

GL1150 SYNC., DEFLECTION CIRCUIT FOR CRT DISPLAYS

Description

The GL1150 is a sync., deflection circuit IC dedicated to CRT display use. It can be connected to the GL1130 (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 contains these peripherals on chip and adopts 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.

On-chip Functions

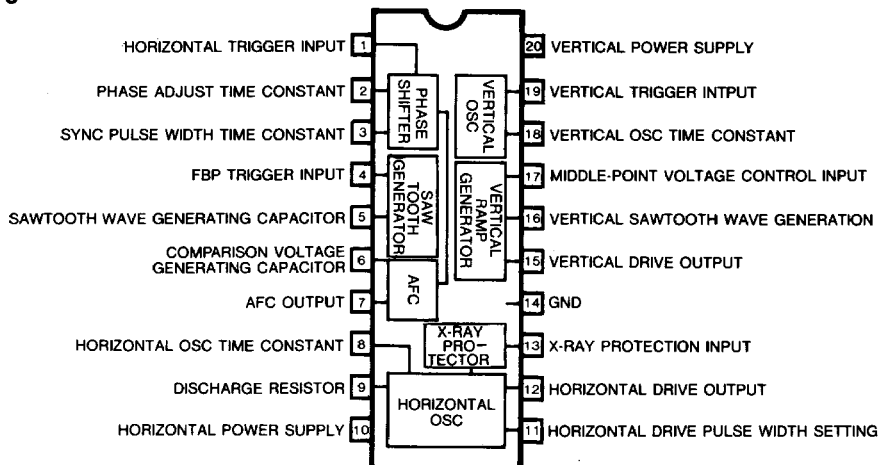
[Horizontal Block]

- AFC
- Horizontal OSC
- X-ray protector
- Horizontal phase shift
- AFC sawtooth wave generator
- Horizontal pulse duty setting

[Vertical Block]

- Vertical OSC
- Vertical sawtooth wave generator
- Sampling type DC voltage control

Pin Configuration



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 $^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +125 $^\circ\text{C}$

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}	Current Dissipation	V_{CC10}	12		30	mA
I_{20}		V_{CC20}	5		12	mA
$V_{P\text{-in}}$	Vertical Frequency Pull-in Range	Vertical sync 60Hz	10.0		12.0	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_{OUS}	Vertical OSC Start Voltage Temperature Coefficient of Vertical Frequency	$T_A = -10$ to 60°C	-0.028	4	0.028	Hz/ $^\circ\text{C}$
V_{GV}	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 Temperature Characteristic of Horizontal Frequency	$V_{10}=12 \pm 1\text{V}$ 15.734kHz at 12V $T_A = -10$ to $+60^\circ\text{C}$	-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

