

**SANYO****STK405-100****2ch AF Power Amplifier (Split Power Supply)  
(60W + 60W min, THD = 10%)****Preliminary****Overview**

The STK405-100, 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 ( $f=1\text{kHz}$ ,  $\text{THD}=10\%$ )
- 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  $V_G=26\text{dB}$  for easy gain distribution within the set
- Member of 10W/ch to 80W/ch pin-compatible series

**Series Organization**

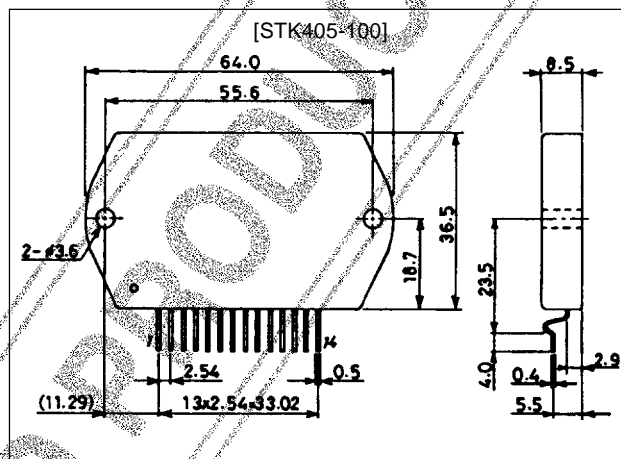
The following devices form a series with differing output capacity. Some of the following devices are under development. Contact your Sanyo sales representative if you require more detailed information.

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

**Package Dimensions**

unit:mm

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**Specifications**

**Maximum Ratings** at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V <sub>CC</sub> max		±45.0	V
Thermal resistance	θ j-c	Per power transistor	2.1	°C/W
Junction temperature	T <sub>j</sub>		150	°C
Operating temperature	T <sub>c</sub>		125	°C
Storage temperature	T <sub>stg</sub>		-30 to +125	°C
Available time for load short-circuit	t <sub>s</sub>	V <sub>CC</sub> =±29.0V, R <sub>L</sub> =6Ω, f=50Hz, P <sub>O</sub> =60W		s

**Operating Characteristics** at Ta = 25°C, R<sub>L</sub>=6Ω (noninductive load), R<sub>g</sub>=600Ω, V<sub>G</sub>=26dB

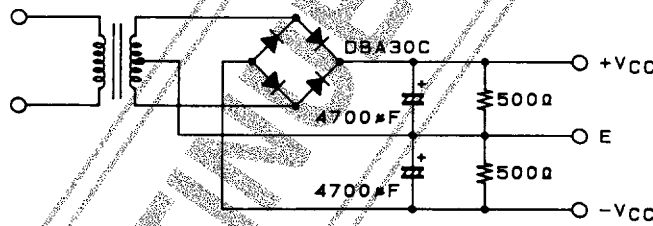
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	I <sub>CCO</sub>	V <sub>CC</sub> =±37.0V, no load		13	20	mA
Output power	P <sub>O</sub>	V <sub>CC</sub> =±29.0V, f=1kHz, THD=10.0%	60			W
Total harmonic distortion	THD	V <sub>CC</sub> =±29.0V, f=1kHz, P <sub>O</sub> =5.0W		0.04	0.1	%
Frequency response	f <sub>L</sub> , f <sub>H</sub>	V <sub>CC</sub> =±29.0V, P <sub>O</sub> =1.0W, +9 dB	20 to 50k			Hz
Input impedance	r <sub>i</sub>	V <sub>CC</sub> =±26.5V, f=1kHz, P <sub>O</sub> =1.0W		55		kΩ
Output noise voltage	V <sub>NO</sub>	V <sub>CC</sub> =±29.0V, R <sub>g</sub> =10kΩ			1.2	mVrms
Neutral voltage	V <sub>N</sub>	V <sub>CC</sub> =±37.0V	-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 (RP-25 or Equivalent)**

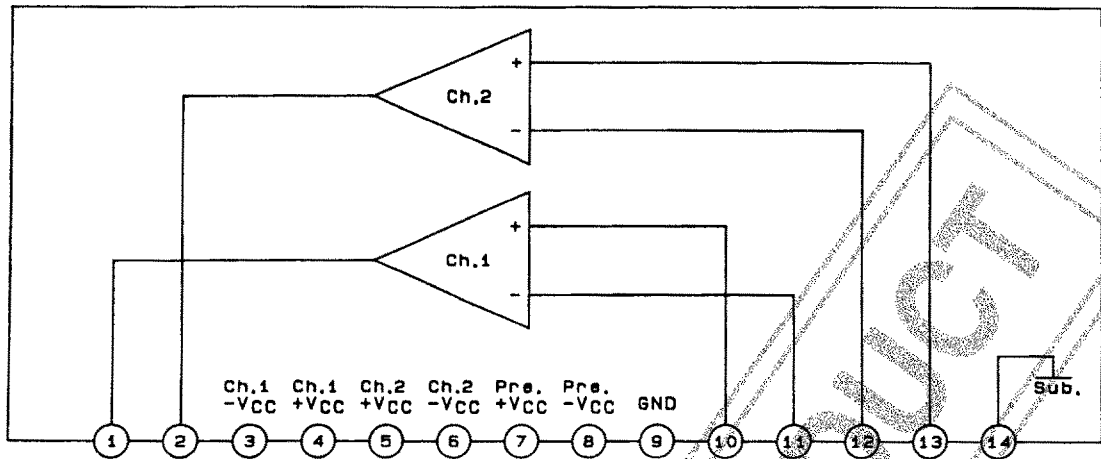


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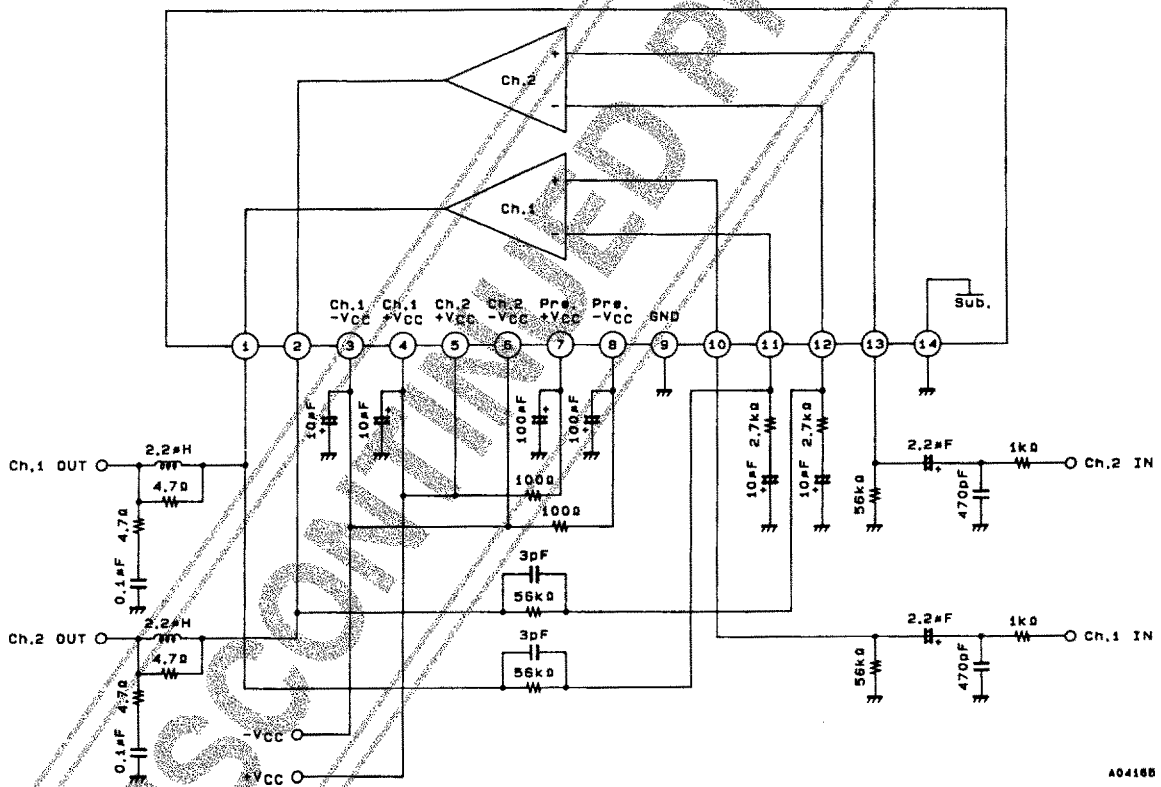
# STK405-100

## Block Diagram



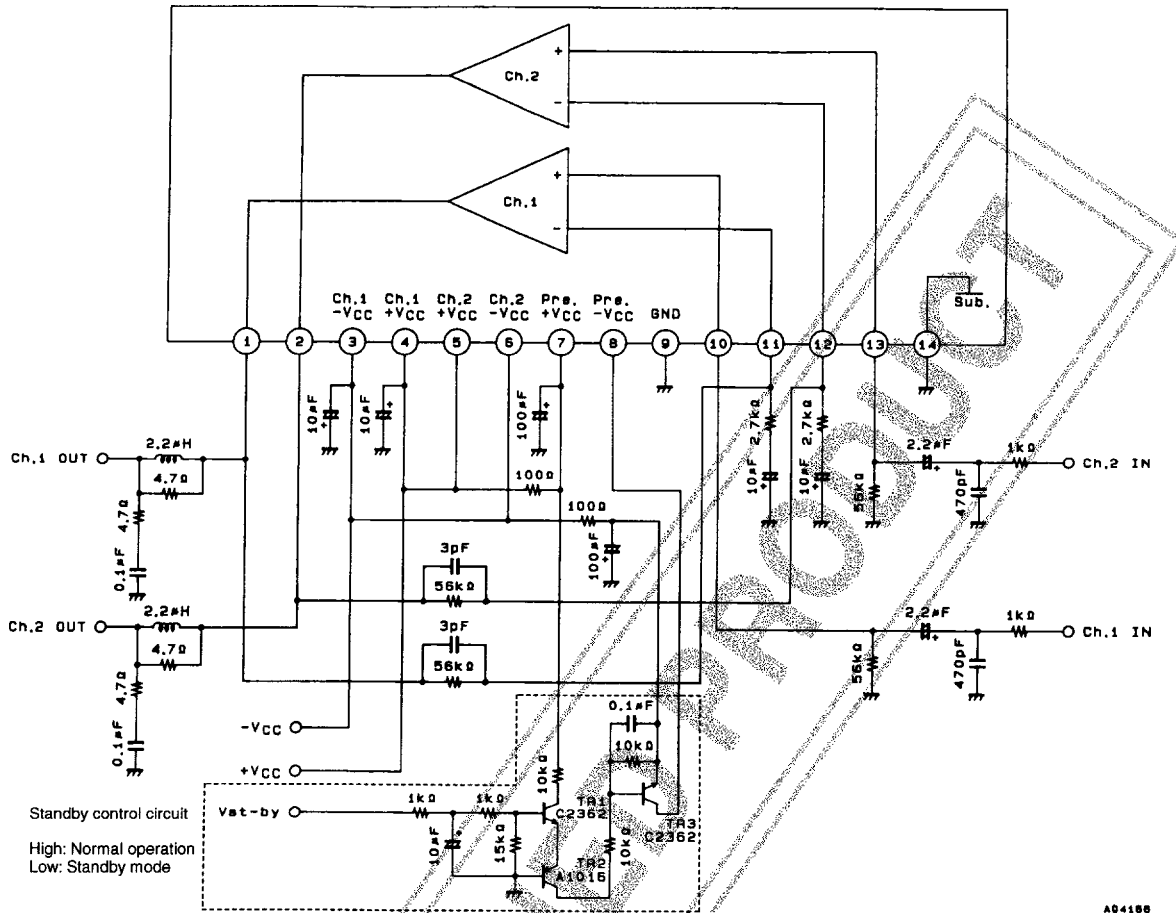
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## Test Circuit



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Sample Application Circuit (Standby Mode Supported)



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