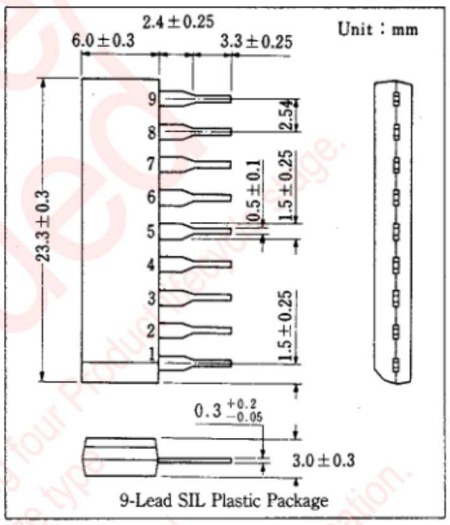
AN5070, AN5071, AN5072

TV Tuner Band Switch Circuits 31V Voltage (Regulator Built-in)

■ Outline

The AN5070, the AN5071 and the AN5072 are integrated circuits incorporating TV tuner band switch circuits and 31 V power supply circuit



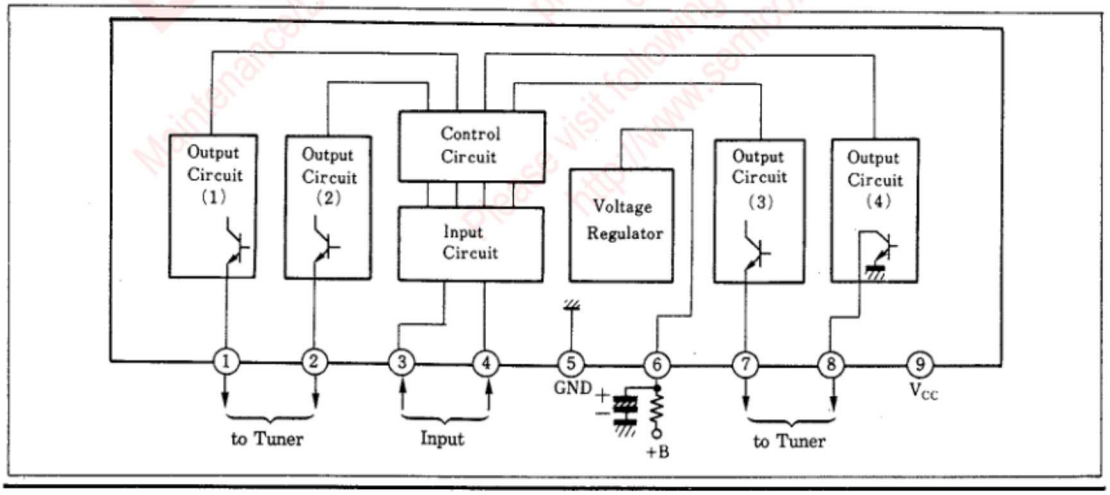
■ Features

- Tuner band switch circuit with 31 V voltage regulator
- Usable for every tuner by suitable output combination

■ Pin

Pin No.	Pin Name
1	Output (1)
2	Output (2)
3	Input (1)
4	Input (2)
5	GND
6	31.5V Supply Voltage
7	Output (3)
8	Output (4)
9	V_{CC}

■ Block Diagram



■ Absolute Maximum Ratings (Ta=25℃)

Item	Symbol	Rating	Unit
Supply Voltage	V_{CC}	+18	V
Supply Current	I_6	+14	mA
Power Dissipation	P_D	620	mW
Operating Ambient Temperature	T_{opr}	−20～+70	℃
Storage Temperature	T_{stg}	−55～+150	℃

■ Electrical Characteristics (Ta=25℃)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Input Threshold Voltage	V_t	1	V_{CC}=12V	1.5		2.5	V
Input Threshold Current	I_t	2	V_{CC}=12V	100		500	μA
Output Saturation Voltage	$V_{CE(sat)}$	3	V_{CC}=12V, I_O=−60mA		0.3	0.8	V
Pin ⑧ Output Saturation Voltage	$V_{CE(sat)}$	3	V_{CC}=12V, I_8=20mA		0.2	0.5	V
Voltage Regulator	V_{6-5}	4	V_{CC}=12V, I_6=10mA	29.5	31.7	33.5	V
Voltage Regulator with Ambient Temperature	V_{6-5}/Ta	4	T_a=−20～60℃	−1.0	0	1.0	mV/℃
Voltage Regulator Voltage for Drift	ΔV_{6-5}	4	As per condition after 5 sec elapsed with SW ON			±50	mV

■ Input/Output Related (Logic Table)

● AN5070

Input		Output				Remarks (Tuning Status)
Pin③	Pin④	Pin①	Pin②	Pin⑦	Pin⑧	
L	L	V_{CC}	open	open	L	UHF
H	L	open	V_{CC}	open	open	VHF−L
L	H	open	open	V_{CC}	L	VHF−H
H	H	open	open	V_{CC}	open	−

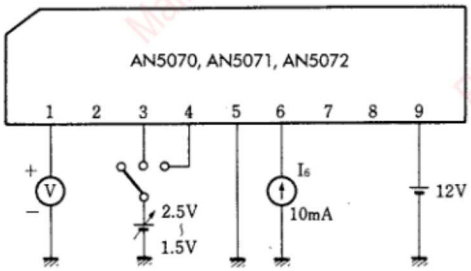
● AN5071

Input		Output				Remarks (Tuning Status)
Pin③	Pin④	Pin①	Pin②	Pin⑦	Pin⑧	
L	L	V_{CC}	open	open	L	UHF
H	L	open	V_{CC}	open	open	VHF−L
L	H	open	open	V_{CC}	L	VHF−H
H	H	open	open	open	open	−

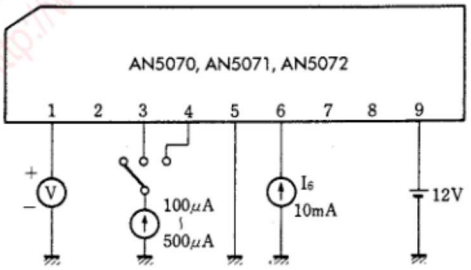
● AN5072

Input		Output				Remarks (Tuning Status)
Pin③	Pin④	Pin①	Pin②	Pin⑦	Pin⑧	
L	H	V_{CC}	open	open	L	UHF
H	H	open	V_{CC}	open	open	VHF−L
L	L	open	open	V_{CC}	L	VHF−H
H	L	open	open	V_{CC}	open	−

Test Circuit 1 (V_t)

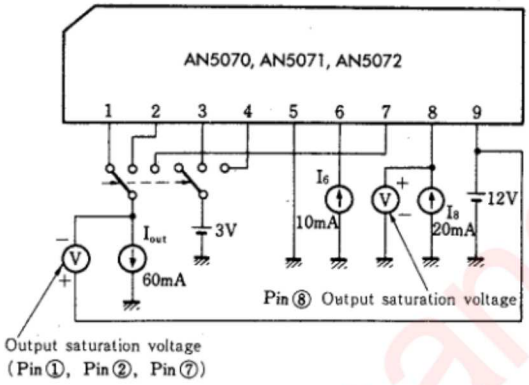


Test Circuit 2 (I_t)

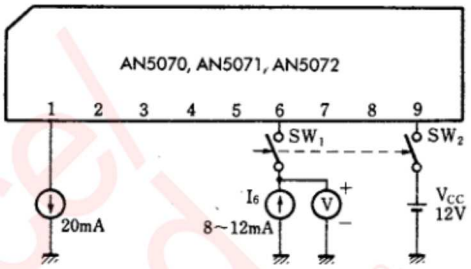


Measure the voltage when Pin ① is changed from V_{CC} to Open (No Connection).

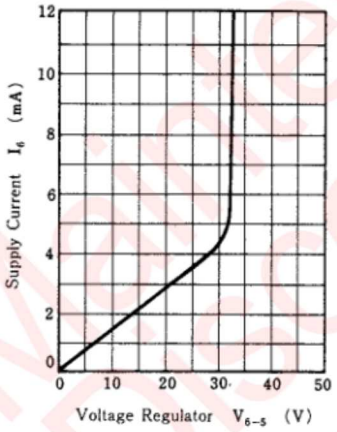
Test Circuit 3 ($V_{CE(sat)}$)



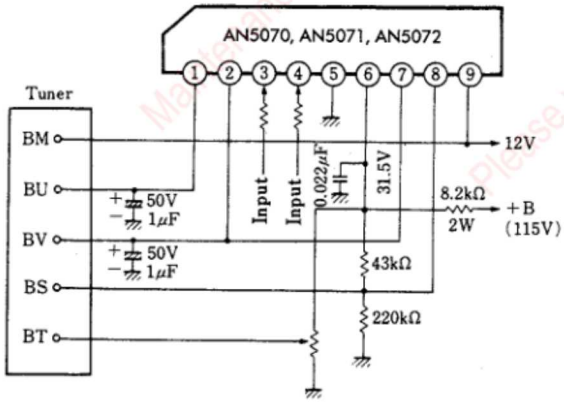
Test Circuit 4 (V_{6-5}, V_{6-5}/Ta, ΔV_{6-5})

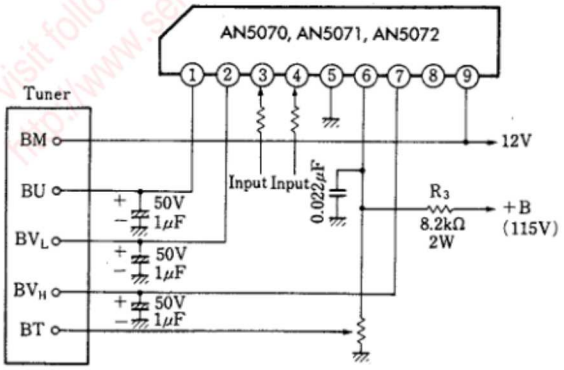


$I_6 - V_{6-5}$



■ Application Circuits





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