



# STK392-040

## 3-Channel Convergence Correction Circuit (Ic max = 7A)

### Overview

The STK392-040 is a convergence correction circuit IC for video projectors. It incorporates three output amplifiers in a single package, making possible the construction of CRT horizontal and vertical convergence correction output circuits for each of the RGB colors using just two hybrid ICs.

### Applications

- Video projectors (high-definition television, high-definition graphic projectors)

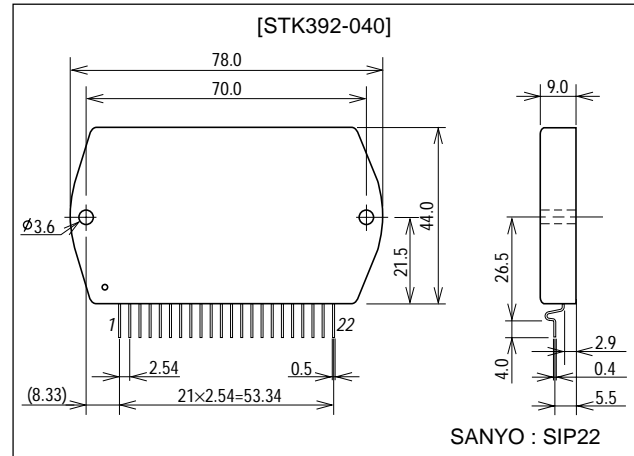
### Features

- 3 output amplifier circuits in a single package (22-pin)
- High absolute maximum supply voltage ( $V_{CC}$  max =  $\pm 50V$ )
- Low thermal resistance ( $\theta_{j-c}=1.8^{\circ}C/W$ )
- High temperature stability ( $T_C$  max= $125^{\circ}C$ )
- Separate predriver and output stage supplies
- Output stage supply switching for high-performance designs
- Pins are arranged in separate groups of inputs, supply, and outputs to reduce the adverse effects of pattern layout on characteristics and to make design easier.
- Constant-current circuit in the predriver for stable supply switching operation
- Large lineup of family devices (STK392-000 series) to cover the range from general applications to high-class applications using a single PCB

### Package Dimensions

unit:mm

4086A



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## Specifications

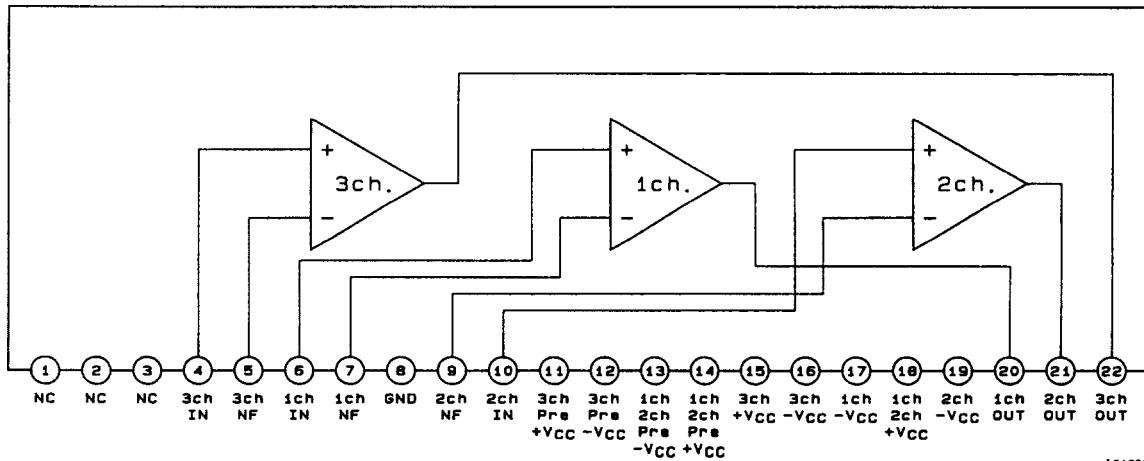
Maximum Ratings at Ta = 25°C

| Parameter                 | Symbol              | Conditions                               | Ratings     | Unit |
|---------------------------|---------------------|--|-------------|------|
| Maximum supply voltage    | V <sub>CC</sub> max |  | ±50         | V    |
| Maximum collector current | I <sub>C</sub>      | Tr8, 10, 18, 20, 28, 30                  | 7.0         | A    |
| Thermal resistance        | θ j-c               | Tr8, 10, 18, 20, 28, 30 (per transistor) | 1.8         | °C/W |
| Junction temperature      | T <sub>J</sub>      |  | 150         | °C   |
| Operating temperature     | T <sub>c</sub>      |  | 125         | °C   |
| Storage temperature       | T <sub>stg</sub>    |  | -30 to +125 | °C   |

Operating Characteristics at Ta = 25°C, Rg=50Ω

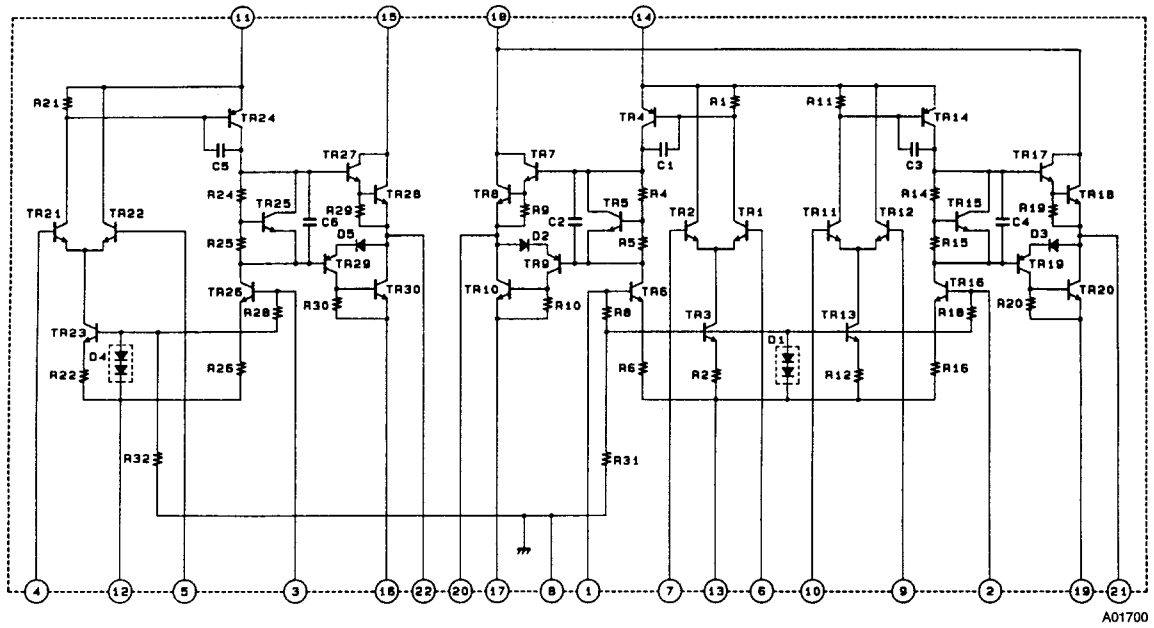
| Parameter            | Symbol           | Conditions  | Ratings |     |     | Unit  |
|----------------------|------------------|---|---------|-----|-----|-------|
|                      |                  |   | min     | typ | max |       |
| Output noise voltage | V <sub>NO</sub>  | V <sub>CC</sub> =±40V   |         |     | 0.2 | mVrms |
| Quiescent current    | I <sub>CCO</sub> | V <sub>CC</sub> =±40V   | 30      | 90  | 150 | mA    |
| Neutral voltage      | V <sub>N</sub>   | V <sub>CC</sub> =±40V   | -50     | 0   | +50 | mV    |
| Output delay time    | t <sub>D</sub>   | V <sub>CC</sub> =±40V, f=64kHz, triangular wave input, V <sub>OUT</sub> =1.5Vp-p      |         |     | 0.2 | μs    |
| Frequency response   | f <sub>H</sub>   | V <sub>CC</sub> =±35V, -3dB, (0dB at 1kHz), sine wave input, V <sub>in</sub> =50mVp-p |         | 3.8 |     | MHz   |

## Block Diagram



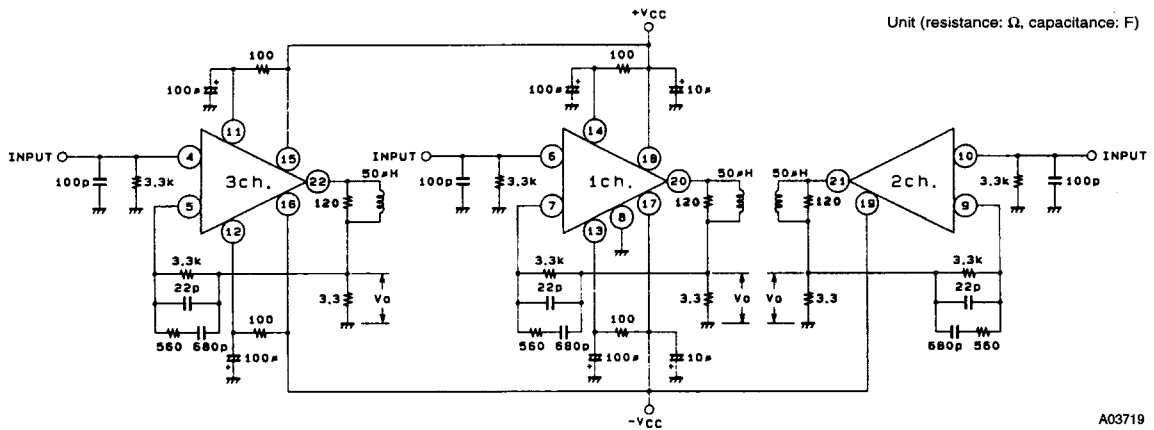
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Equivalent Circuit



A01700

Test Circuit

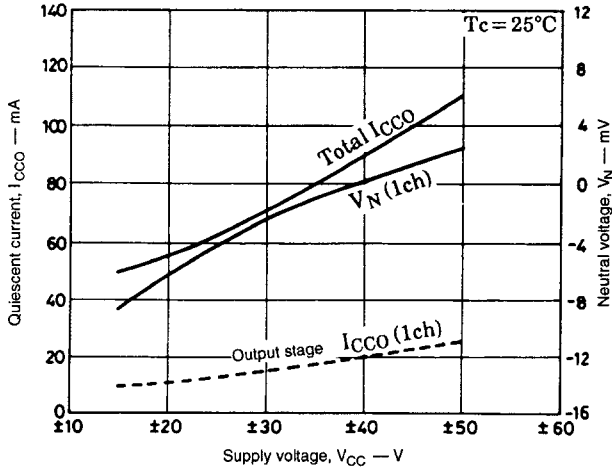


Unit (resistance: Ω, capacitance: F)

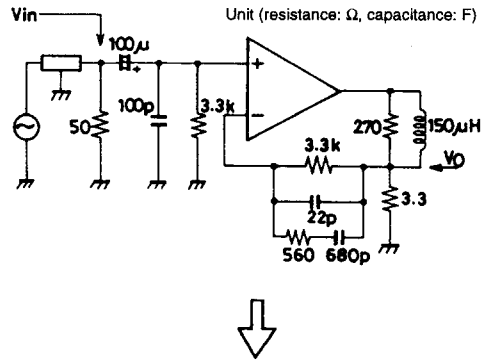
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Vo :  $V_{NO}$  is measured by connecting a VTVM.  
 $V_N$  is measured by connecting a DC voltmeter.  
 $t_D$  is measured by connecting an oscilloscope.

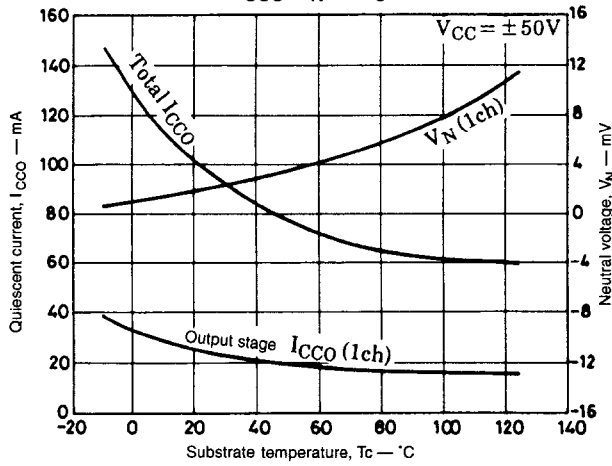
$I_{CCO}, V_N - V_{CC}$



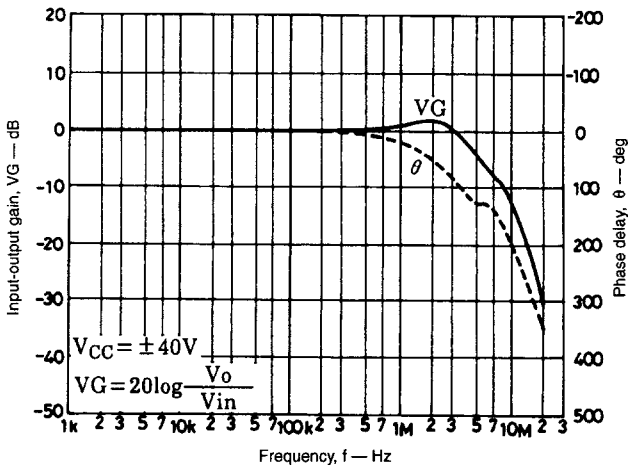
Test circuit



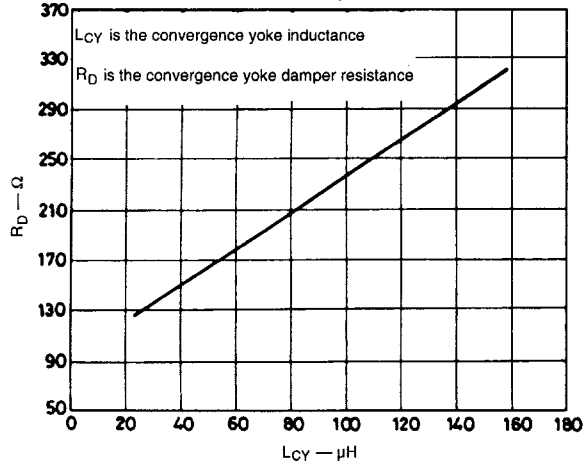
$I_{CCO}, V_N - T_c$



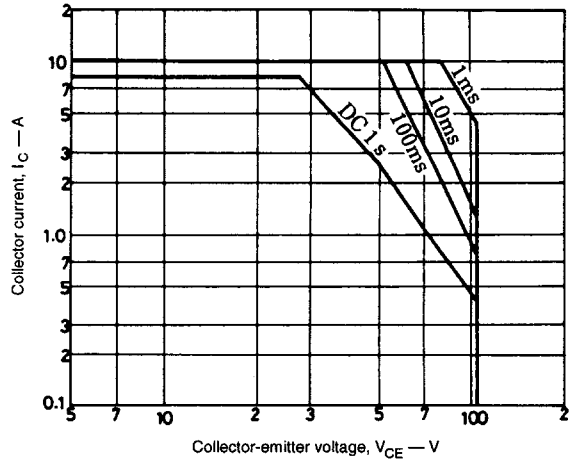
$V_G, \theta - f$



$R_D - L_{CY}$



Power transistor ASO



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