS} or V _{DD} I _O < 1μA	—	0.05	—	0.05	—	0.05	V
	10			—	0.05	—	0.05	—	0.05	
	15			—	0.05	—	0.05	—	0.05	
Output Voltage High Level	5	V _{OH}	V _I =V _{SS} or V _{DD} I _O < 1μA	4.95	—	4.95	—	4.95	—	V
	10			9.95	—	9.95	—	9.95	—	
	15			14.95	—	14.95	—	14.95	—	
Input Voltage Low Level	5	V _{IL}	I _O < 1μA V _O =0.5V or 4.5V	—	1.5	—	1.5	—	1.5	V
	10			—	3	—	3	—	3	
	15			—	4	—	4	—	4	
Input Voltage High Level	5	V _{IH}	I _O < 1μA V _O =0.5V or 4.5V	3.5	—	3.5	—	3.5	—	V
	10			7	—	7	—	7	—	
	15			11	—	11	—	11	—	
Output Current Low Level	5	I _{OL}	V _O =0.4V, V _I =0 or 5V	0.52	—	0.44	—	0.36	—	mA
	10			1.3	—	1.1	—	0.9	—	
	15			3.6	—	3	—	2.4	—	
Output Current High Level	5	-I _{OH}	V _O =4.6V, V _I =0 or 5V	0.52	—	0.44	—	0.36	—	mA
	10			1.3	—	1.1	—	0.9	—	
	15			3.6	—	3	—	2.4	—	
Output Current High Level	5	-I _{OH}	V _O =2.5V, V _I =0 or 5V	1.7	—	1.4	—	1.1	—	mA
Input Leakage Current	15	±I _I	V _I =0 or 15V	—	0.3	—	0.3	—	1	μA

1. Switching Time Test Circuit



2. Waveforms



■ Switching Characteristics ($T_a = 25^\circ\text{C}$, $V_{SS} = 0\text{V}$, $C_L = 50\text{pF}$)

Item	V_{DD} (V)	Symbol	min.	typ.	max.	Unit
Output Rise Time	5	t_{TLH}	—	60	180	ns
	10		—	30	90	
	15		—	20	60	
Output Fall Time	5	t_{THL}	—	60	180	ns
	10		—	30	90	
	15		—	20	60	
Propagation Delay Time An, Bn→On (H→L)	5	t_{PHL}	—	100	300	ns
	10		—	45	135	
	15		—	35	105	
Propagation Delay Time An, Bn→On (L→H)	5	t_{PLH}	—	90	270	ns
	10		—	40	120	
	15		—	30	90	
Propagation Delay Time SA, SB→On (H→L)	5	t_{PHL}	—	95	285	ns
	10		—	40	120	
	15		—	30	90	
Propagation Delay Time SA, SB→On (L→H)	5	t_{PLH}	—	85	255	ns
	10		—	40	120	
	15		—	30	90	
Input Capacitance		C_I	—	—	7.5	pF