

AN5013K

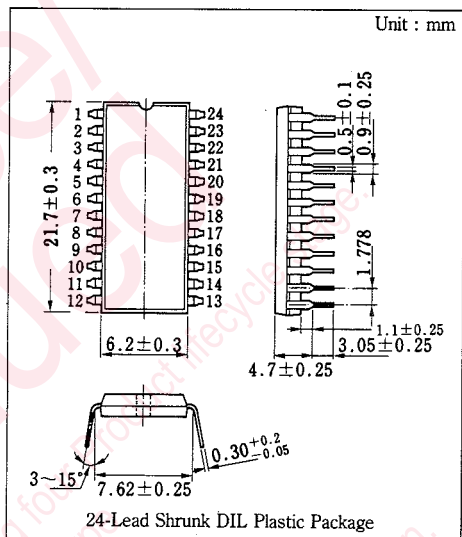
TV Electronic Channel Selection Circuit

Outline

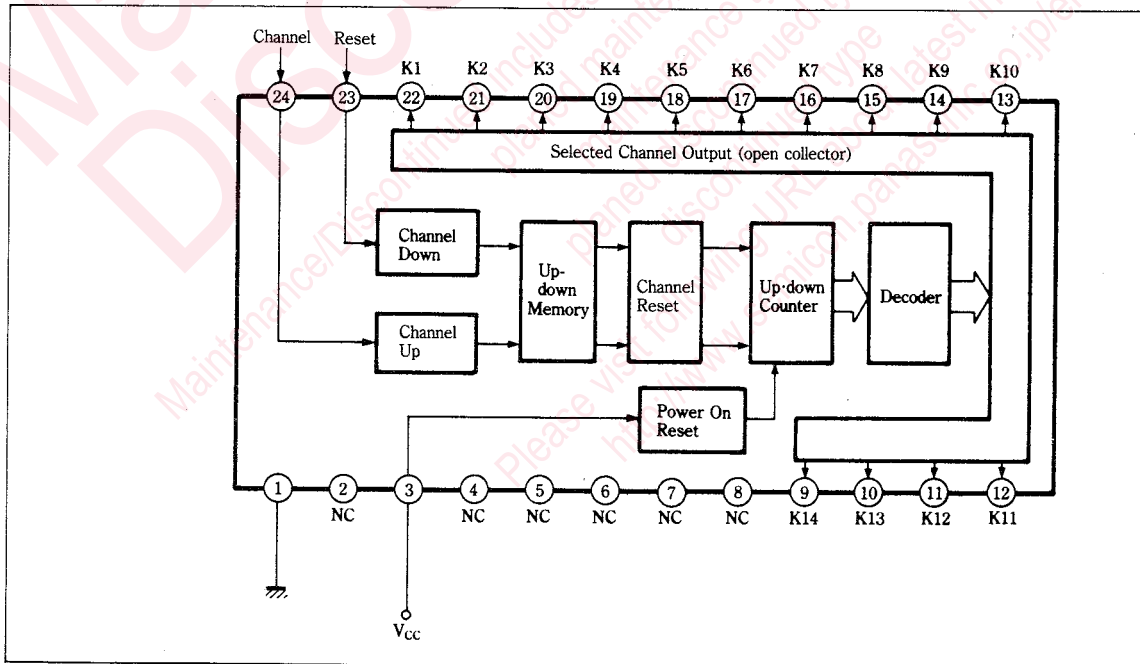
The AN5013K is an integrated circuit designed for electronic tuner by the preset volume method.

Features

- Can drive LED directly ($V_{sat}=75mV$ typ., $I_k=15mA$)
- Capable of tuning 14 channels
- Breakdown voltage of output terminal : 50V
- Low power consumption ($V_{cc}=5V$, $I_{cc}=13mA$ typ.)



Block Diagram



■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	GND	13	Selection Output (K10)
2	NC	14	Selection Output (K9)
3	Supply Voltage (V _{cc})	15	Selection Output (K8)
4	NC	16	Selection Output (K7)
5	NC	17	Selection Output (K6)
6	NC	18	Selection Output (K5)
7	NC	19	Selection Output (K4)
8	NC	20	Selection Output (K3)
9	Selection Output (K14)	21	Selection Output (K2)
10	Selection Output (K13)	22	Selection Output (K1)
11	Selection Output (K12)	23	Channel Down (Ch.D)
12	Selection Output (K11)	24	Channel Up (Ch.U)

■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V _{cc}	6	V
Terminal Voltage	V _{9~22-1}	0 ~ 50	V
	V _{23,24-1}	0 ~ V _{cc}	V
Supply Current	I _{cc}	22	mA
Terminal Current	I _{9~22}	0 ~ 30	mA
Power Dissipation	P _D	150	mW
Operating Ambient Temperature	T _{pot}	-20 ~ +70	°C
Storage Temperature	T _{stg}	-55 ~ +150	°C

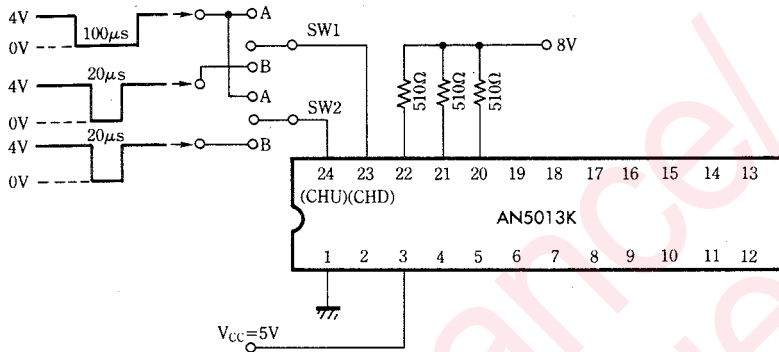
■ Electrical Characteristics (Ta=25°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Supply Current	I _{tot} *		V _{cc} =5V	7.0	13.0	18.0	mA
Tuning Output Saturation Voltage	V _{OL(K)} *		V _{cc} =4V I _{OL} =15mA			150	mV
Tuning Output Leak Current	I _{OH(K)} *		V _{cc} =4V V _{OH} =50V			5	μA
CH.UP/DOWN Input Current	I _{IH(CH)} *		V _{cc} =5V V _{23,24-1} =4V	50		450	μA
CH.UP/DOWN Leak Current	I _{IL(CH)} *		V _{cc} =5V V _{IL} =0V	- 5			μA
CH.UP/DOWN Pulse Width	I _I	1	V _{cc} =5V			20	μs
Initializing Pulse Width	I ₂	1	V _{cc} =5V			100	μs

Test Conditions

Item	Symbol	Test Pin No.	Pin No.																								Note		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
Supply Current	I _{tot}	I ₃	0V	5V																						5V	5V		
Tuning Output Saturation Voltage	V _{OL(K)}	V ₂₂	0V	5V																						3.3kΩ	t ₀	t ₀	For K:1ch
Tuning Output Leak Current	I _{OH(K)}	I ₂₂	0V	5V																						100kΩ	t ₀	t ₀	For K:1ch
CH.UP/DOWN Input Current	I _{IH(CH)}	I _{23,24}	0V	5V																							4V	4V	
CH.UP/DOWN Leak Current	I _{IL(CH)}	V _{23,24-1}	0V	5V																							1kΩ	1kΩ	
																										0V	0V		

Test Circuit 1 (I_1, I_2)



①SW1 and SW2 at the side A are initialized in a pulse of $100 \mu s$.

(“Initialize” in this case denotes that 1 channel is output when CHU and CHD become Low level at the same time.)

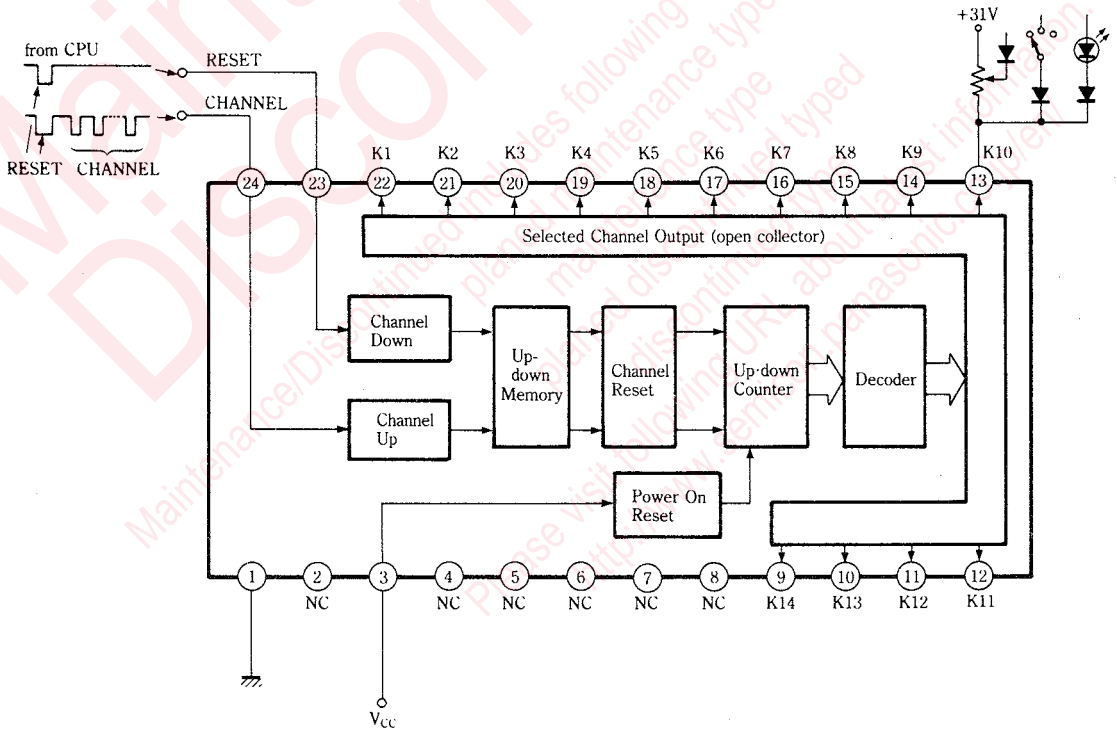
②SW1 at the side B is in CHD operation in a pulse of $30 \mu s$.

(“CHD operation” in this case denotes that a channel is Down when CHD becomes Low level.)

③SW2 at the side B is in CHU operation in a pulse of $20 \mu s$.

(“CHU operation” in this case denotes that a channel is Up when CHU becomes Low level.)

Application Circuit



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