

C-MOS QUAD SPST ANALOG SWITCH

■ GENERAL DESCRIPTION

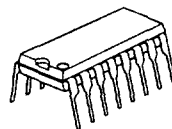
The NJU201A is a quad break-before-make SPST analog switch protected up to 44V operating voltage.

All switches are controlled by TTL or C-MOS compatible input.

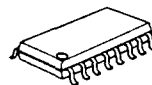
The low on-state resistance is about half compare with the NJU7301.

The NJU201A is functionally and pin-to-pin compatible with SILICONIX DG201A.

■ PACKAGE OUTLINE



NJU201AD

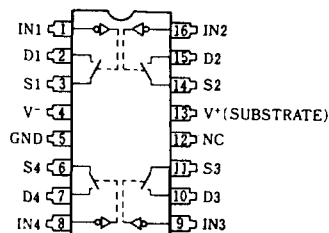


NJU201AM

■ FEATURES

- High Break Down Voltage -- 44V
- Low On-state Resistance
- Package Outline -- DIP/DMP 16
- C-MOS Technology

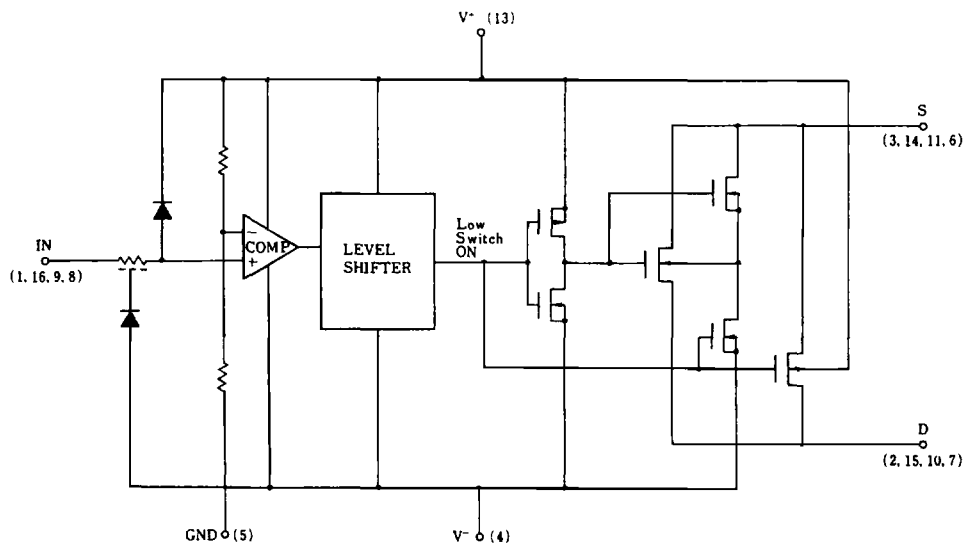
■ PIN CONFIGURATION



■ TRUTH TABLE

Logic (In)	Switch
0	ON
1	OFF

■ EQUIVALENT CIRCUIT



* Logic input threshold voltage V_{TH} is about $V^+ \times 0.128(V)$.
When the designing, enough margin is required.

■ TERMINAL DESCRIPTION

No.	SYMBOL	F U N C T I O N	No.	SYMBOL	F U N C T I O N
1	IN1	Control Signal Input	9	IN3	Control Signal Input
2	D1	Input/Output 1	10	D3	Input/Output 3
3	S1		11	S3	
4	V ⁻	Negative (V ⁻) Power Supply	12	NC	Non Connection
5	GND	Ground	13	V ⁺	Positive (V ⁺) Power Supply
6	S4	Input/Output 4	14	S2	Input/Output 2
7	D4		15	D2	
8	IN4	Control Signal Input	16	IN2	Control Signal Input

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

P A R A M E T E R	SYMBOL	R A T I N G S	UNIT
Supply Voltage	V ⁺ - V ⁻	44	V
	V ⁺ - GND	19	
	GND - V ⁻	25	
Input Voltage	V _I , V _S , V _D	V ⁻ -0.5 ~ V ⁺ +0.5 *	V
Input Current	I _I	30	mA
	I _S , I _D Continuous	20	
	Peak Value (PW=1ms, Duty0.1)	70	
Power Dissipation	P _D	500 (DIP)/ 200 (DMP)	mW
Operating Temperature Range	T _{opr}	0 ~ + 70	°C
Storage Temperature Range	T _{stg}	- 65 ~ + 125	°C

* V⁺+0.5V must be 44V or less.

ELECTRICAL CHARACTERISTICS (DC CHARACTERISTICS)

($V^+=15V$, $V^-=-15V$, $GND=0V$)

PARAMETER	SYMBOL	CONDITIONS		TYP	MAX				UNIT
				25℃	0℃	25℃	70℃		
Analog Signal Range	V _{ANALOG}			±15		±15	±15	V	
On-state Resistance	R _{ON}	V _I N=0.8V	V _D =10V	50	100	100	125	Ω	
		I _S =-1mA	V _D =-10V	50	100	100	125		
Source-off Leakage Current	I _S (off)	V _I =2.4V	V _S =14V, V _D =-14V	0.01		5	100	nA	
			V _S =-14V, V _D =14V	-0.02		- 5	-100		
Drain-off Leakage Current	I _D (off)	V _I =2.4V	V _D =14V, V _S =-14V	0.01		5	100	nA	
			V _D =-14V, V _S =14V	-0.02		- 5	-100		
Drain-on Leakage Current	I _D (on)	V _I =0.8V	V _D =V _S =14V	0.1		5	200	nA	
			V _D =V _S =-14V	-0.15		- 5	-200		
Input Current	I _{IH}	V _I =2.4V	-0.0004			- 1	- 10	μA	
		V _I =15V	0.003			1	10		
	I _{IL}	V _I =0V	-0.0004			- 1	- 10		
Quiescent Current	I ⁺	V _I =0 or 2.4V		0.9		2		mA	
	I ⁻			-0.3		- 1			

SWITCHING CHARACTERISTICS

($V^+=15V$, $V^-=-15V$, $GND=0V$)

PARAMETER	SYMBOL	CONDITIONS		TYP	MAX				UNIT
				25°C	0°C	25°C	70°C		
Turn-on Time	t _{on}	R _L =1kΩ, C _L =35pF		480		600		ns	
Turn-off Time	t _{off}			370		450			
Charge Injection	Q	C _L =1000pF, V _{GEN} =0V, R _{GEN} =0Ω		20				pC	
Source-Off Capacit.	C _S (off)	f=100kHz	V _S =0V, V _I =5V	5				pF	
Drain-Off Capacit.	C _D (off)		V _D =0V, V _I =5V	5					
Channel-On Capacitance	C _D (on) +C _S (on)		V _D =V _S =0V, V _I =0V	16					
Off Isolation	OIRR	V _S =2V _{P-P} , f=100kHz, R _L =75Ω		70				dB	
Channel-to-channel Crosstalk	CCRR			90					