



### ■ Absolute Maximum Ratings (Ta = 25°C)

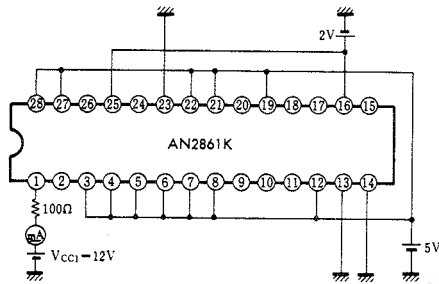
Item	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub> *	14.4	V
Supply current	I <sub>CC</sub>	89	mA
Power dissipation	P <sub>D</sub>	540	mW
Operating ambient temperature	T <sub>opr</sub>	-20~+70	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

\*Impress the supply voltage V<sub>CC</sub> through 100Ω.

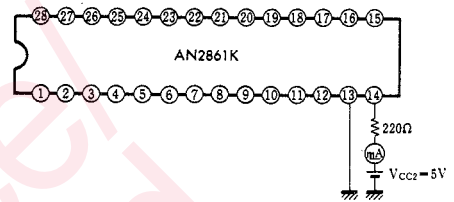
### ■ Electrical Characteristics (Ta = 25°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Linear circuit current	I <sub>1</sub>	1	V <sub>CC1</sub> =12V	21	30	39	mA
Internal supply voltage	V <sub>1-13</sub>	1	V <sub>CC1</sub> =12V	8.1	9.0	9.9	V
TBC reference voltage	V <sub>2-13</sub>	1	V <sub>CC1</sub> =12V	4.05	4.50	4.95	V
TT reference voltage	V <sub>26-13</sub>	1	V <sub>CC1</sub> =12V	4.05	4.50	4.95	V
I <sup>2</sup> L circuit current	I <sub>14</sub>	2	V <sub>CC2</sub> =5V	17	19	21	mA
TT amp. input conversion offset voltage	V <sub>I25(offset)</sub>	3	V <sub>CC1</sub> =12V			10	mV
FG amp. input conversion offset voltage	V <sub>I16(offset)</sub>	4	V <sub>CC1</sub> =12V			10	mV
TBC trapezoidal wave charging current	I <sub>O(9)</sub>	5	Pin ⑨=4.5V	-35	-45	-55	μA
TT trapezoidal wave charging current	I <sub>O(22)</sub>	6	Pin ⑳=4.5V	-40	-50	-60	μA
DO input voltage	V <sub>I(4)</sub>	7	Pin ⑧=Ref. H Sync. Pin ③=PB. H Sync.	2.3	3.0	3.7	V
TBC mute OFF input voltage	V <sub>OFF(12)</sub>	7	Pin ⑧=Ref. H Sync. Pin ③=PB. H Sync.	0.6			V
TBC mute ON input voltage	V <sub>ON(12)</sub>	7	Pin ⑧=Ref. H Sync. Pin ③=PB. H Sync.			3.3	V
TBC mute output voltage	V <sub>O(11)</sub>	7	Pin ⑧=Ref. H Sync. oscillation Pin ③=PB. H Sync.	4.05	4.50	4.95	V
VHD/AHD select input voltage	V <sub>I(6)</sub>	8	Pin ⑳=VCXO oscillation Pin ⑤=AHD EXT IN	1.4	2.0	2.6	V
NTSC/PAL select input voltage	V <sub>I(7)</sub>	8	Pin ⑳=VCXO oscillation Pin ⑤=AHD EXT IN	1.4	2.0	2.6	V
STOP/START select input voltage	V <sub>I(14)</sub>	9	Pin ⑳=VCXO oscillation	1.4	2.0	2.6	V
Speed error output voltage(H)	V <sub>OH(20)</sub>	10	Pin ⑳=VCXO oscillation Pin ⑳=PB. FG	6.75	7.50	8.25	V
Speed error output voltage(L)	V <sub>OL(20)</sub>	10	Pin ⑳=VCXO oscillation Pin ⑳=PB. FG	1.2	1.5	1.8	V
Lock detection output voltage(H)	V <sub>OH(18)</sub>	10	Pin ⑳=VCXO oscillation Pin ⑳=PB. FG	2.8			V
Lock detection output voltage(L)	V <sub>OL(18)</sub>	10	Pin ⑳=VCXO oscillation Pin ⑳=PB. FG			0.5	V
Stop detection output voltage(H)	V <sub>OH(17)</sub>	10	Pin ⑳=VCXO oscillation Pin ⑳=PB. FG	2.8			V
Stop detection output voltage(L)	V <sub>OL(17)</sub>	10	Pin ⑳=VCXO oscillation Pin ⑳=PB. FG			0.5	V

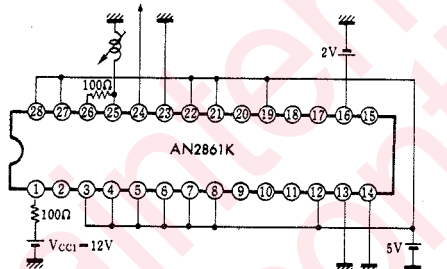
Test Circuit 1 ( $I_{11}$ ,  $V_{1-13}$ ,  $V_{2-13}$ ,  $V_{26-13}$ )



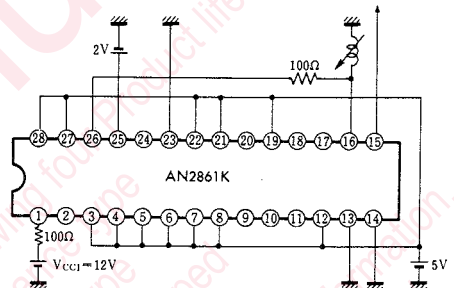
Test Circuit 2 ( $I_{14}$ )



Test Circuit 3 ( $V_{125(\text{offset})}$ )



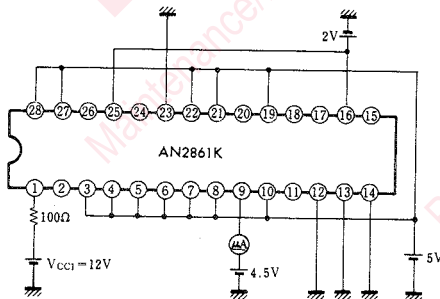
Test Circuit 4 ( $V_{116(\text{offset})}$ )



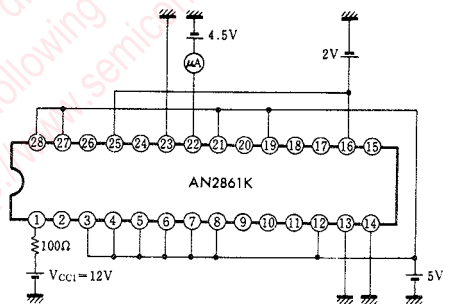
The Pin 23 output voltage is switched when the Pin 25 input current is changed. Measure an absolute voltage value between the Pins 24 and 26 when the Pin 24 output voltage becomes equal to the Pin 26 output voltage.

The Pin 15 output voltage is switched when the Pin 16 input current is changed. Measure an absolute voltage value between the Pins 15 and 26 when the Pin 15 output voltage become equal to the Pin 26 output voltage.

Test Circuit 5 ( $I_{O(9)}$ )

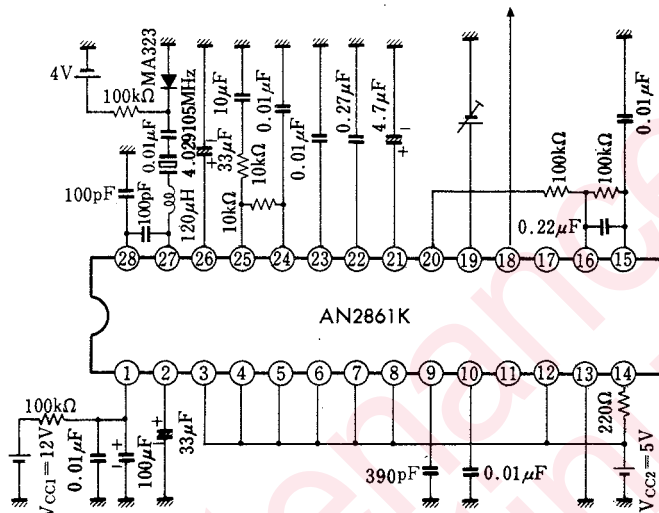


Test Circuit 6 ( $I_{O(22)}$ )



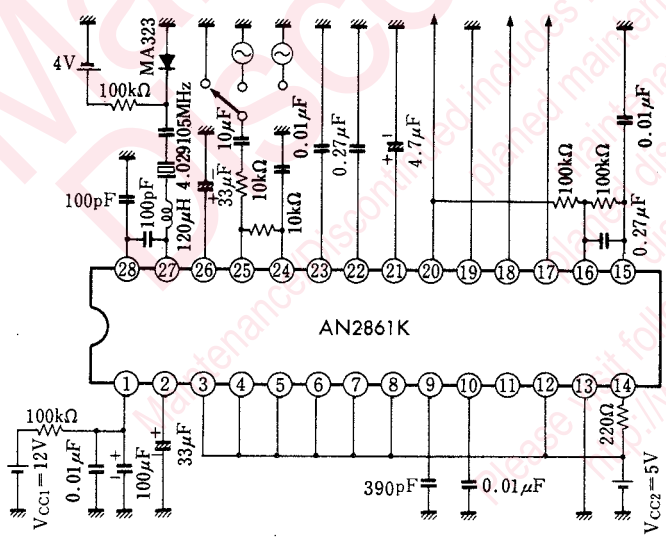


Test Circuit 9 ( $V_{I(14)}$ )



$V_{I(19)}$ :  
When the Pin<sup>19</sup> input voltage is changed, the Pin<sup>13</sup> output voltage is switched. Measure the then Pin<sup>13</sup> input voltage and assume it as  $V_{I(19)}$ .

Test Circuit 10 ( $V_{OH(20)}$ ,  $V_{OL(20)}$ ,  $V_{OH(18)}$ ,  $V_{OL(18)}$ ,  $V_{OH(17)}$ ,  $V_{OL(17)}$ )



$V_{OL(20)}$ ,  $V_{OH(20)}$ ,  $V_{OH(18)}$ ,  $V_{OL(18)}$ ,  $V_{OH(17)}$ ,  $V_{OL(17)}$ :

1. Set the SW1 to "a".
2. Measure the Pin<sup>10</sup> output voltage and assume it as  $V_{OH(20)}$ .
3. Measure the Pin<sup>18</sup> output voltage and assume it as  $V_{OH(18)}$ .
4. Measure the Pin<sup>17</sup> output voltage and assume it as  $V_{OL(17)}$ .

$V_{OL(18)}$ ,  $V_{OH(17)}$ :

1. Set the SW1 to "b".
2. The Pin<sup>25</sup> input signal is phase-synchronized with the Pin<sup>26</sup> oscillation output divided by 33,600.
3. Measure the Pin<sup>18</sup> output voltage and assume it as  $V_{OH(18)}$ .
4. Measure the Pin<sup>17</sup> output voltage and assume it as  $V_{OH(17)}$ .

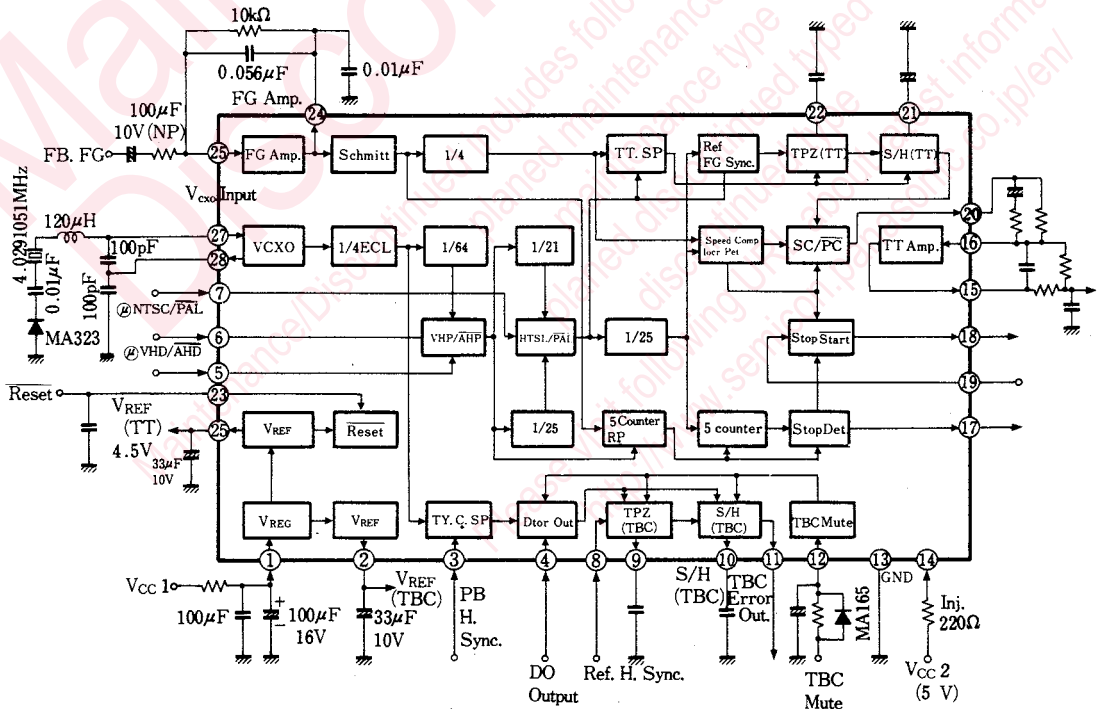
$V_{OL(20)}$ ,  $V_{OH(18)}$ :

1. Set the SW1 to "c".
2. Measure the Pin<sup>20</sup> output voltage and assume it as  $V_{OL(20)}$ .
3. Measure the Pin<sup>18</sup> output voltage and assume it as  $V_{OL(18)}$ .

■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	V <sub>CC1</sub>	15	TT Amp Output
2	TBC Reference Voltage	16	TT Amp Input
3	PB H Sync.	17	Stop Signal Det.
4	DO Control Signal Input	18	Stop lock Det. Output
5	AHD EXT. Input	19	Stop Start Signal Switch
6	VHD·AHD Switch	20	TT Phase Speed Error Output
7	NTSC·PAL Switch	21	TT S & H
8	Ref. H Sync.	22	TT Trapezoid Signal
9	TBC Trapezoid Signal	23	RESET
10	TBC S & H	24	FG Amp. Output
11	TBC Phase Error Output	25	FG Amp. Input
12	TBC Mute Control Signal Input	26	TT Reference Voltage
13	GND	27	VCXO Input
14	IIL Injector	28	VCXO Output

■ Application Circuit.



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