

IMST

TENTATIVE

Thick Film Hybrid IC

**STK392-120**

## Convergence Correction Amplifier

3 Channel / 1 Package

Output Current 4A

- Overview .....

The STK392-120 is a convergence correction amplifier one package hybrid IC for video projector.  
This IC has three output amplifiers in the hybrid IC.  
Consequently, total six circuits of vertical and horizontal amplifiers in each CRT (R, G, B) corresponds to two hybrid ICs (STK392-120 × 2).
- Application .....
  - ◆ Video Projector  
(General Projection TV)
- Feature .....
  - ◆ 3 channel/1 package(18pins).
  - ◆ Higher maximum supply voltage( $V_{cc\ max} = \pm 44V$ )
  - ◆ Lower thermal resistance( $\theta_{j-c} = 2.7^{\circ}C/W$ )
  - ◆ Excellent thermal stability( $T_c\ max = 125^{\circ}C$ )
  - ◆ Power supplies of pre driver and output driver amplifier block are independent.
  - ◆ Capable of designing of high efficiency by substituting power supply of output block.
  - ◆ Lower rush current at power switch ON.
  - ◆ B class amplifier using pure complimentary circuit.

## ■ Electrical Characteristics .....

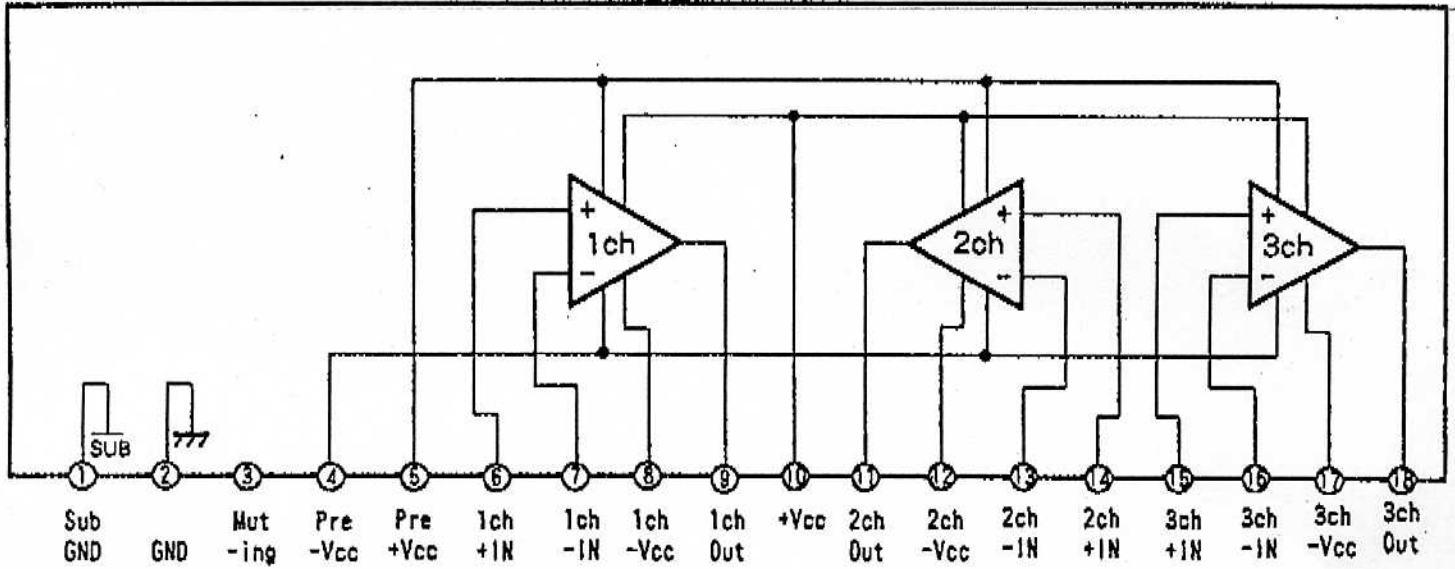
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Conditions	Rated	Units
Supply Voltage	$V_{CC}$		$\pm 44$	V
Maximum Collector Current	$I_C$	Tr6, 7, 13, 14, 20, 21	$\pm 4.0$	A
Thermal Resistance	$\theta_{j-c}$	Tr6, 7, 13, 14, 20, 21 (Per a Tr)	2.7	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$		150	$^\circ\text{C}$
Operating Case Temperature	$T_c$		125	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-30 to +125	$^\circ\text{C}$

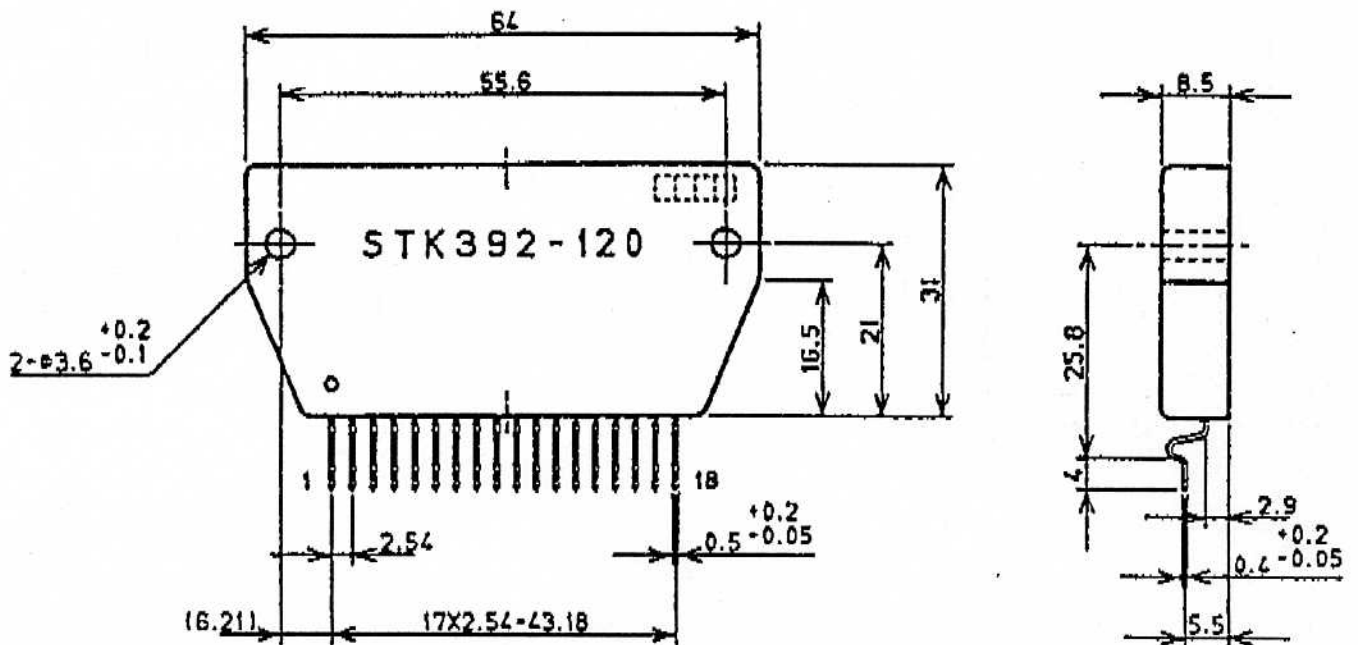
### Operating Characteristics ( $T_a = 25^\circ\text{C}$ , $R_g = 50\ \Omega$ )

Item	Symbol	Conditions			Rated			Units
		$V_{CC}$ (V)	f (Hz)		min.	typ.	max.	
Output Noise Voltage	$V_o$	$\pm 35$					0.2	mVrms
Quiescence Current	$I_{CCQ}$	$\pm 35$			16	23	31	mA
Neutral Voltage	$V_n$	$\pm 35$			-50	0	+50	mV
Output Delay Time	$t_o$	$\pm 35$	15.75k	Triangular wave Input $V_{in} = 1.5V_{r-p}$			1	$\mu\text{s}$

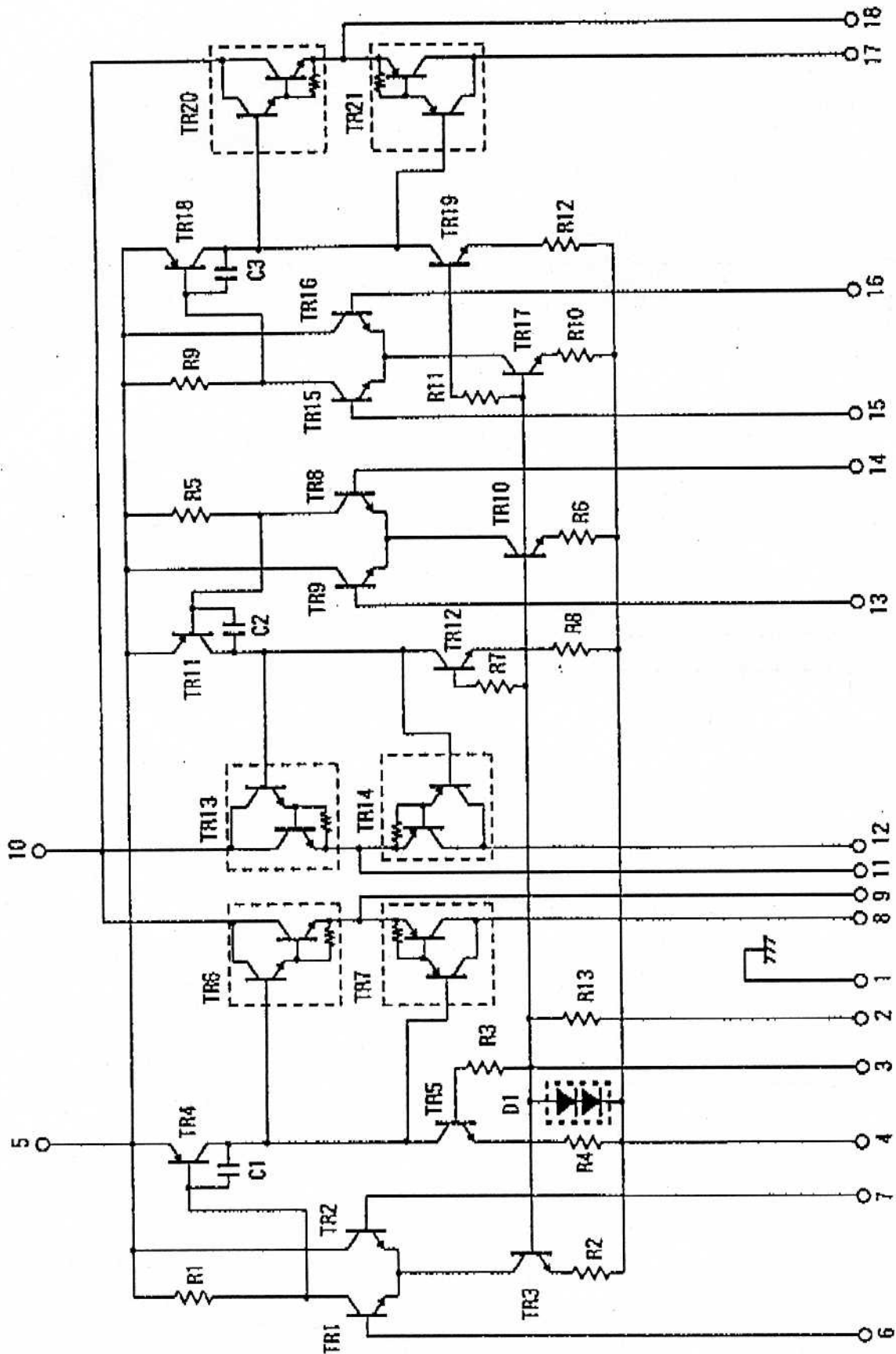
■ Block Diagram .....



■ Case Outline .....

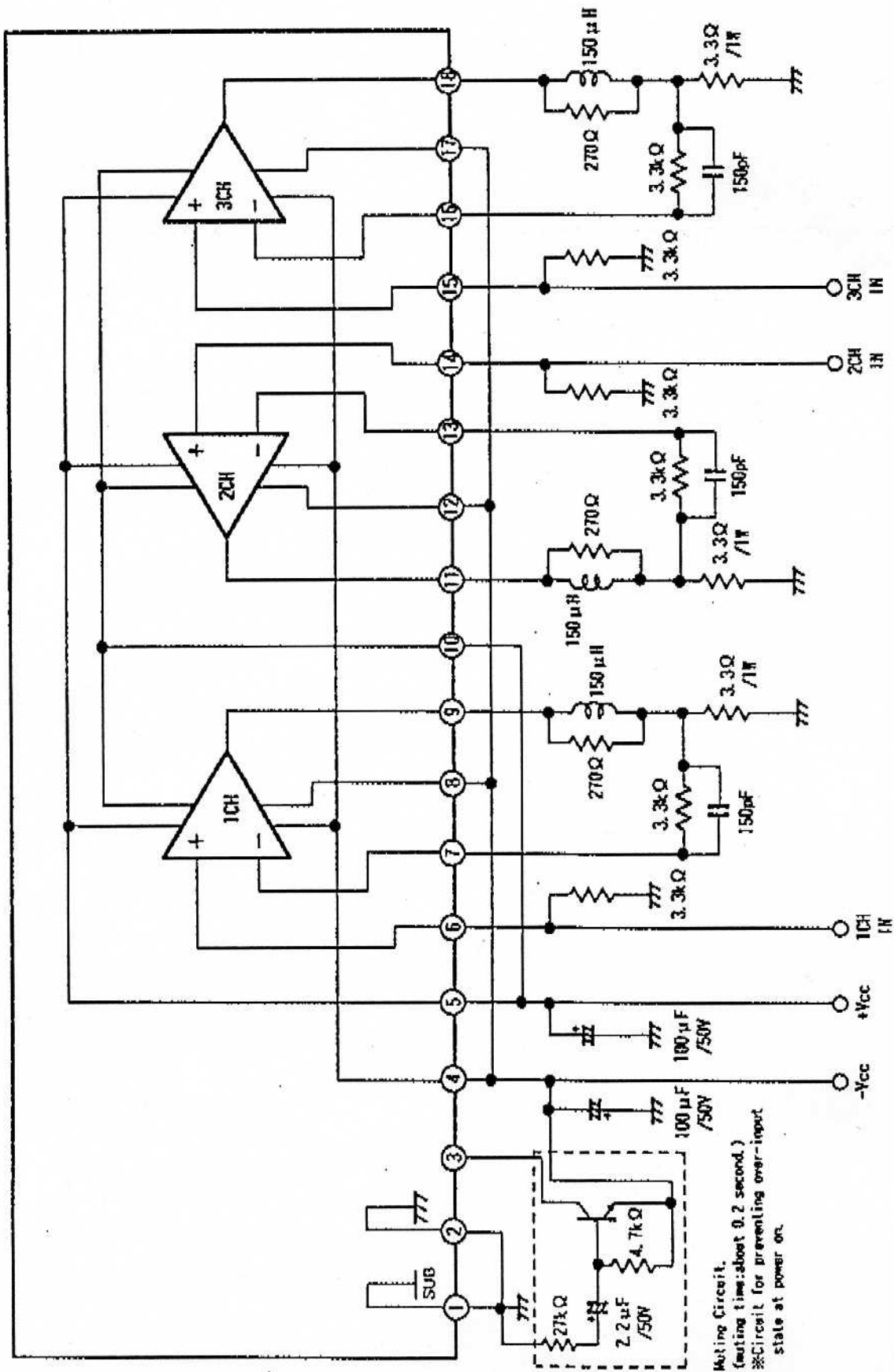


■ Equivalent Circuit.....

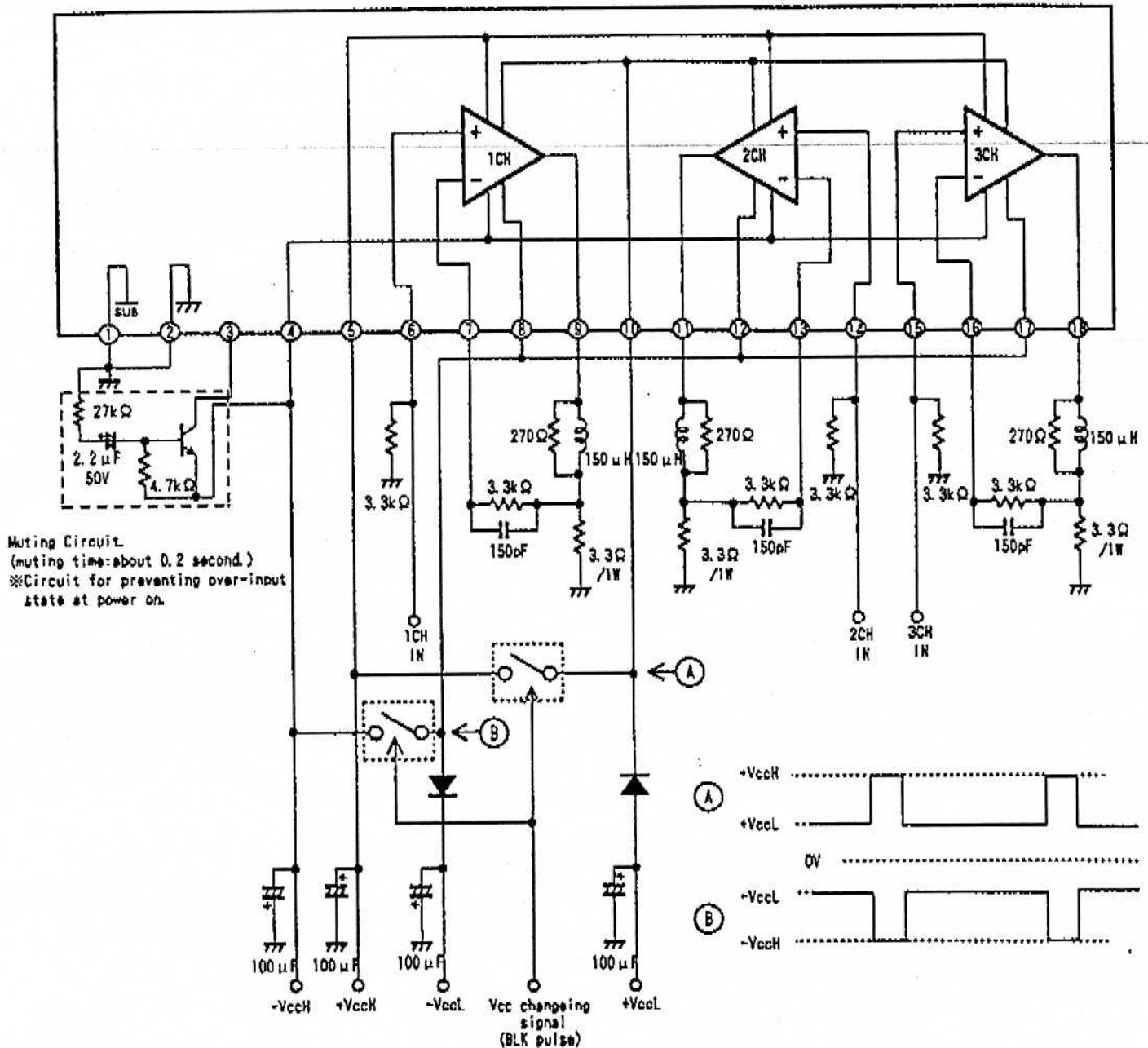


# Sample Application Circuit.....

## Fixed Power Supply Method



## Changing Power Supply Method



<Explanation of changing power supply method.>

In convergence correction amplifier circuit, circuit method changing power supply voltage for output stage is occasionally applied in order to reduce power consumption.

Timing of changing power supply voltage is a changing point from trace period to retrace period.

Each power supply of the STK392-110 is shown below.

Front stage power supply, Pin ⑤ Pre + Vcc (+ VccH)

Pin ④ Pre - Vcc (- VccH)

Output stage power supply (Changing power supply)

Pin ⑩ + Vcc (trace period : + VccL / retrace period : + VccH)

Pin ⑧, ⑫, ⑰ - Vcc (trace period : - VccL / retrace period : - VccH)

Circuit for changing power supply adopts generally a method of changing  $\pm VccL$  by a transistor.

VccH is limited by absolute maximum rating Vcc max. but, VccL can be reduced in the range of non clipping output voltage at trace period.