



### ■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	Record FM Signal Input	11	Record Current Output(SP)
2	Record Chroma Signal Input	12	Current Amp. Input(PNP)
3	Gain Changeover Amp. Control	13	Record Current Output(LP)
4	Gain Changeover Amp.Output	14	Current Amp. Input(NPN)
5	Current Emphasis Changeover	15	Switching Tr. (LP)
6	Current Emphasis Switching	16	Switching Tr. (LP)
7	2 H(SP)/4, 6 H(LP)Changeover	17	GND
8	2 H(SP)/4, 6 H(LP)Changeover	18	Switching Tr. (SP)
9	SS Changeover	19	Switching Tr. (SP)
10	Except Rec. $V_{cc}$	20	Delayed Rec. $V_{cc}$

### ■ Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

Item	Symbol	Rating	Unit
Supply Voltage	$V_{cc}$	10	V
Power Dissipation( $T_a=70^\circ\text{C}$ )	$P_D$	580	mW
Operating Ambient Temperature	$T_{opr}$	-20~+70	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~+150	$^\circ\text{C}$

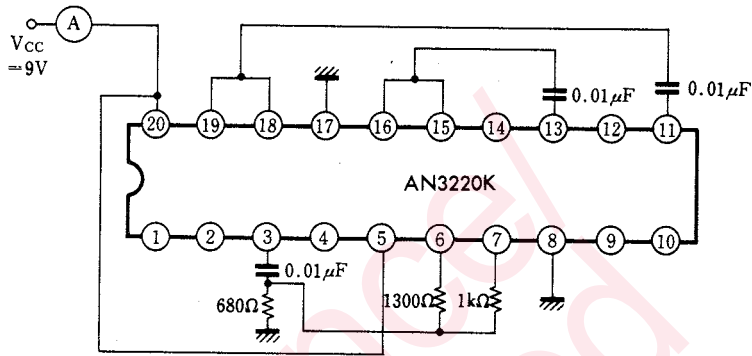
### ■ Electrical Characteristics ( $T_a=25^\circ\text{C}$ )

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Circuit Current	$I_{20}$	1	$V_{CC}=9\text{V}$	22.5		55.5	mA
Recording Current Output(SP)	$I_{11}$	2	$V_{CC}=9\text{V}$ , $f_{IN}=4\text{MHz}$	15.5		31	$\text{mA}_{p-p}/\text{ch.}$
Recording Current Output(LP)	$I_{13}$	2	$V_{CC}=9\text{V}$ , $f_{IN}=4\text{MHz}$	11.6		24.2	$\text{mA}_{p-p}/\text{ch.}$
Chroma Recording Current Output	$I_{11}$	2	$V_{CC}=9\text{V}$ , $f_{IN}=4\text{MHz}$	14.5		30	$\text{mA}_{p-p}/\text{ch.}$
Current Emphasis Changeover Sensitivity	$S_5$	3	$V_{CC}=9\text{V}$	2			V
2H(SP)/4,6H(LP)Changeover Sensitivity	$S_8$	3	$V_{CC}=9\text{V}$	2			V
SS Changeover Sensitivity	$S_9^*$	4	E.R. $V_{CC}=5\text{V}$	3			V
Recording Current Secondary Distortion(SP)	$D_{11}^*$	5	$V_{CC}=9\text{V}$			-40	dB
Recording Current Secondary Distortion(LP)	$D_{13}^*$	5	$V_{CC}=9\text{V}$			-40	dB
Cross-modulation Relative Level(SP)	$D_{11\pm f}^*$	5	$V_{CC}=9\text{V}$			-40	dB
Cross-modulation Relative Level(LP)	$D_{13\pm f}^*$	5	$V_{CC}=9\text{V}$			-40	dB

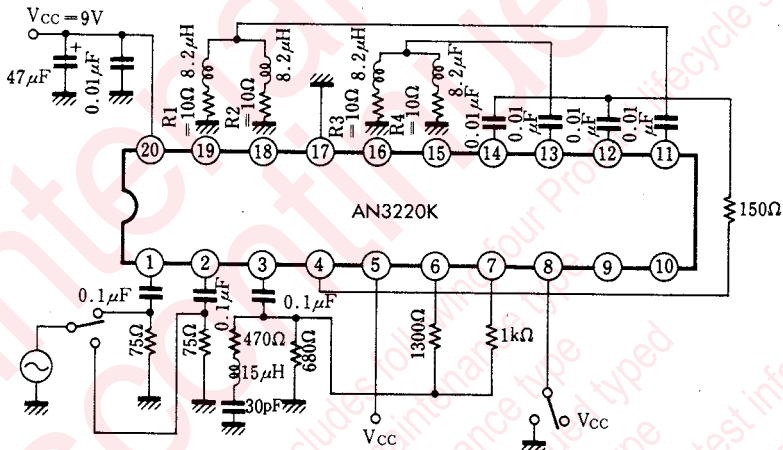
\*Pin⑩ is EXCEPT REC.  $V_{cc}$  terminal and 5V is used. The recording current does not appear when 5V is added to Pin⑩.

Note : Operating Supply Voltage Range :  $V_{cc(ops)}=8.5\sim 9.5\text{V}$

Test Circuit 1 ( $I_{20}$ )



Test Circuit 2 ( $I_{11}$ ,  $I_{13}$ ,  $I_{11}$ )



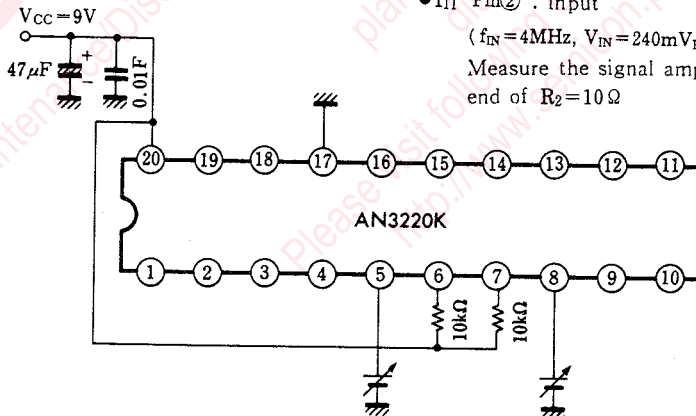
•  $I_{11}$  Pin① : Input

( $f_{IN}=4\text{MHz}$ ,  $V_{IN}=80\text{mV}_{P-P}$ ) Pin ③ : GND  
Measure the signal amplitude between both end of  $R_2=10\Omega$

•  $I_{13}$  Pin① : Input

( $f_{IN}=4\text{MHz}$ ,  $V_{IN}=80\text{mV}_{P-P}$ ) Pin ③ : GND  
Measure the signal amplitude between both end of  $R_4=10\Omega$

Test Circuit 3 ( $S_5$ ,  $S_8$ )



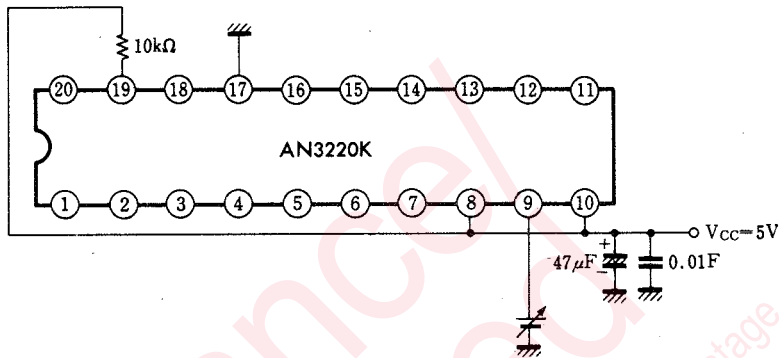
•  $I_{11}$  Pin② : Input

( $f_{IN}=4\text{MHz}$ ,  $V_{IN}=240\text{mV}_{P-P}$ ) Pin ⑥ : GND  
Measure the signal amplitude between both end of  $R_2=10\Omega$

•  $S_5$  : Increasing the electric potential of Pin ⑤ from 0V, measure the electric potential of Pin ⑤ when the electric potential of Pin ⑥ is switched from Hi ( $\sim V_{CC}$ ) to Lo ( $\sim 0\text{V}$ ).

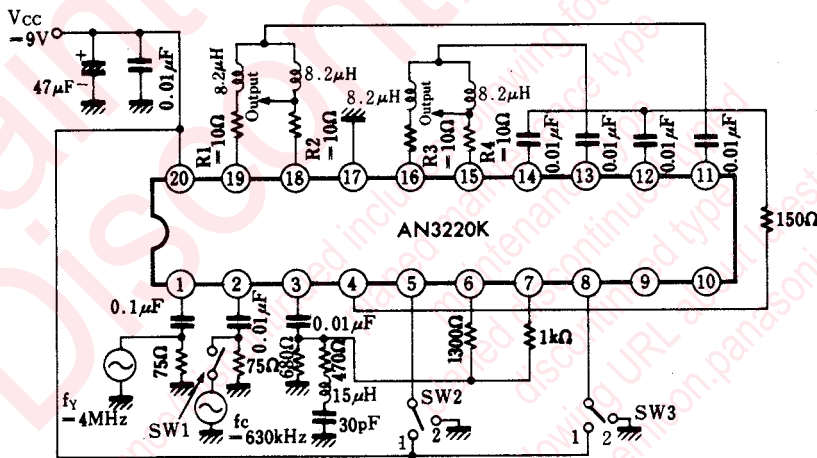
•  $S_8$  : Increasing the electric potential of Pin ③ from 0V, measure the electric potential of Pin ③ when the electric potential of Pin ⑦ is switched from Hi ( $\sim V_{CC}$ ) to Lo ( $\sim 0\text{V}$ ).

Test Circuit 4 (S<sub>9</sub>)



- S<sub>9</sub> : Increasing the electric potential of Pin ⑨ from 0V, measure the electric potential of Pin ⑨ when the electric potential of Pin ⑱ is switched from Hi (~V<sub>cc</sub>) to Lo (~0V).

Test Circuit 5 (D<sub>11</sub>, D<sub>13</sub>, D<sub>11±f</sub>, D<sub>13±f</sub>)



- D<sub>11</sub>: SW<sub>1</sub>: no connection

Measure the secondary distortion of signal voltage between both ends of R<sub>2</sub>=10Ω when (input) Pin ① 80mV<sub>P-P</sub>, f<sub>y</sub>=4MHz.

- D<sub>13</sub>: SW<sub>1</sub>: no connection

Measure the secondary distortion of signal voltage between both ends of R<sub>4</sub>=10Ω when (input) Pin ① 80mV<sub>P-P</sub>, f<sub>y</sub>=4MHz.

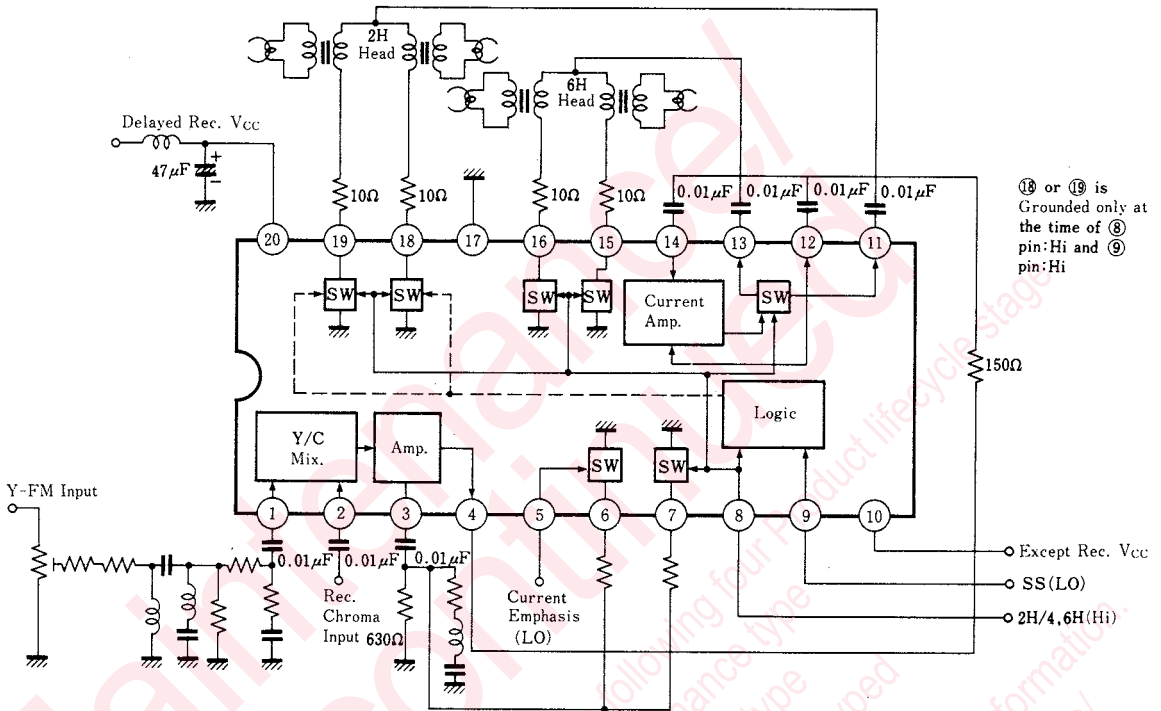
- D<sub>11±f</sub>: SW<sub>1</sub>: short-circuit, SW<sub>2</sub>: 1, SW<sub>3</sub>: 2

Measure the level of f<sub>y</sub>±f<sub>c</sub> element to f<sub>y</sub> element between both ends of R<sub>2</sub>=10Ω when (input) Pin ① 80mV<sub>P-P</sub>, f<sub>y</sub>=4MHz, Pin ② 60mV<sub>P-P</sub>, f<sub>c</sub>=630kHz.

- D<sub>13±f</sub>: SW<sub>1</sub>: short-circuit, SW<sub>2</sub>: 1, SW<sub>3</sub>: 1

Measure the level of f<sub>y</sub>±f<sub>c</sub> element to f<sub>y</sub> element between both ends of R<sub>4</sub>=10Ω when (input) Pin ① 80mV<sub>P-P</sub>, f<sub>y</sub>=4MHz, Pin ② 50mV<sub>P-P</sub>, f<sub>c</sub>=630kHz.

■ Application Circuit



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