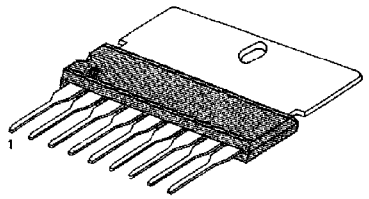
# TV VERTICAL OUTPUT CIRCUIT

The KA2131 is a monolithic integrated circuit designed for the vertical output stage in color television receivers.

9 SIP H/S



## FUNCTIONS

- Driver stage.
- Output stage.
- Flyback generators.
- Pulse shapers.

## FEATURES

- **Low power consumption, direct deflection coil driving capability** (Flyback voltage is two times as high as the supply voltage is supplied during flyback period only).
- **High breakdown voltage: 60V.**

## ORDERING INFORMATION

| Device | Package | Operating Temperature |
|---|---|---|
| KA2131 | 9 SIP H/S | −20 ~ +70°C |

## BLOCK DIAGRAM

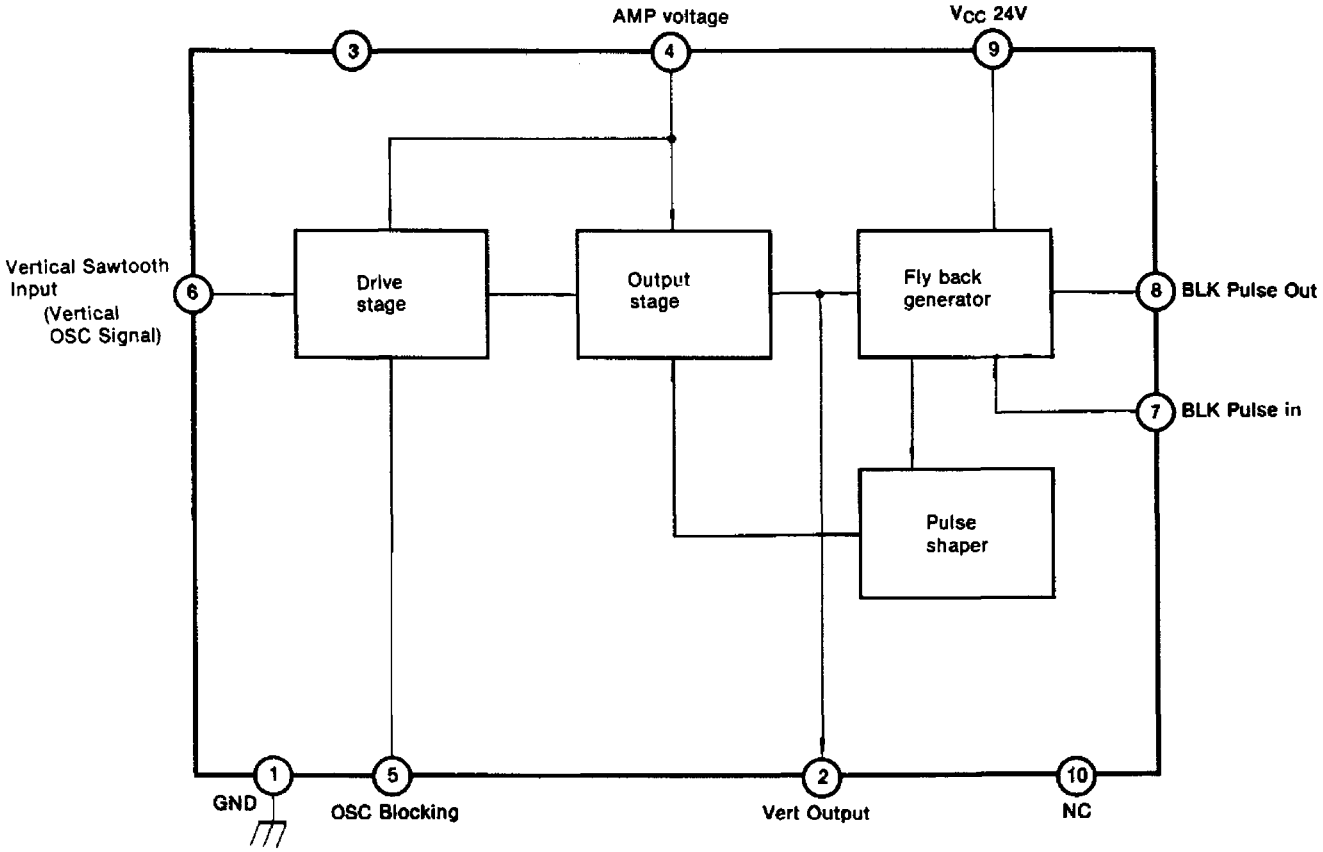



Fig. 1

## ABSOLUTE MAXIMUM RATINGS

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Supply Voltage | $V_{CC}$ | 27.6 | V |
| Circuit Voltage | $V_4$ | 60 | V |
| | $V_6$ | 2.5 | V |
| | $V_7$ | 1.3 | V |
| Supply Current | $I_{CC}$ | 250 | mA |
| Power Dissipation | $P_D$ | 6.66 | W |
| Circuit Current | $I_2$ | −1000 ~ +1000 | $mA_{P-P}$ |
| | $I_8$ | −1000 ~ +1000 | $mA_{P-P}$ |
| Operating Temperature | $T_{OPR}$ | −20 ~ +70 | °C |
| Storage Temperature | $T_{STG}$ | −55 ~ +150 | °C |

## ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Deflection Current | $IY_{P-P}$ | SW:2 | 860 | 930 | 1000 | $mA_{p-p}$ |
| Deflection Current Linearity | $\Delta Iy\ (+)$ | SW: 1 | 25 | — | 75 | $mA_{p-p}$ |
| | $\Delta I_Y\ (-)$ | SW:1 | 22 | — | 85 | $mA_{p-p}$ |
| Deflection Current vs. Operating Temperature | $\Delta I_Y/T_A$ | $T_a = -20 \sim +70°C$ | −1.5 | — | 1.5 | % |
| Center Voltage | $V_{MID}$ | SW: 1 | 12.1 | 12.6 | 13.1 | V |
| Flyback Pulse Amplitude | V(FBP) | SW: 1 | 47 | | | V |
| Flyback Pulse Width | $t_{FBP}$ | SW: 1 | 850 | 920 | 980 | μsec |
| Quiescent Circuit Current | $I_{CQ}$ | $V_4 = 24V$<br>$V_9 = 24V$<br>$V_7 = 0V$<br>② 12K 7.5K ⑥<br>910Ω | 7 | 13 | 22 | mA |
| Output TR Saturation Voltage | $V_{4-2}$ | $V_4 = V_9 = 24V$, $pin_{2-1} = 56\Omega$<br>$V_6 = 0.3V$, $V_7 = 0V$ | — | 2.7 | 3.7 | V |
| | $V_2$ | $V_4 = V_9 = 24V$, $pin_{2-4} = 56\Omega$<br>$V_6 = 1.3V$, $V_7 = 0V$ | — | 0.6 | 1.0 | V |
| Saturation Voltage | $V_8$ | $V_9 = 24V$, $Rpin_{9-8} = 1.2K\Omega$<br>$V_7 = 0V$ | — | — | 0.5 | V |
| Thermal Resistance | $R_{TH\ (J-C)}$ | | — | — | 12 | °C/W |

## TYPICAL APPLICATION CIRCUIT

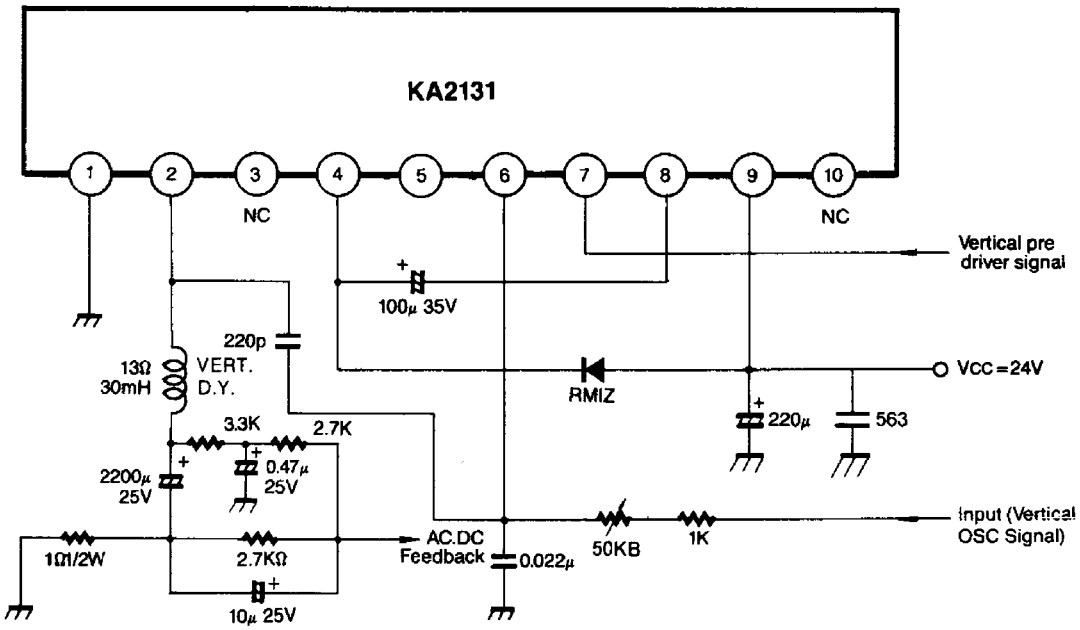



Fig. 2

# TEST CIRCUIT

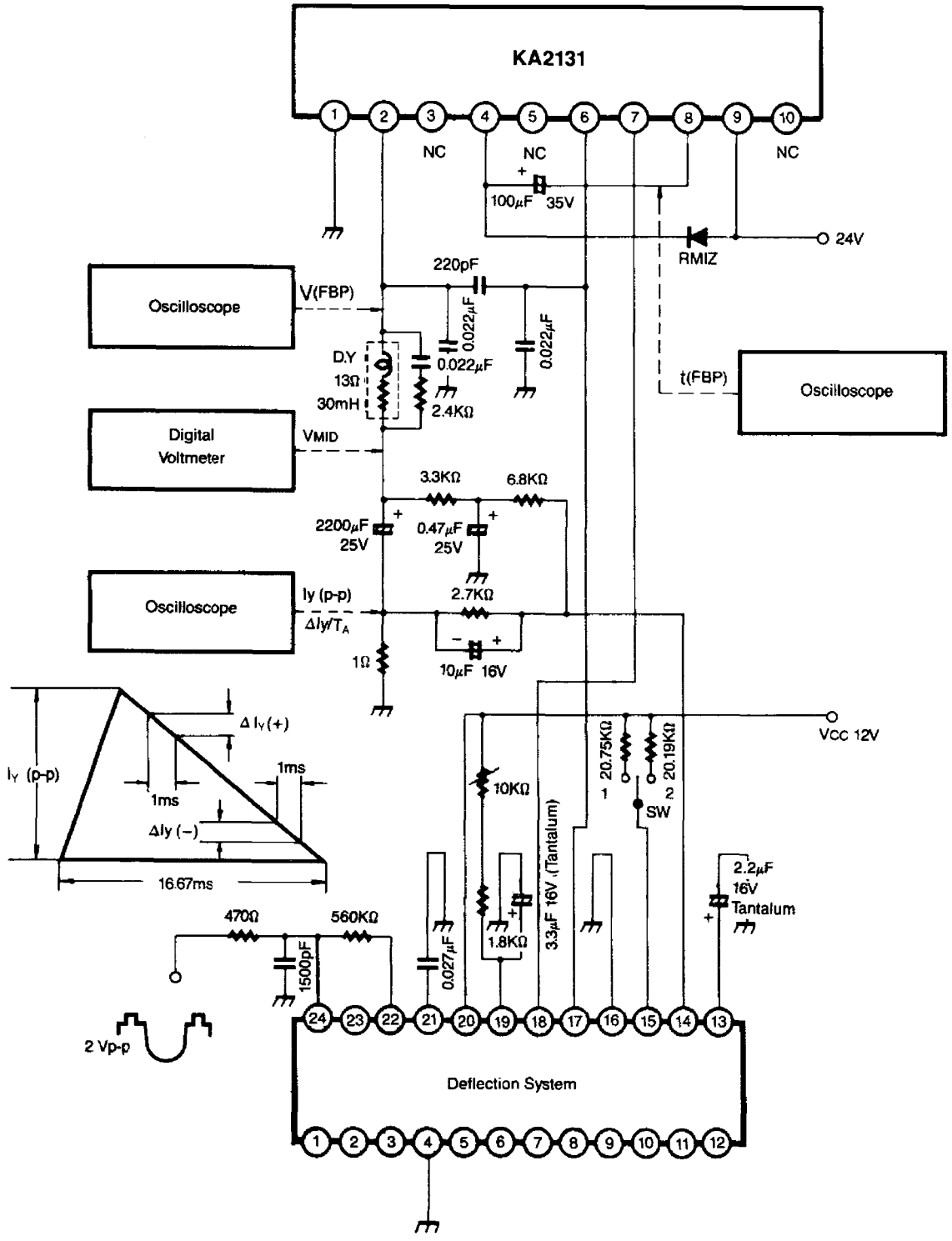



Fig. 3