

No. * 5172

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 $6\Omega/3\Omega$ output drive.

Features

- · Class B amplifiers
- Output load impedance $R_L = 6\Omega$ 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 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

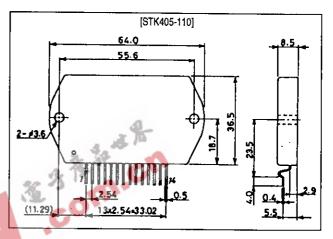
The following devices form a series with differing output capacity. Some of the following devices are under development. Contact your Sanyo sales representative if you require more detailed information.

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 Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V _{CC} max		±50.0	v
Thermal resistance	θj-c	Per power transistor	1.8	°C/W
Junction temperature	Tj		150	°C
Operating substrate temperature	Tc		125	°C
Storage temperature	Tstg		-30 to +125	°C
Available time for load short-circuit	t _s	$V_{CC} = \pm 31.0V$, $R_L = 6\Omega$, $f = 50Hz$, $P_O = 70W$	1	s

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

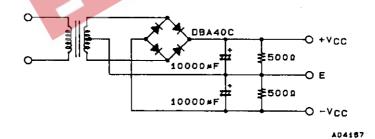
Parameter	Symbol	Conditions	mln	typ	max	Unit
Quiescent current	I _{cco}	V _{CC} = ±39.5V, no load	 -	13	20	mA
Output power	Po	V _{CC} = ±31.0V, f = 1kHz, THD = 10.0%	70	-		W
Total harmonic distortion	THD	V _{CC} = ±31.0V, f = 1kHz, P _O = 5.0W	-	0.04	0.1	%
Frequency response	f _L , f _H	$V_{CC} = \pm 31.0V, P_{O} = 1.0W, \frac{+0}{-3} dB$	- 4	20 to 50k	-	Hz
Input impedance	r _i	V _{CC} = ±31.0V, f = 1kHz, P _O = 1.0W	4, 35 /	55	_	kΩ
Output noise voltage	V _{NO}	$V_{CC} = \pm 39.5V$, $Rg = 10k\Omega$	- 6	- 1	1.2	mVrms
Neutral voltage	V _N	V _{CC} = ±39.5V	-100	0	+100	mV

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

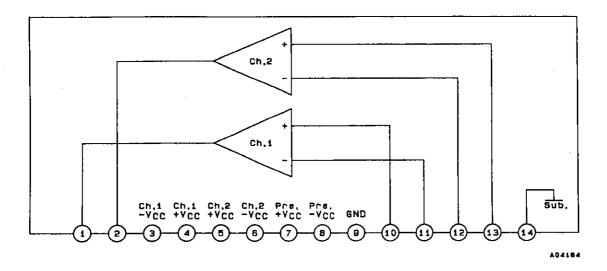
Available time for load short-circuit and output noise voltage are measured using the transformer supply specified below.

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.

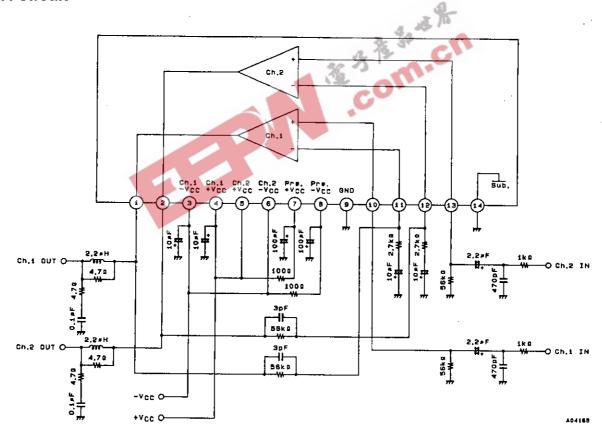
Specified Transformer Supply (MG-200 or Equivalent)



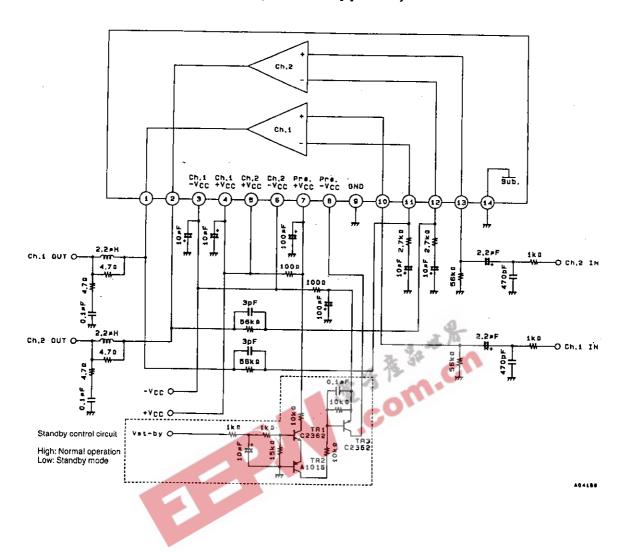
Block Diagram



Test Circuit



Sample Application Circuit (Standby Mode Supported)



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