

# CA1391E, CA1394E

# Preliminary Data

## TV Horizontal Processors

CA1391E — Positive Horizontal Sawtooth Input  
 CA1394E — Negative Horizontal Sawtooth Input

The RCA-CA1391E and CA1394E are monolithic integrated circuits designed for use in the low-level horizontal section of monochrome or color television receivers. Functions include a phase detector, an oscillator, a regulator, and a pre-driver.

The CA1391E and CA1394E are electrically equivalent and pin compatible with industry types 1391 and 1394 in similar packages.

These types are supplied in an 8-lead dual-in-line plastic (Mini-DIP) package, and operate over an ambient temperature range of 0 to +85°C.

**Features:**

- Internal shunt regulator
- Linear balanced phase detector
- Preset hold control capability
- ±300-Hz pull-in (typ.)
- Low thermal frequency drift
- Small static phase error
- Variable output duty cycle
- Adjustable dc loop gain

**ELECTRICAL CHARACTERISTICS**  
 At  $T_A = 25^\circ\text{C}$

CHARACTERISTIC	TYP. VALUE	UNITS
DC Supply Voltage	8.6	V
DC Supply Current (Term. 6)	20	mA
Collector-to-Emitter Saturation Voltage at Term. 1 ( $I_I = 20\text{ mA}$ )	0.15	V
Static Phase Error ( $\Delta f = 300\text{ Hz}$ )	0.5	$\mu\text{s}$
DC Input Voltage (Term. 4)	2	V
Oscillator Pull-in Range	±300	Hz
Oscillator Hold-in Range	±900	Hz

**MAXIMUM RATINGS, Absolute-Maximum**  
 Values at  $T_A = 25^\circ\text{C}$

DC SUPPLY CURRENT	40 mA
DC OUTPUT VOLTAGE	40 V
DC OUTPUT CURRENT	30 mA
SYNC INPUT VOLTAGE	5 V <sub>p-p</sub>
SAWTOOTH INPUT VOLTAGE	5 V <sub>p-p</sub>
<b>DEVICE DISSIPATION:</b>	
Up to $T_A = 25^\circ\text{C}$	625 mW
Above $T_A = 25^\circ\text{C}$ derate linearly	5 mW/ $^\circ\text{C}$
<b>AMBIENT TEMPERATURE RANGE:</b>	
Operating	0 to +85°C
Storage	-65 to +150°C
<b>LEAD TEMPERATURE (During Soldering):</b>	
At distance $1/16 \pm 1/32$ in. ( $1.59 \pm 0.79$ mm) from case for 10 seconds max.	+260°C
<b>THERMAL RESISTANCE</b>	200°C/W

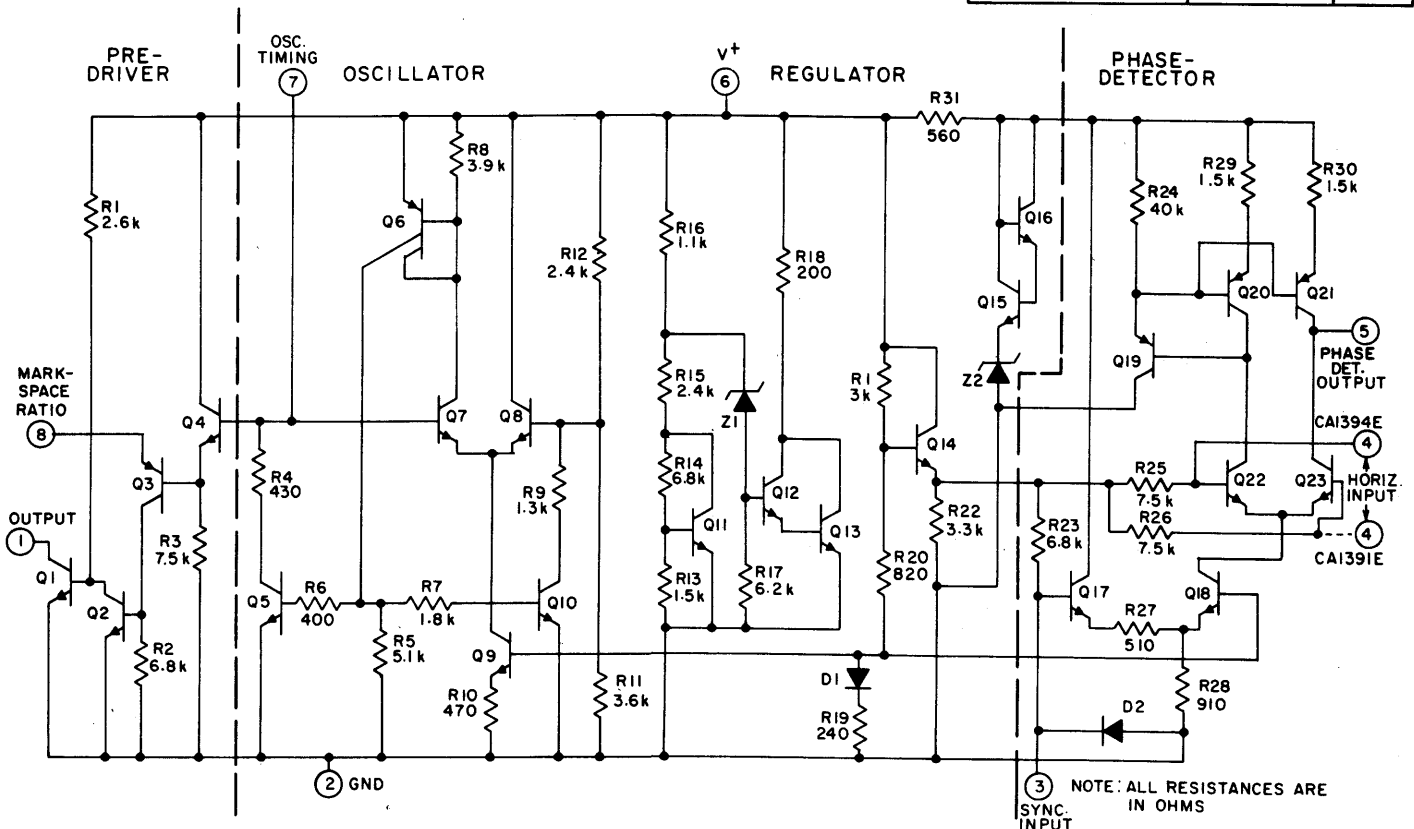


Fig.1 — Schematic diagram of CA1391E, CA1394E.

CA1391E, CA1394E

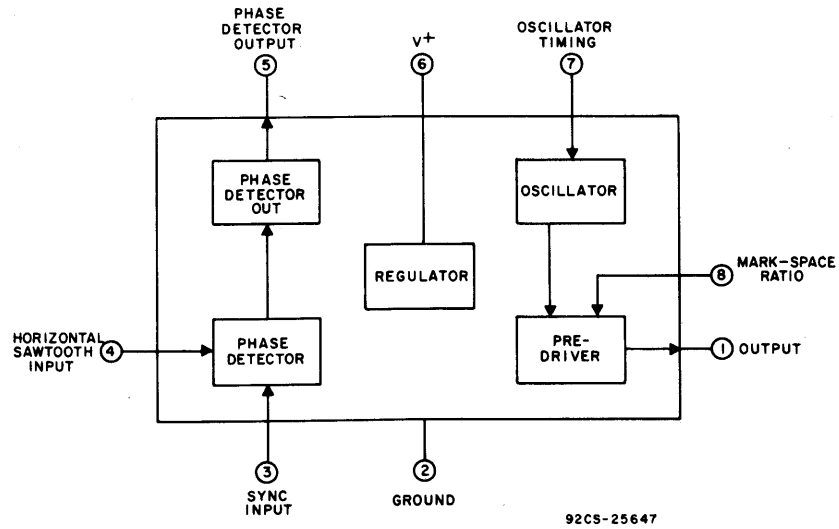


Fig.2 - Functional block diagram of the CA1391E, CA1394E.