Ordering number:ENN5081

Thick Film Hybrid IC

STK392-040

3-Channel Convergence Correction Circuit (I_C 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 ust two hybrid ICs.

Applications

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

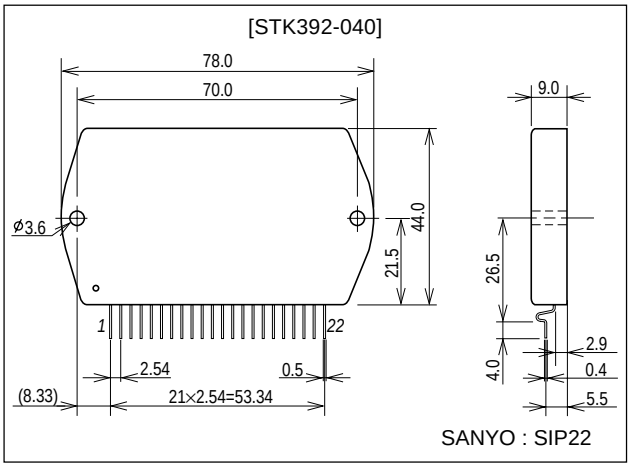
Features

- 3 output amplifier circuits in a single package (22-pin)
- High absolute maximum supply voltage (V_{CC} max = ±50V)
- Low thermal resistance (θj-c=1.8°C/W)
- High temperature stability (T_C max=125°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 applicatoins to high-class applications using a single PCB

Package Dimensions

unit:mm

4086A



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Specifications

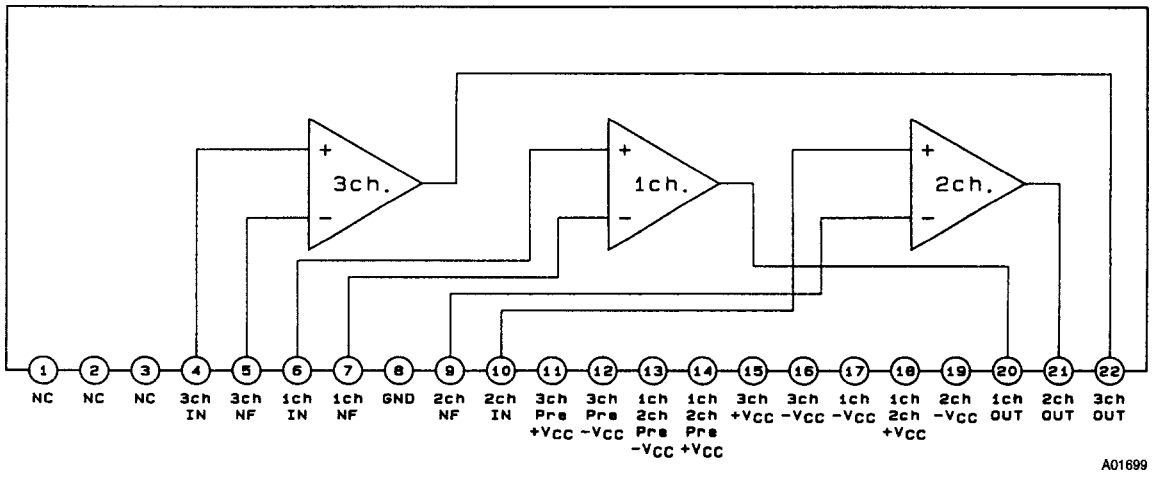
Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		±50	V
Maximum collector current	I_C	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	Tj		150	˚C
Operating temperature	Tc		125	˚C
Storage temperature	Tstg		–30 to +125	˚C

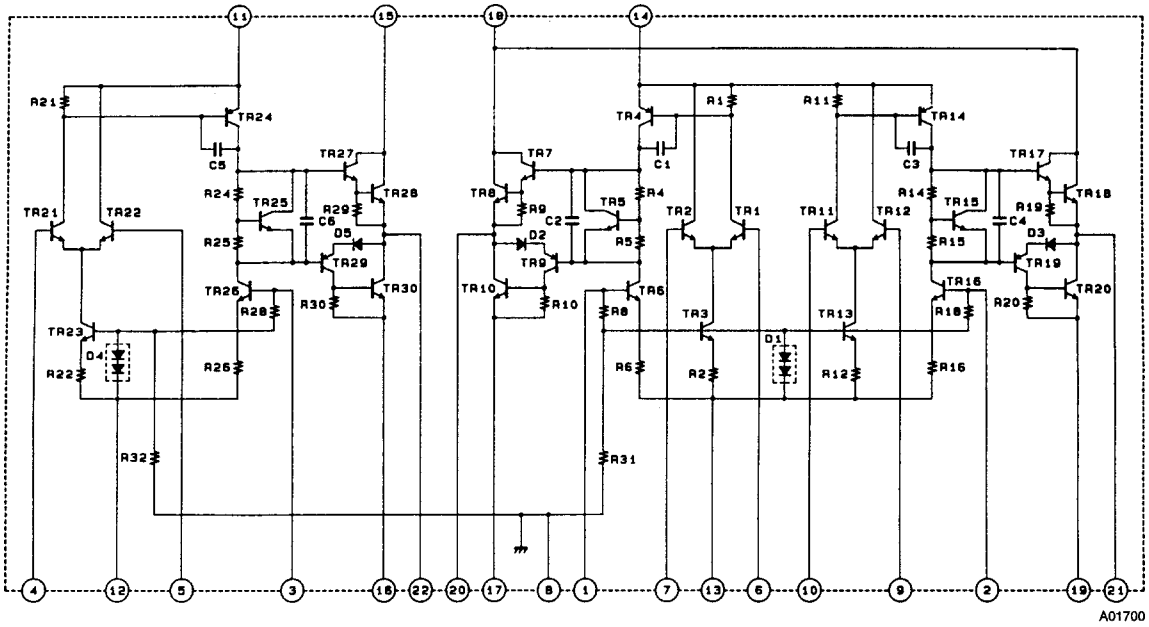
Operating Characteristics at Ta = 25˚C, Rg=50Ω

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Output noise voltage	V_{NO}	V_{CC}=±40V			0.2	mVrms
Quiescent current	I_{CCO}	V_{CC}=±40V	30	90	150	mA
Neutral voltage	V_N	V_{CC}=±40V	–50	0	+50	mV
Output delay time	t_D	V_{CC}=±40V, f=64kHz, triangular wave input, V_{OUT}=1.5Vp-p			0.2	µs
Frequency response	f_H	V_{CC}=±35V, –3dB, (0dB at 1kHz), sine wave input, V_{in}=50mVp-p		3.8		MHz

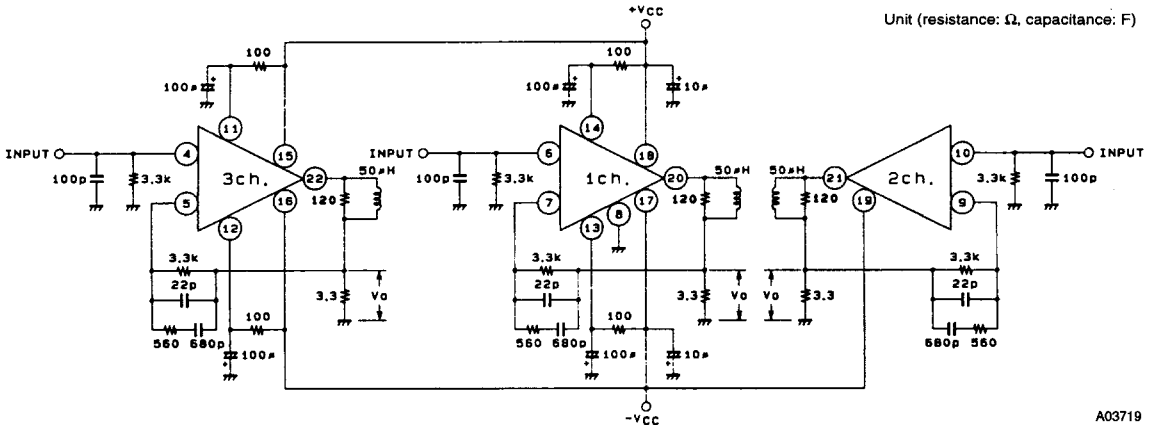
Block Diagram



Equivalent Circuit

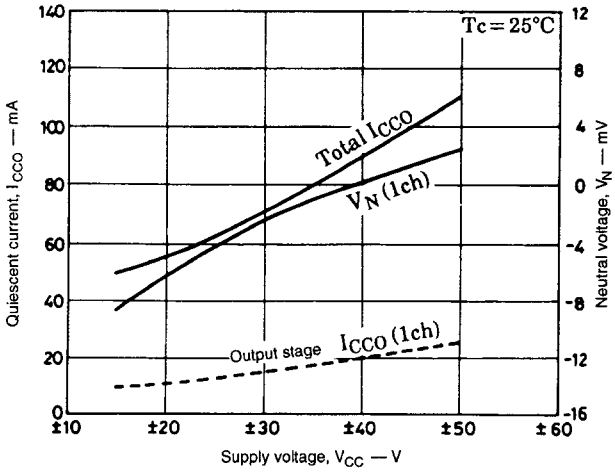


Test Circuit

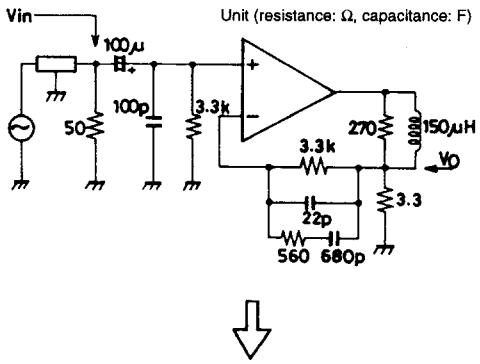


Vo : V_{NO} is measured by connecting a VTVM.
V_N is measured by connecting a DC voltmeter.
t_D is measured by connecting an oscilloscope.

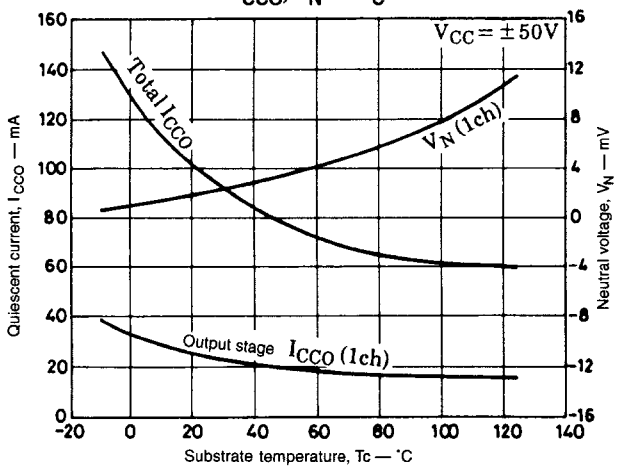
I_{CCO}, V_N — V_{CC}



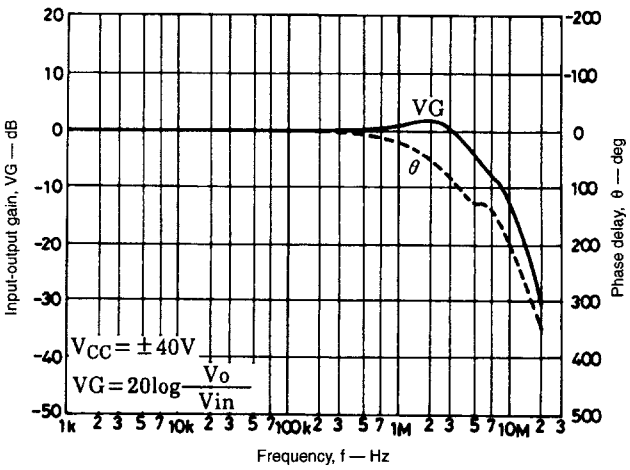
Test circuit



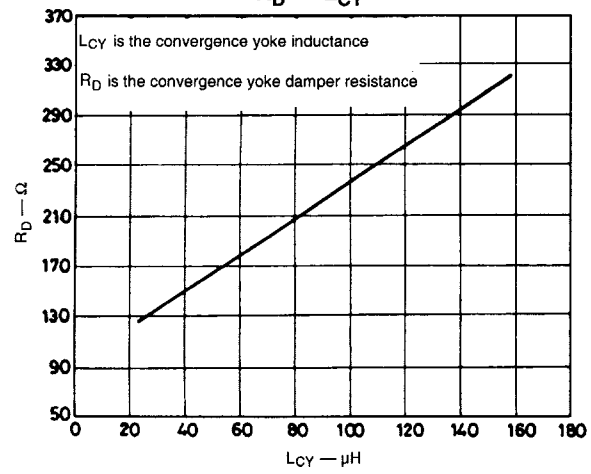
I_{CCO}, V_N — T_C



VG, θ — f



R_D — L_{CY}



Power transistor ASO