

## KA2130A

## LINEAR INTEGRATED CIRCUIT

### TV VERTICAL DEFLECTION SYSTEM

The KA2130A is a monolithic integrated circuit for use in the vertical deflection circuit of monochrome and small-sized color television receivers. It oscillates vertical signal synchronizing with the vertical synchronization signal and outputs the vertical deflection current with a single chip.

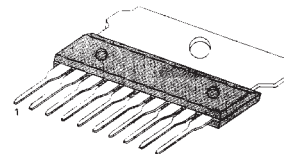
### FUNCTIONS

- Vertical synchronization circuit.
- Vertical oscillation circuit.
- Vertical saw-tooth shaper.
- Vertical-output circuit.
- Clamping circuit for blanking pulse.
- Temperature compensating circuit.

### FEATURES

- Less number of external components.
- Wide range of operational voltage (9V ~ 18 volts).
- Freely adjustable pull-in range.
- Adjustable blanking pulse-width.
- Large output current-capacity (2 A<sub>p-p</sub>).
- Built-in adjusting circuit for flyback time.
- Easy mounting on printed circuit board.

10 SIP H/S



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### ORDERING INFORMATION

| Device  | Package    | Operating Temperature |
|---------|------------|-----------------------|
| KA2130A | 10 SIP H/S | - 20 ~ + 75°C         |

### TYPICAL APPLICATION CIRCUIT

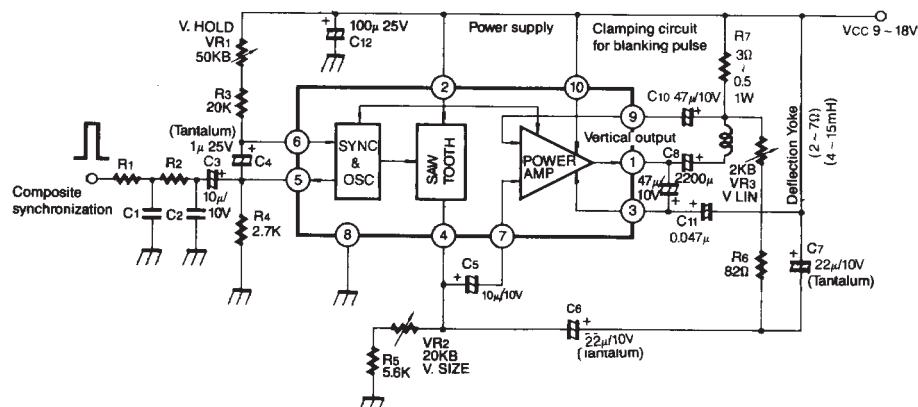


Fig. 1

ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

| Characteristic        | Symbol    | Value                                                                              | Unit             |
|-----------------------|-----------|------------------------------------------------------------------------------------|------------------|
| Supply Voltage        | $V_{CC}$  | 20                                                                                 | V                |
| Output Current        | $I_{OP}$  | 2                                                                                  | A <sub>p-p</sub> |
| Power Dissipation     | $P_{d1}$  | 1.5 ( $T_a = +75^\circ\text{C}$ )<br>With aluminum heatsink                        | W                |
| Power Dissipation     | $P_{d2}$  | 2.15 ( $T_a = +75^\circ\text{C}$ )<br>With aluminium heatsink<br>(31.6×31.6×1mm t) | W                |
| Operating Temperature | $T_{opr}$ | -20 ~ +75                                                                          | $^\circ\text{C}$ |
| Storage Temperature   | $T_{stg}$ | -40 ~ +150                                                                         | $^\circ\text{C}$ |

ELECTRICAL CHARACTERISTICS ( $V_{CC} = 12\text{V}$ ,  $T_a = 25^\circ\text{C}$ )

| Characteristic                                           | Symbol          | Test Conditions                                                                                                                              | Min | Typ   | Max       | Unit            | Test Fig |
|----------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----|-------|-----------|-----------------|----------|
| Circuit Current                                          | $I_{CC}$        | No input signal and no load condition                                                                                                        | 15  | 30    | 46        | mA              | 2        |
| Output Terminal Voltage                                  | $V_N$           | No input signal and no load condition                                                                                                        | 5.6 | 6.0   | 6.4       | V               | 2        |
| Vertical Oscillation Frequency                           | $f_V$           | Synchronization signal voltage applied at Terminal 5 is 1.3 $V_{PP}$                                                                         | —   | 50/60 | —         | Hz              | 2        |
| Free-running Frequency                                   | $f_{VO}$        | Oscillation capacitor, 1 $\mu\text{F}$ (Tantalum) resistor, 38.1K $\Omega$                                                                   | 53  | 60    | 67        | Hz              | 2        |
| Pull-in Range                                            | $f_P$           | With specified integration circuit, applied voltage of synchronization signal is 1.3 $V_{PP}$ at Terminal 5                                  | -10 | -12   | —         | Hz              | 2        |
| Drift of Free-running Frequency vs. Power Supply Voltage | $\Delta f_{VO}$ | Frequency drift from standard frequency ( $f_{VO}$ 60 Hz at $V_{CC} = 12\text{V}$ ) vs. power supply voltage ( $V_{CC} = 12 \pm 2\text{V}$ ) | —   | —     | $\pm 1.0$ | Hz              | 2        |
| Deviation of Pull-in Range vs. Power Supply Voltage      | $\Delta f_P$    | Deviation from the range for pull in (at $V_{CC} = 12\text{V}$ ) vs. power supply voltage ( $V_{CC} = 12 \pm 2\text{V}$ )                    | —   | —     | $\pm 3.0$ | Hz              | 2        |
| Output Saturation Voltage                                | $V_{sat}$       | Output current: 0.7A                                                                                                                         | —   | 1.3   | 1.6       | V               | 2        |
| Output Pulse Width of Terminal 4                         | $T_O$           | Oscillation capacitor, 1 $\mu\text{F}$ (Tantalum) resistor, 38.1K $\Omega$                                                                   | 300 | 420   | 600       | $\mu\text{sec}$ | 2        |

