

### VERTICAL DEFLECTION OUTPUT CIRCUIT FOR COLOR TELEVISION

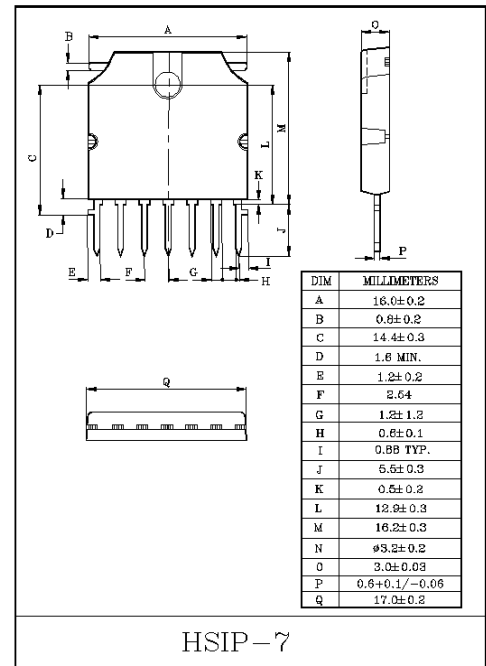
The KIA8403K is a power amplifier for driving a vertical deflection circuit of a small and medium screen size color television. Which is available for constructing a stable deflection circuit with small number parts in an application.

#### FEATURES

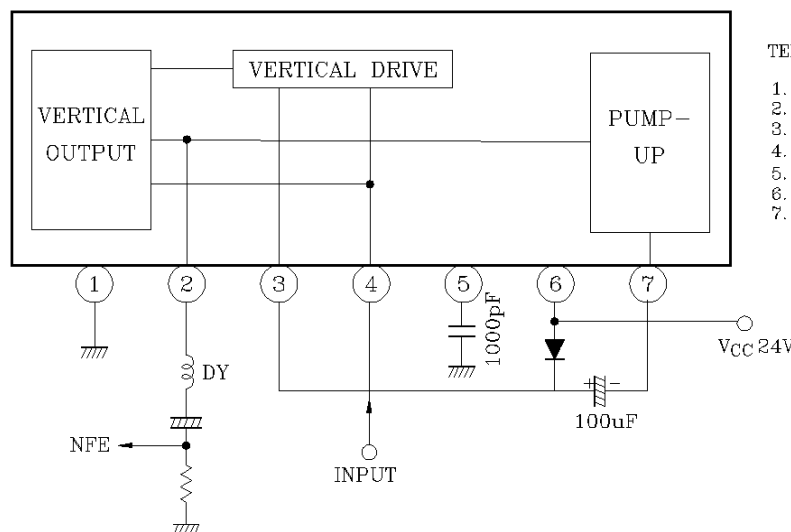
- Large output current : 1.8A<sub>p-p</sub> (Max.)
- Small power dissipation with a Pump-up circuit
- Small number external parts

#### MAXIMUM RATINGS (Ta=25°C)

| CHARACTERISTIC               | SYMBOL           | RATING                            | UNIT |
|------------------------------|------------------|-----------------------------------|------|
| Power Supply Voltage         | V <sub>CC</sub>  | 30                                | V    |
| Pump-up Power Supply Voltage | V <sub>Vt</sub>  | 60                                | V    |
| Terminal Voltage             | E <sub>in</sub>  | GND -0.3~<br>V <sub>Vt</sub> +0.3 | V    |
| Input Signal Voltage         | e <sub>in</sub>  | 0~1.2                             | V    |
| Power Dissipation            | P <sub>D</sub>   | 15 (Note)                         | W    |
| Operating Temperature        | T <sub>opr</sub> | -20~85                            | °C   |
| Storage Temperature          | T <sub>stg</sub> | -55~150                           | °C   |



#### BLOCK DIAGRAM



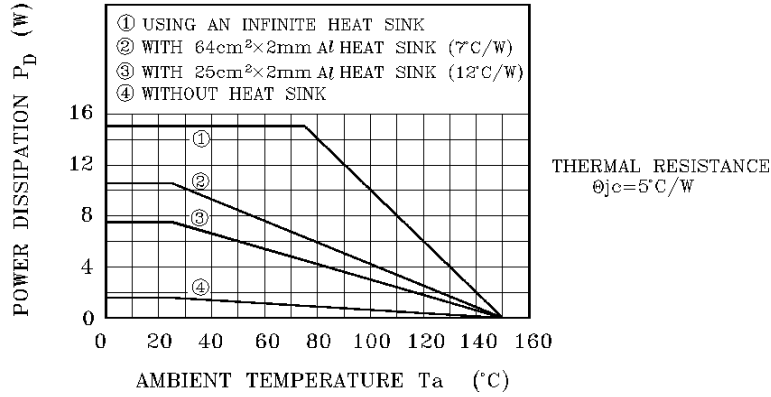
#### TERMINAL NAME

1. GND
2. Vertical Output
3. Pump-up power supply
4. Input
5. Phase Compensation
6. Power supply
7. Pump-up Output

# KIA8403K

## TERMINAL INTERFACE

$$P_D - T_a$$



## RECOMMENDED OPERATING CONDITIONS ( $T_a=25^{\circ}\text{C}$ )

| CHARACTERISTIC            | SYMBOL     | MIN. | TYP. | MAX. | UNIT             |
|---------------------------|------------|------|------|------|------------------|
| Supply Voltage            | $V_{CC}$   | -    | 24   | 27   | V                |
| Deflection Output Current | $I_{2P-P}$ | -    | -    | 1.8  | A <sub>P-P</sub> |

## ELECTRICAL CHARACTERISTICS

(Unless otherwise specified,  $V_{CC1}=9\text{V}$ ,  $V_{CC2}=24\text{V}$ ,  $T_a=25^{\circ}\text{C}$ )

| CHARACTERISTIC                                           | SYMBOL        | TEST CIRCUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|----------------------------------------------------------|---------------|--------------|----------------|------|------|------|------|
| Saturation Voltage of the Vertical Output Transistor (1) | $V_{V(sat)1}$ | 1            | (Note 1)       | 0.3  | 0.5  | 1.0  | V    |
| Saturation Voltage of the Vertical Output Transistor (2) | $V_{V(sat)2}$ | 1            | (Note 2)       | 1.0  | 1.8  | 3.6  | V    |
| Saturation Voltage of the Pump-up Output Transistor (1)  | $V_{P(sat)1}$ | 1            | (Note 3)       | 1.0  | 2.0  | 3.0  | V    |
| Saturation Voltage of the Pump-up Output Transistor (2)  | $V_{P(sat)2}$ | 1            | (Note 4)       | 0.3  | 0.8  | 1.6  | V    |
| Output Current with no input                             | $I_B$         | 1            | (Note 5)       | 10.0 | 15.0 | 30.0 | mA   |
| Center Output Voltage                                    | $V_{CENTER}$  |              |                | 10.0 | 12.0 | 14.0 | V    |

(Note 1) SW<sub>1</sub>:ON, SW<sub>2</sub>:C, SW<sub>3</sub>:ON, SW<sub>4</sub>:B, SW<sub>5</sub>:A, SW<sub>6</sub>:A  
Measure the voltage of pin 2.

(Note 2) SW<sub>1</sub>:ON, SW<sub>2</sub>:C, SW<sub>3</sub>:ON, SW<sub>4</sub>:A, SW<sub>5</sub>:A, SW<sub>6</sub>:B  
Measure the voltage of pin 2,  $V_2 \cdot V_{V(sat)2} = V_{CC} - V_2$

(Note 3) SW<sub>1</sub>:ON, SW<sub>2</sub>:C, SW<sub>3</sub>:OFF, SW<sub>4</sub>:A, SW<sub>5</sub>:C, SW<sub>6</sub>:A  
Measure the voltage of pin 7,  $V_7 \cdot V_{P(sat)1} = V_{CC} - V_7$

(Note 4) SW<sub>1</sub>:OFF, SW<sub>2</sub>:C, SW<sub>3</sub>:OFF, SW<sub>4</sub>:A, SW<sub>5</sub>:B, SW<sub>6</sub>:B  
Measure the voltage of pin 7.

(Note 5) SW<sub>1</sub>:ON, SW<sub>2</sub>:A, SW<sub>3</sub>:ON, SW<sub>4</sub>:C, SW<sub>5</sub>:A, SW<sub>6</sub>:B  
Measure the sink current into pin 3.  
Measure the voltage of pin 2.

(Note 6) TA8403K is checked its output wave form in a real operating circuit.

# KIA8403K

## TEST CIRCUIT

