

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

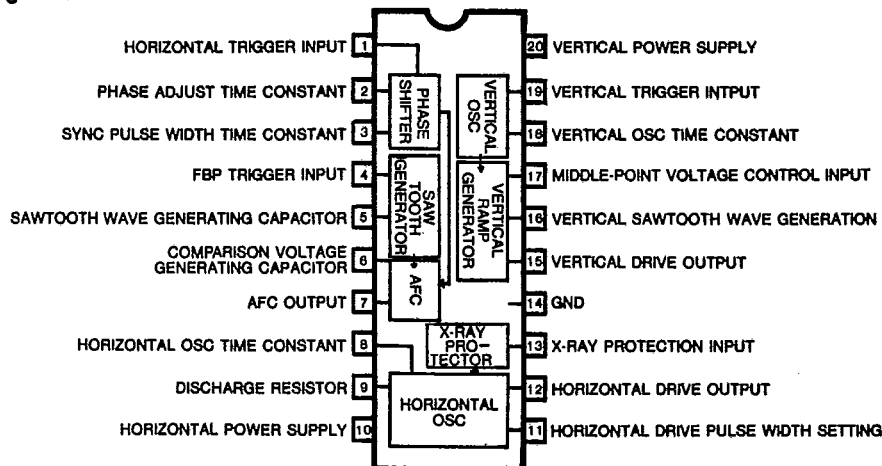
#### [Horizontal Block]

- 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 $T_{\text{opg}}$	-20 to +85 °C
Storage Temperature $T_{\text{sfg}}$	-55 to +125 °C

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

	unit
Operating Voltage Range $V_{10,20\text{-opp}}$	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
$\Delta f_V$	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
$V_{OUS}$	Vertical OSC Start Voltage			4		V
$G_V$	Vertical Driver Amplification Factor		12		18	dB
$I_{AFC}$	Horizontal AFC DC Loop Current		$\pm 1.0$		$\pm 1.9$	mA
$f_H$	Horizontal Free-Running Frequency	$f_H$ center 15.734kHz	-750		750	Hz
$V_{OSH}$	Horizontal OSC Start Voltage			4		V
$\Delta f_H$	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

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Sample Application Circuit: 14" Color Monitor/ $f_v=60\text{Hz}$ ,  $f_H=15.734\text{kHz}$

