

**SANYO**

No. 5170

**STK392-110****3-Channel Convergence Correction Circuit  
( $I_C$  max = 3A)****Overview**

The STK392-110 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. The output circuits use a class-B configuration, in comparison with the STK392-010, realizing a more compact package and lower cost.

**Applications**

- Video projectors

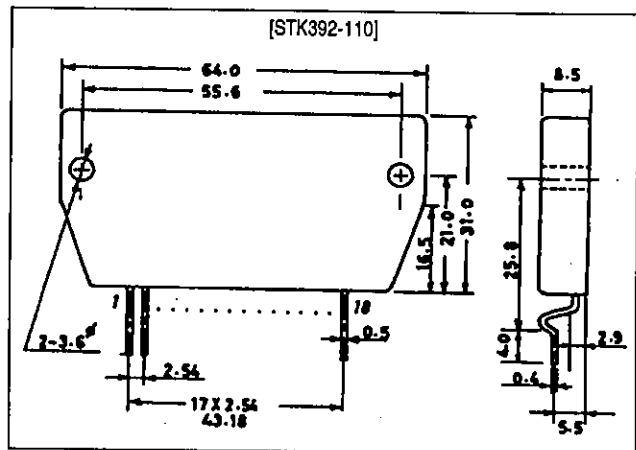
**Features**

- 3 output amplifier circuits in a single package
- High maximum supply voltage ( $V_{CC}$  max =  $\pm 38V$ )
- Low thermal resistance ( $\theta_{j-c}$  =  $3.0^\circ C/W$ )
- High temperature stability ( $T_C$  max =  $125^\circ C$ )
- Separate predriver and output stage supplies
- Output stage supply switching for high-performance designs
- Low inrush current when power is applied

**Package Dimensions**

unit: mm

4083

**Series Organization**

The following devices form a series with varying output capacity and application grade. Some of the devices below are under development, so contact your nearest sales representative for details.

| Type No.   | Maximum ratings |           |                 | Maximum horizontal frequency<br>$f_H$ max | Application grade      |
|------------|-----------------|-----------|-----------------|---|------------------------|
|            | $V_{CC}$ max    | $I_C$ max | $\theta_{j-c}$  |   |                        |
| STK392-110 | $\pm 38V$       | 3A        | $3.0^\circ C/W$ | 15kHz                                     | General projection TVs |
| STK392-010 | $\pm 38V$       | 5A        | $2.6^\circ C/W$ | 15kHz                                     | General projection TVs |
| STK392-020 | $\pm 44V$       | 6A        | $2.1^\circ C/W$ | 35kHz                                     | HD, VGA                |
| STK392-040 | $\pm 50V$       | 7A        | $1.8^\circ C/W$ | 100kHz                                    | XGA, CAD, CAM          |
| STK392-210 | $\pm 65V$       | 8A        | $1.5^\circ C/W$ | 130kHz                                    | CAD, CAM               |
| STK392-220 | $\pm 75V$       | 10A       | $1.3^\circ C/W$ | 160kHz                                    | CAD, CAM               |

## Specifications

### Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter                       | Symbol               | Conditions                                 | Ratings     | Unit               |
|---------------------------------|----------------------|--|-------------|--------------------|
| Maximum supply voltage          | $V_{CC \text{ max}}$ |  | $\pm 38$    | V                  |
| Maximum collector current       | $I_C$                | Tr6, 7, 13, 14, 20, 21                     | 3.0         | A                  |
| Thermal resistance              | $\theta_{j-c}$       | Tr6, 7, 13, 14, 20, 21<br>(per transistor) | 3.0         | $^\circ\text{C/W}$ |
| Junction temperature            | $T_j$                |  | 150         | $^\circ\text{C}$   |
| Operating substrate temperature | $T_c$                |  | 125         | $^\circ\text{C}$   |
| Storage temperature             | $T_{stg}$            |  | -30 to +125 | $^\circ\text{C}$   |

### Operating Characteristics at $T_a = 25^\circ\text{C}$ , $R_g = 50\Omega$ , $V_{CC} = \pm 30\text{V}$ , specified test circuit

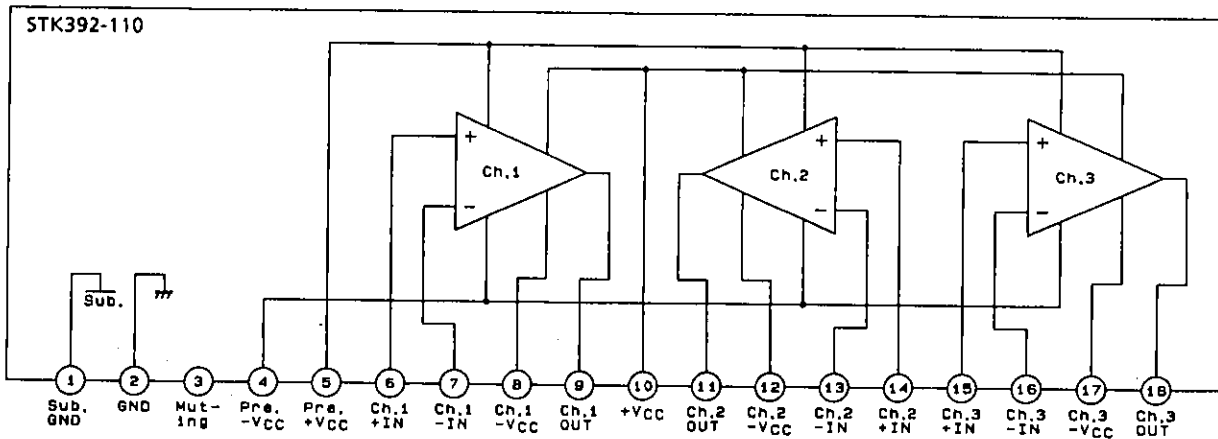
| Parameter            | Symbol    | Conditions   | min | typ | max | Unit          |
|----------------------|-----------|--|-----|-----|-----|---------------|
| Output noise voltage | $V_{NO}$  |  | -   | -   | 0.2 | mVrms         |
| Quiescent current    | $I_{CCO}$ |  | 15  | 22  | 30  | mA            |
| Neutral voltage      | $V_N$     |  | -50 | 0   | +50 | mV            |
| Output delay time    | $t_D$     | $f = 15.75\text{kHz}$ , triangular wave<br>input, $V_{OUT} = 1.5\text{Vp-p}$ | -   | -   | 1   | $\mu\text{s}$ |

**Notes.**

All tests are conducted using a constant-voltage regulated supply unless otherwise specified.

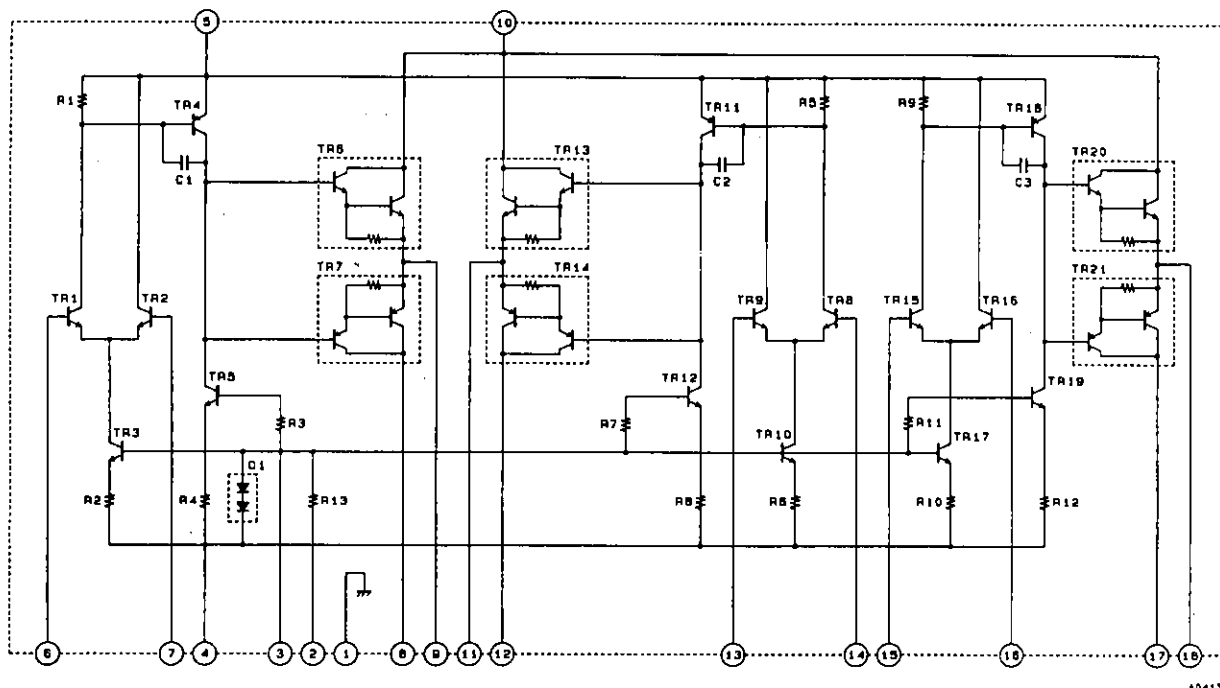
The output noise voltage is the peak value of an average-reading meter with an rms value scale (VTVM).

## Block Diagram



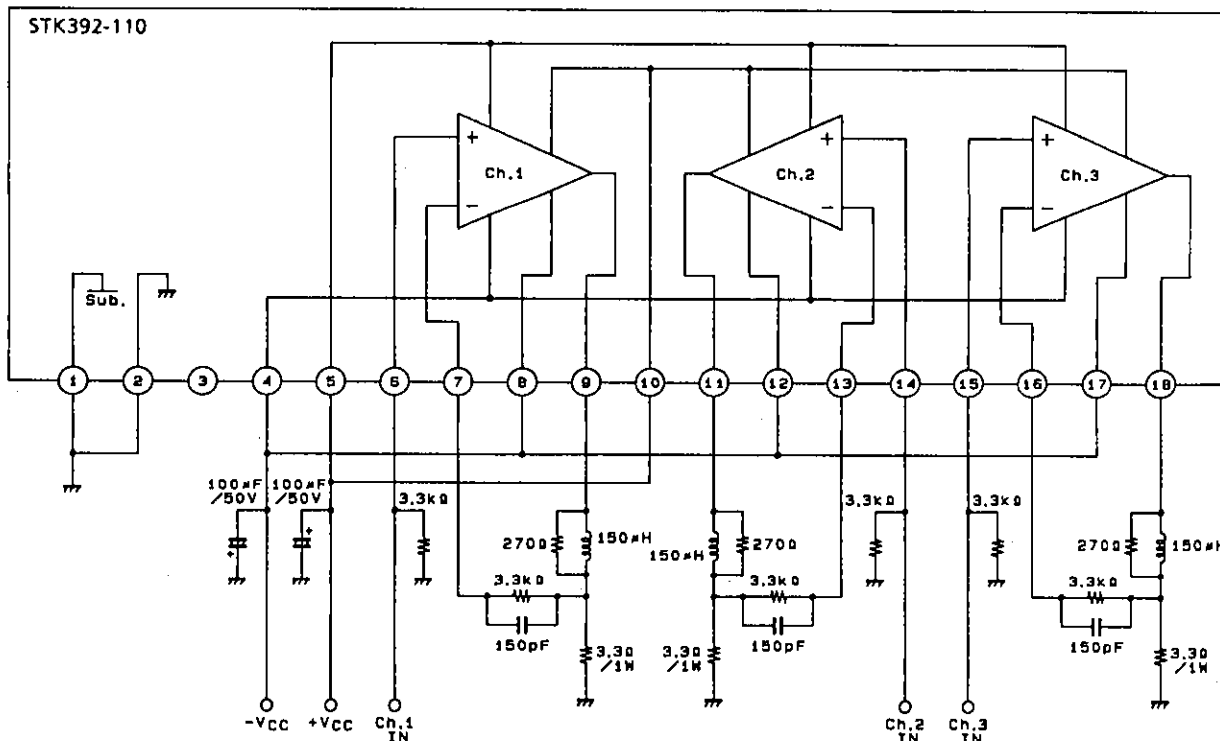
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Equivalent Circuit



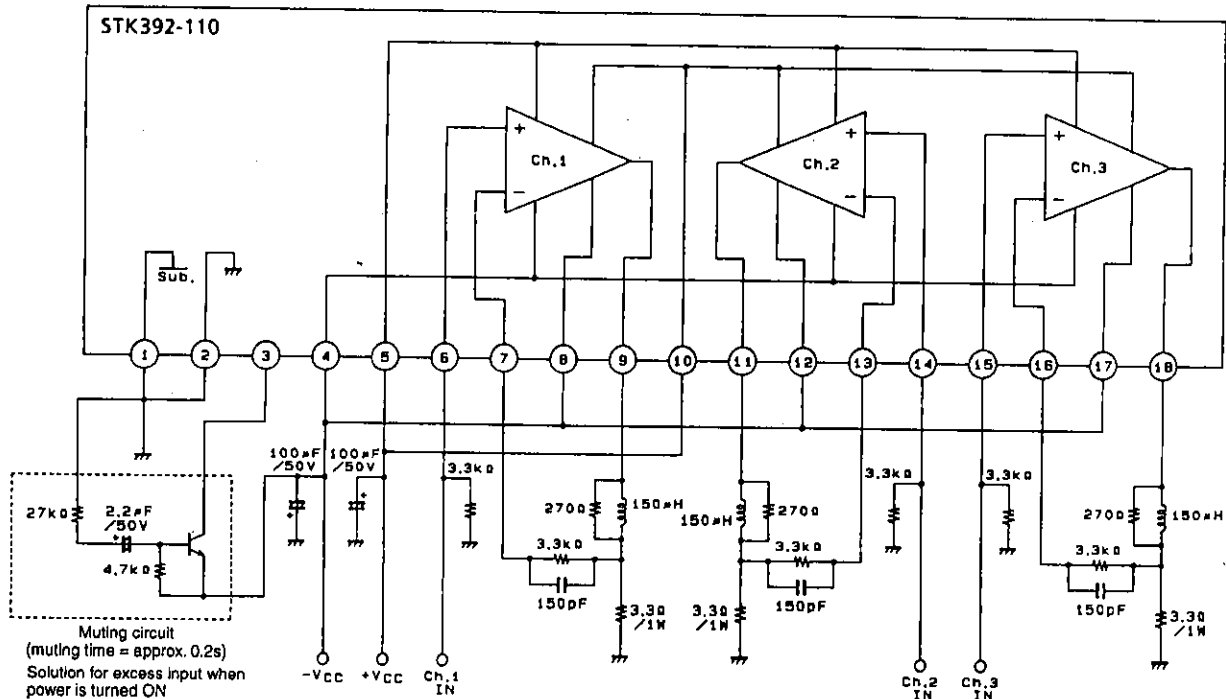
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Test Circuit



A04132

Sample Application Circuit



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