

DUAL 4-CHANNEL MULTIPLEXER

■ GENERAL DESCRIPTION

The NJU4052B is a dual 4-channel multiplexer with two binary control inputs and an inhibit input.

The two binary control input signals select 1 of 4 pairs of channels to be turned on and connect them to the two outputs.

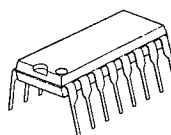
The operating voltage is as wide as 3 to 18V and the quiescent current is as low as 5 μ A max. (at $V_{DD}=5V$).

It is equivalent to RCA CD4052B and Motorola MC14052B.

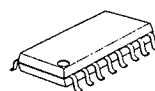
■ FEATURES

- High ON/OFF Output Voltage Ratio --- 65dB Typ.
($R_L=10k\Omega$)
- Low Quiescent Current --- 5 μ A Typ. at $V_{DD}=5V$
- Low Crosstalk between channels --- 80dB Typ.
- Wide Operating Voltage Range. --- 3 ~ 18V
- Linearity in the transfer characteristics.
 $\Delta R_{ON} < 60\Omega$ ($V_{IN}=V_{DD} \sim V_{EE}$, $V_{DD}=15V$)
- Package Outline --- DIP/DMP/SSOP 16
- C-MOS Technology

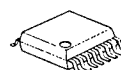
■ PACKAGE OUTLINE



NJU4052BD



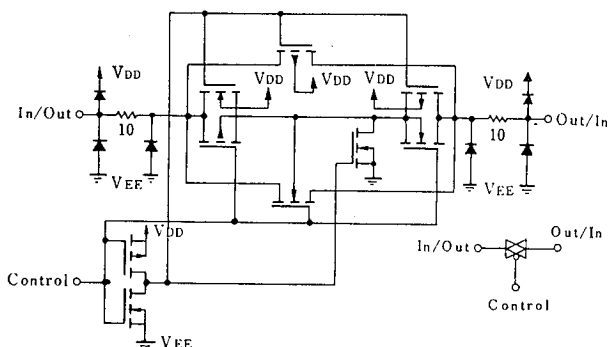
NJU4052BM



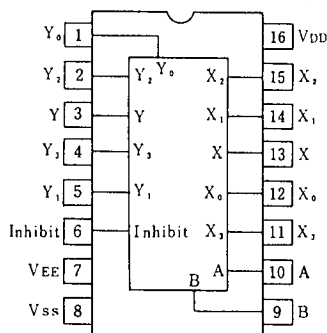
NJU4052BV

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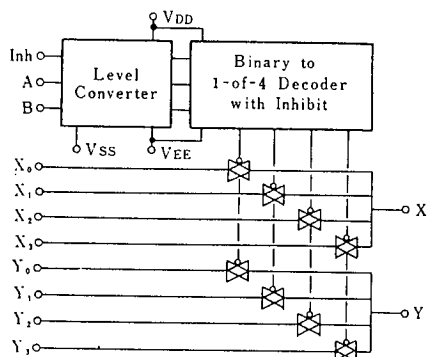
■ BLOCK DIAGRAM



■ PIN CONFIGURATION



■ EQUIVALENT CIRCUIT



■ TRUTH TABLE

INH	B	A	On Switch	
0	0	0	Y_0	X_0
0	0	1	Y_1	X_1
0	1	0	Y_2	X_2
0	1	1	Y_3	X_3
1	x	x	None	

x: Don't Care

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

P A R A M E T E R	S Y M B O L	R A T I N G S	U N I T
Supply Voltage	$V_{DD} - V_{EE}$	- 0.5 ~ + 20	V
Input Voltage(Control Signal)	V_{IN}	$V_{SS}-0.5 \sim V_{DD}+0.5$	V
Input Voltage(Analog Signal)	V_{SIG}	$V_{EE}-0.5 \sim V_{DD}+0.5$	V
Input Current	I_{IN}	± 10	mA
Output Current	I_{OUT}	± 10	mA
Power Dissipation	P_D	500 (DIP) 200 (DMP) 300 (SSOP)	mW
Operating Temperature Range	T_{opr}	- 40 ~ + 85	°C
Storage Temperature Range	T_{stg}	- 65 ~ + 150	°C

■ ELECTRICAL CHARACTERISTICS

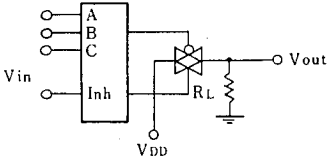
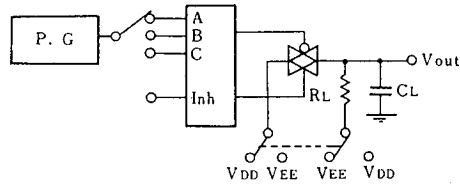
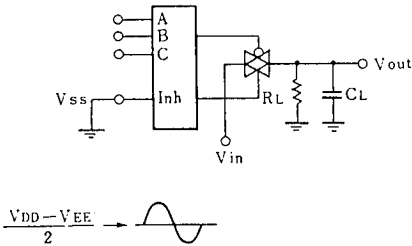
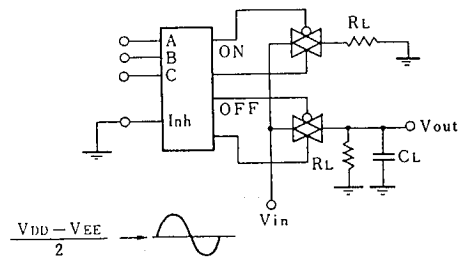
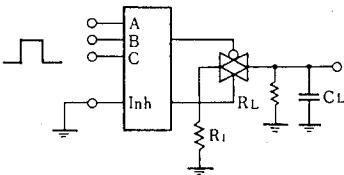
1. DC Characteristics

($V_{CC}=0V$)

SWITCHING CHARACTERISTICS

(Ta=25°C, CL=50pF)

PARAMETER		SYMBOL	CONDITIONS	V _{DD} (V)	MIN	TYP	MAX	UNIT
Propagation Delay Time	SW Input to Output	t _{PLH}	R _L =10kΩ	5	15	45	ns	
				10	8	30		
				15	5	20		
	CONT Input to Output	t _{PHL}		5	15	45	ns	
				10	8	30		
				15	5	20		
	t _{PHL}	5	450	1000				
		10	200	500				
		15	150	400				
	t _{PZH}	5	450	1000				
		10	200	500				
		15	150	400				
Output Enable Time	t _{PHZ}	R _L =10kΩ	5	600	1400	ns		
			10	250	700			
Output Disable Time	t _{PLZ}		15	200	500	ns		
			5	600	1400			
Sine-Wave Distortion			R _L =10kΩ, f=1kHz, V _{IS} =5V _{P-P}	10	0.05		%	
Feedthrough (all-ch. off)			R _L =1kΩ, 20log ₁₀ V _{os} /V _{IS} =-50dB	10	4.5		MHz	
Crosstalk	SW A to B		R _L =1kΩ, V _{IS} =1/2(V _{DD} -V _{SS}) _{P-P}	10	3.0		MHz	
	Control-Out		R _I =1kΩ, R _L =10kΩ, tr=tf=20ns CONTROL/INHIBIT	10	30		mV	

MEASUREMENT CIRCUITS
1. Noise Margin

2. Propagation Delay

3. Feedthrough

4. Crosstalk (Switch A and B)

5. Crosstalk (Control and Out)


MEMO

[CAUTION]

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