

<b>SANYO</b>	No. ※ 5172	<b>STK405-110</b>
	<b>2ch AF Power Amplifier (Split Power Supply)</b> <b>70W + 70W min, THD = 10%</b>	

## 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  $R_L = 6\Omega$  support
- EIAJ-output compatible ( $f = 1\text{kHz}$ , 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 bootstrap 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

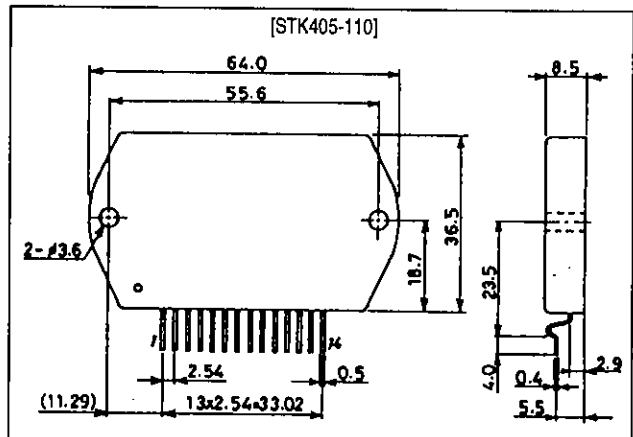
The following devices form a series with differing output capacity. Some of the following devices are under development. Contact your Sanyo sales representative if you require more detailed information.

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

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## Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC \text{ max}}$		$\pm 50.0$	V
Thermal resistance	$\theta_{j-c}$	Per power transistor	1.8	$^\circ\text{C/W}$
Junction temperature	$T_j$		150	$^\circ\text{C}$
Operating substrate temperature	$T_c$		125	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-30 to +125	$^\circ\text{C}$
Available time for load short-circuit	$t_s$	$V_{CC} = \pm 31.0\text{V}$ , $R_L = 6\Omega$ , $f = 50\text{Hz}$ , $P_O = 70\text{W}$	1	s

### Operating Characteristics at $T_a = 25^\circ\text{C}$ , $R_L = 6\Omega$ (noninductive load), $R_g = 600\Omega$ , $V_G = 26\text{dB}$

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

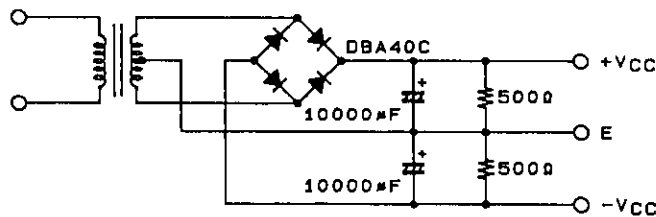
**Notes.**

All tests are measured using a regulated voltage supply unless otherwise specified.

Available time for load short-circuit and output noise voltage are measured using the transformer supply specified below.

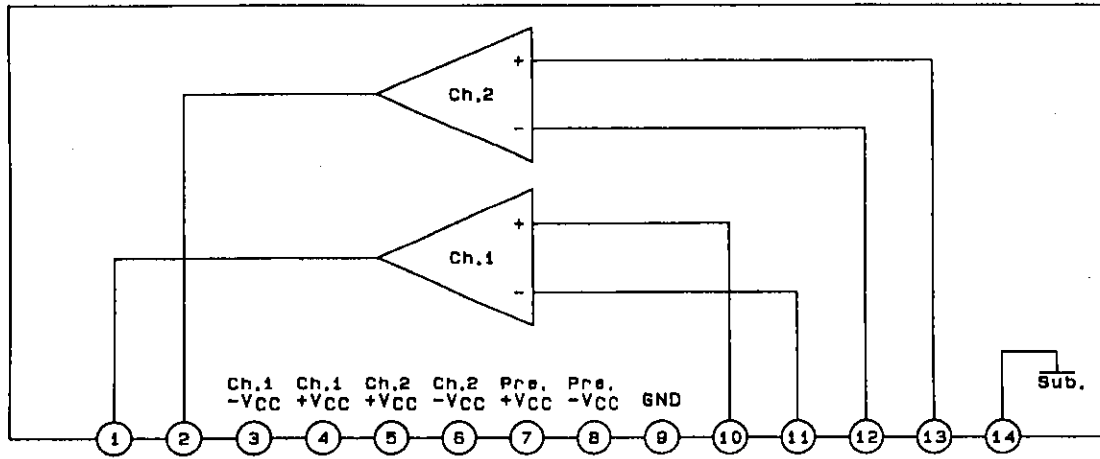
The output noise voltage is the peak value of an average-reading meter with an rms value scale (VTVM). A regulated AC supply (50Hz) should be used to eliminate the effects of AC primary line flicker noise.

### Specified Transformer Supply (MG-200 or Equivalent)



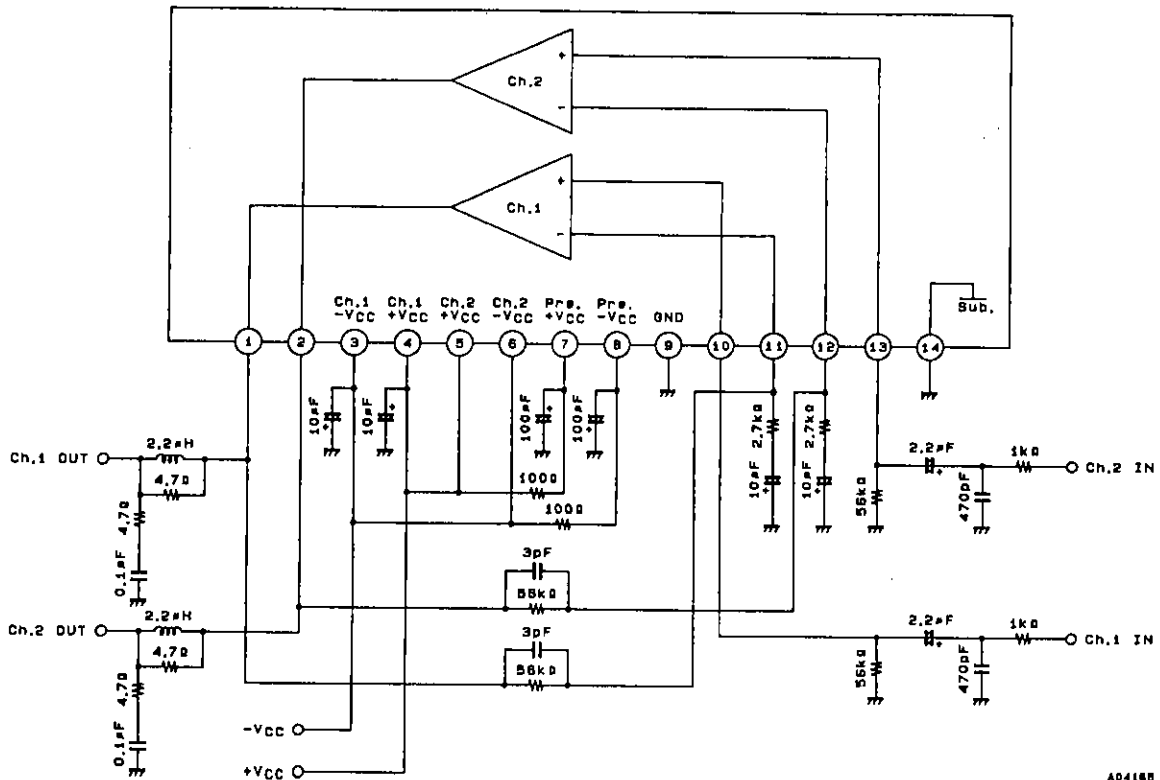
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Block Diagram



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Test Circuit



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