

T-77-07-11

GL1150 / 1151 SYNC. DEFLECTION CIRCUIT FOR CRT DISPLAY

Description

The GL1150/1151 are sync. deflection circuit IC dedicated to CRT display use. They can be connected to the GL1130/1131 (for vertical output use) to form a sync. deflection circuit that meets every requirement for CRT display use. So far, IC's for color TV use have been applied to the sync. deflection circuit for CRT display use and general-purpose IC's such as one-shot multivibrator, inverter and a lot of transistors have been used to form the peripherals such as sync input interface, horizontal phase shifter. The GL1150/1151 contain these peripherals on chip and adopt a stable circuit for horizontal oscillation from 15kHz to 100kHz aiming at improving the characteristics required for CRT display use.

Features

- The Horizontal Oscillation Frequency can be Adjusted Stably from 15kHz to 100kHz.
- The Horizontal Display can be Shifted Right/Left.
- The Horizontal/Vertical Sync Input can be Used Intact Regardless of the Difference in Pulse Polarity and Pulse Width
- The AFC Feedback Sawtooth Wave can be Obtained by Simply Applying a Flyback Pulse to the IC as a Trigger Pulse.
- Any Duty of the Horizontal Pulse can be Set.
- Good Linearity Because DC Bias at Vertical Output Stage is Subjected to Sampling Control Within Retrace Time.
- Vertical Pull-In Range 20 Hz Permits Non-Adjusting at Vertical Sync 50Hz/60Hz in GL1151.

On-chip Functions

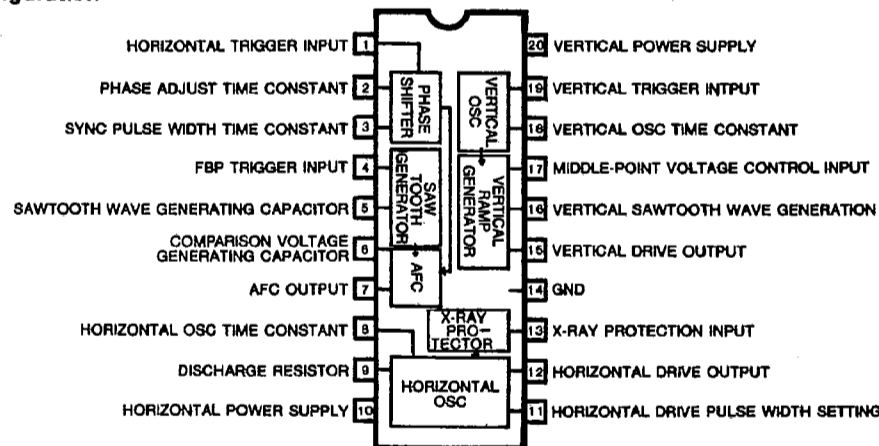
[Horizontal Block]

- AFC
- Horizontal OSC
- X-ray Protector
- Horizontal Phase Shifter
- AFC Sawtooth Wave Generator
- Horizontal Pulse Duty Setting

[Vertical Block]

- Vertical OSC
- Vertical Sawtooth Wave Generator
- Sampling Type DC Voltage Control

Pin Configuration



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Absolute Maximum Ratings at $T_A=25^\circ\text{C}$

| | | unit |
|-----------------------------|---|----------------|
| Maximum Supply Voltage | $V_{10,20\text{max}}$ | 14 V |
| Allowable Power Dissipation | $P_{D\text{max}}$ $T_A \leq 65^\circ\text{C}$ | 780 mW |
| Operating Temperature | T_{opg} | -20 to +85 °C |
| Storage Temperature | T_{stg} | -55 to +125 °C |

Operating Conditions at $T_A=25^\circ\text{C}$

| | | unit |
|----------------------------|------------------------|---------------|
| Operating Voltage Range | $V_{10,20\text{-opg}}$ | 9.0 to 13.5 V |
| Recommended Supply Voltage | $V_{10,20}$ | 12.0 V |

Operating Characteristics at $T_A=25^\circ\text{C}$, $V_{CC10}=V_{CC20}=12\text{V}$

| SYMBOL | PARAMETER | CONDITIONS | MIN | TYP | MAX | UNIT |
|-----------------|---|---|-----------|-----|-----------|------|
| I_{10} | V_{CC10} Current Dissipation | | 12 | | 30 | mA |
| I_{20} | V_{CC20} Current Dissipation | | 5 | | 12 | mA |
| V_{P-in} | Vertical Frequency Pull-in Range | Vertical Sync 60Hz | | | | |
| | | GL150 | 10.0 | | 12.0 | Hz |
| | | GL1151 | 19.0 | | 23.0 | Hz |
| f_V | Vertical Free-Running Frequency | f_V center 55Hz | 50 | | 60 | Hz |
| Δf_{VV} | Increased/Reduced Voltage Characteristic of Vertical Frequency | $V_{20}=12 \pm 1\text{V}$ 55Hz at 12V | -0.5 | | 0.5 | Hz |
| V_{MC} | Middle-point Voltage Control Threshold Level | | 3.8 | | 4.4 | V |
| V_{OVS} | Vertical OSC Start Voltage | | | 4 | | V |
| G_V | Vertical Driver Amplification Factor | | 12 | | 18 | dB |
| I_{AFC} | Horizontal AFC DC Loop Current | | ± 1.0 | | ± 1.9 | mA |
| f_H | Horizontal Free-Running Frequency | f_H center 15.734kHz | -750 | | 750 | Hz |
| V_{OSH} | Horizontal OSC Start Voltage | | | 4 | | V |
| Δf_{HV} | Increased/Reduced Voltage Characteristic of Horizontal Frequency | $V_{10}=12 \pm 1\text{V}$ 15.734kHz at 12V | -50 | | 50 | Hz |
| V4 | Comparison Wave Generation Input Operating Voltage | | 0.6 | | 0.9 | V |
| V13 | Holddown Operation Start Voltage | | 0.5 | | 0.8 | V |
| I12 | Horizontal Drive Current | | 6.0 | | 12.0 | mA |

