Ordering number:ENN*5172

Thick Film Hybrid IC

STK405-110

2ch AF Power Amplifier (Split Power Supply) (70W + 70W min, THD = 10%)

Preliminary

Overview

The STK405-110, a member of the STK405-000 series, is a low-cost, 2-channel audio power amplifier hybrid IC that is ideal for a wide range of stereo sets. It has dedicated 6Ω output drive, in contrast with the STK401-000 series which supports 6Ω/3Ω output drive.

Features

- Class B amplifiers
- Output load impedance R_L=6Ω support
- EIAJ-output compatible (f=1kHz, THD=10%)
- Low supply switching shock noise
- Pin assignment grouped into individual blocks of inputs, outputs and supply lines to minimize the adverse effects of pattern layout on operating characteristics
- External boostrap circuit not necessary
- Standby operation possible using external circuit
- Voltage gain VG=26dB for easy gain distribution within the set
- Member of 10W/ch to 80W/ch pin-compatible series

Series Organization

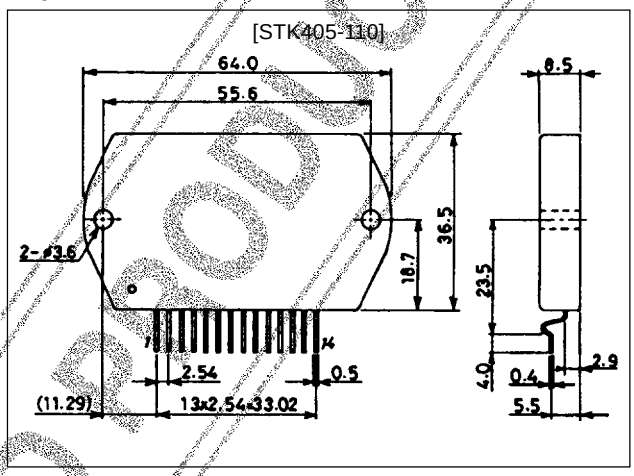
The following devices form a series with differing output capacity. Some of the following devices are under development. Contact your Sanyo sales representative if you require more detailed information.

Type No.	Output power	Supply voltage [V]	
		V_{CC} max	V_{CC}
STK405-010	10W + 10W	±26.0	±14.0
STK405-030	20W + 20W	±30.5	±18.5
STK405-050	30W + 30W	±34.5	±22.0
STK405-070	40W + 40W	±39.0	±25.0
STK405-090	50W + 50W	±42.0	±26.5
STK405-100	60W + 60W	±45.0	±29.0
STK405-110	70W + 70W	±50.0	±31.0
STK405-120	80W + 80W	±52.5	±33.0

Package Dimensions

unit:mm

4162



Specifications

Maximum Ratings at Ta = 25˚C

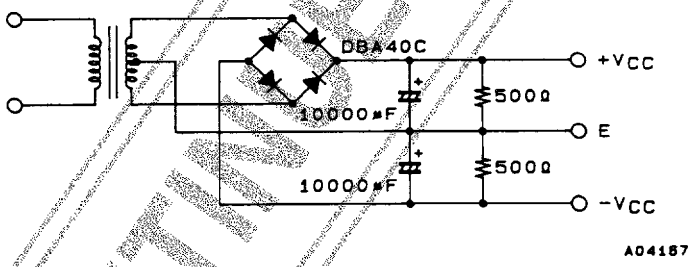
Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		±50.0	V
Thermal resistance	θ j-c	Per power transistor	1.8	˚C/W
Junction temperature	Tj		150	˚C
Operating temperature	Tc		125	˚C
Storage temperature	Tstg		–30 to +125	˚C
Available time for load short-circuit	t_S	V_{CC}=±31.0V, R_L=6Ω, f=50Hz, P_O=70W	1	s

Operating Characteristics at Ta = 25˚C, R_L=6Ω (noninductive load), Rg=600Ω, VG=26dB

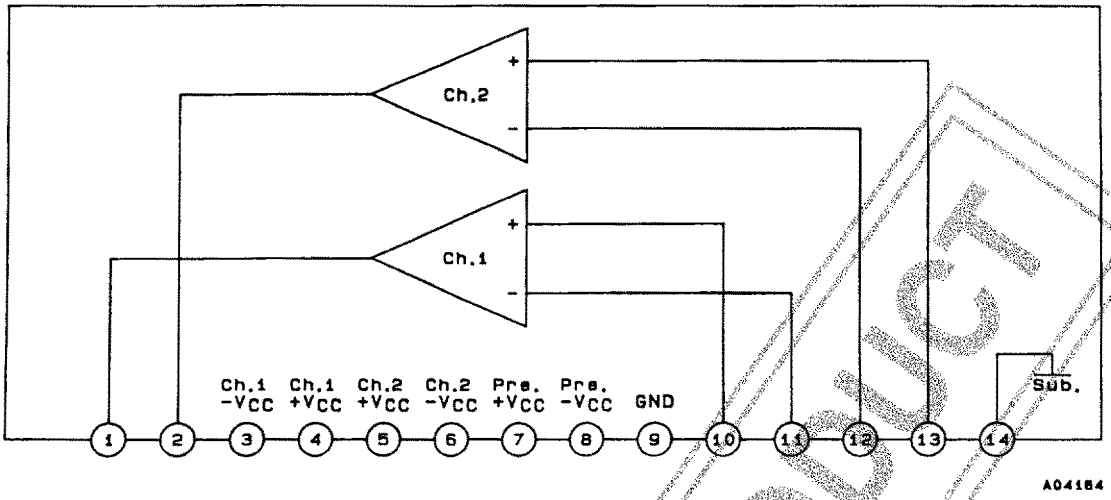
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	I_{CCO}	V_{CC}=±39.5V, no load		13	20	mA
Output power	P_O	V_{CC}=±31.0V, f=1kHz, THD=10.0%	70			W
Total harmonic distortion	THD	V_{CC}=±31.0V, f=1kHz, P_O=5.0W		0.04	0.1	%
Frequency response	f_L, f_H	V_{CC}=±31.0V, P_O=1.0W, $^{+0}_{-3}$ dB		20 to 50k		Hz
Input impedance	r_i	V_{CC}=±31.0V, f=1kHz, P_O=1.0W		55		kΩ
Output noise voltage	V_{NO}	V_{CC}=±39.5, Rg=10kΩ			1.2	mVrms
Neutral voltage	V_N	V_{CC}=±39.5V	–100	0	+100	mV

Note.
All tests are measured using a constant-voltage supply unless otherwise specified.
Available time for load short-circuit and output noise voltage are measured using the transformer supply specified below.
The output noise voltage is the peak value of an average-reading meter with an rms value scale (VTVM). A regulated AC supply (50Hz) should be used to eliminate the effects of AC primary line flicker noise.

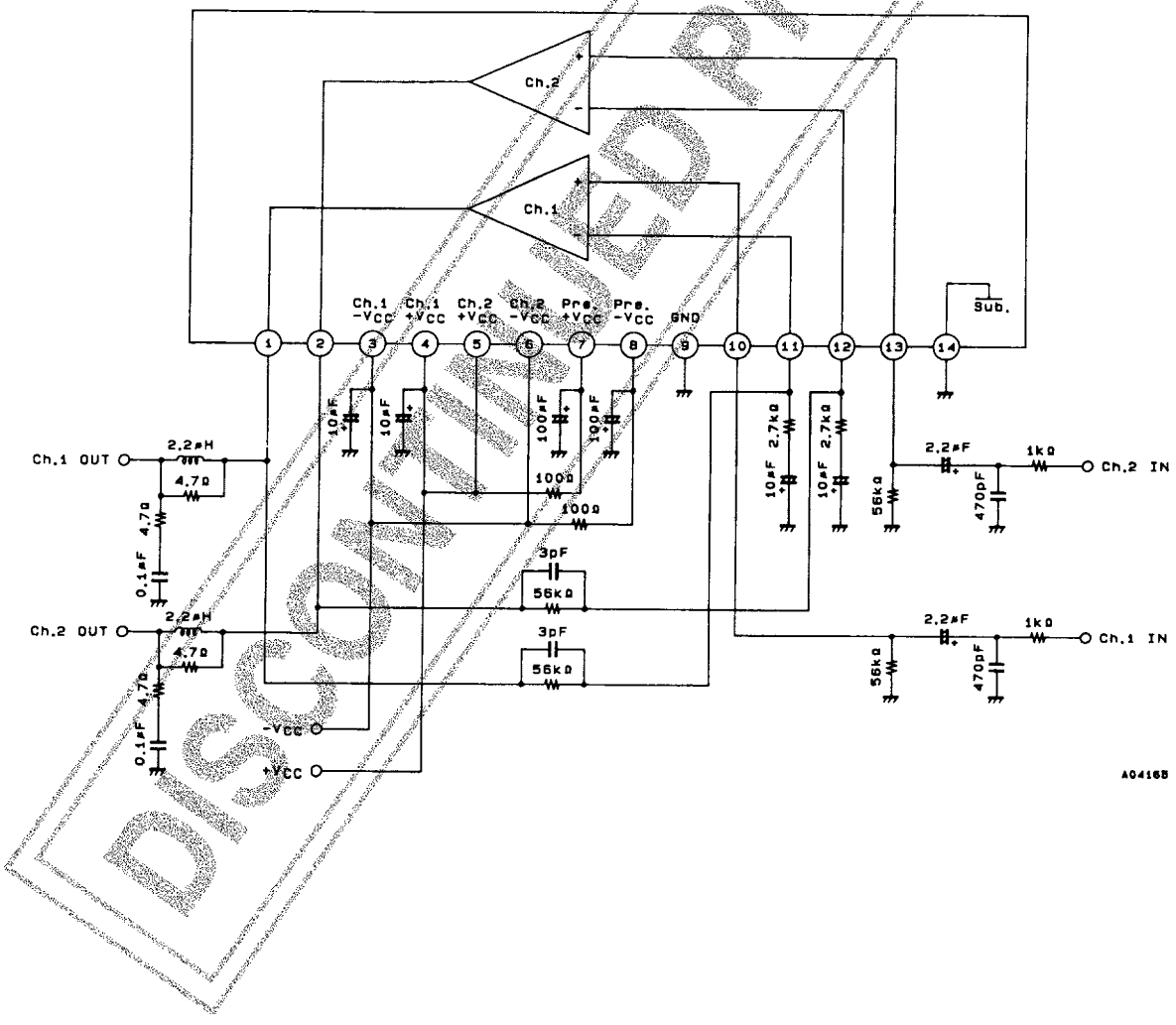
Specified Transformer Supply (MG-200 or Equivalent)



Block Diagram



Test Circuit



Sample Application Circuit (Standby Mode Supported)