

## YOUDA INTEGRATED CIRCUIT

YD2030

# 18W HI-FI AUDIO AMPLIFIER—YD2030

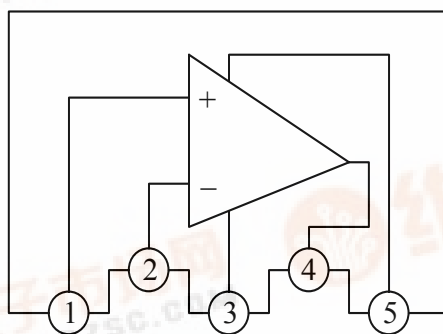
## DESCRIPTION

The YD2030 is a monolithic audio power amplifier integrated circuit.

## FEATURES

- \*Very low external component required.
- \*High Current output and high operating voltage.
- \*Low harmonic and crossover distortion.
- \*Built-in Over temperature protection.
- \*Short circuit protection between all pins.
- \*Safety Operating Area for output transistors.

## BLOCK DIAGRAM



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**ABSOLUTE MAXIMUM RATINGS** (Tamb=25 )

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V <sub>CC</sub> /V <sub>EE</sub>	± 20	V
Input Voltage	V <sub>i</sub>	V <sub>CC</sub> /-V <sub>EE</sub>	
Differential Input Voltage	V <sub>di</sub>	± 15	V
Peak Output Current (internally limited)	I <sub>O</sub>	3.5	A
Power Dissipation at T <sub>case</sub> =90	P <sub>D</sub>	20	W
Junction Temperature	T <sub>stg</sub>	-40 ~ +150	

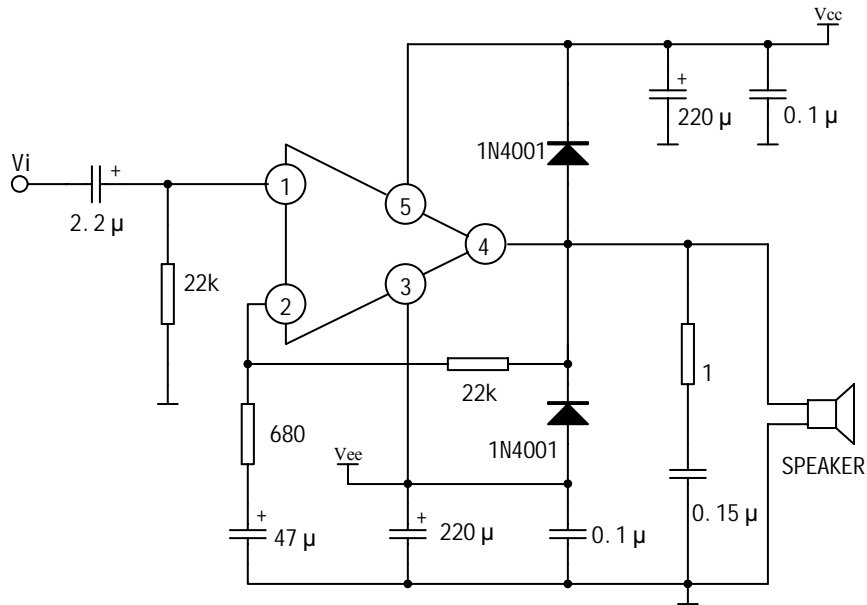
**ELECTRICAL CHARACTERISTICS**

( V<sub>CC</sub>/V<sub>EE</sub>= ± 14V, Tamb=25 , unless otherwise specified)

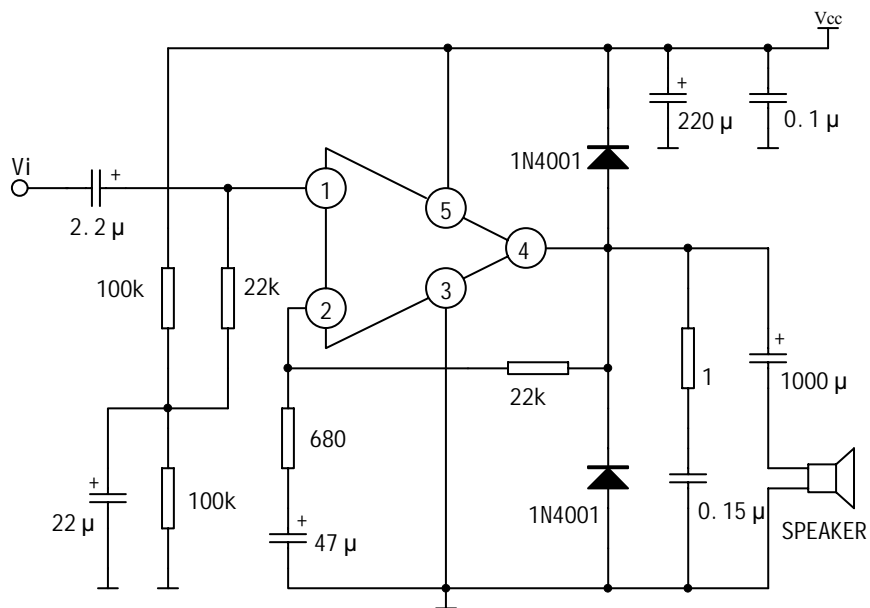
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Supply Voltage	V <sub>CC</sub> /V <sub>EE</sub>		± 6		± 18	V	
Quiescent Drain Current	I <sub>ccq</sub>			40	60	mA	
Input Bias Current	I <sub>ib</sub>	V <sub>CC</sub> /V <sub>EE</sub> = ± 22V		0.2	2	μ A	
Input Offset Voltage	V <sub>is</sub>			± 2	± 20	mV	
Input Offset Current	I <sub>is</sub>			± 20	± 200	nA	
Output Power	P <sub>o</sub>	THD=0.5%, G <sub>V</sub> =26dB, f=40 to 15kHz					W
		R <sub>L</sub> =4Ω	12	14			
		R <sub>L</sub> =8Ω	8	9			
		THD=10%, G <sub>V</sub> =26dB, f=40 to 15kHz					W
		R <sub>L</sub> =4Ω		18			
		R <sub>L</sub> =8Ω		11			
Power Bandwidth	BW	P <sub>o</sub> =15W, R <sub>L</sub> =4Ω	10 ~ 140,000			Hz	
Open Loop Voltage Gain	G <sub>VO</sub>	f=1kHz		90		dB	
Close Loop Voltage Gain	G <sub>V</sub>	f=1kHz	29.5	30	30.5	dB	
Total Harmonic Distortion	THD	P <sub>o</sub> =0.1~12W, R <sub>L</sub> =4Ω f=40Hz~15kHz		0.2	0.5	%	
		P <sub>o</sub> =0.1~8W, R <sub>L</sub> =8Ω f=40Hz~15kHz		0.1	0.5		
Input Noise Voltage	V <sub>NI</sub>	B=22Hz~22kHz		3	10	μV	
Input Noise Current	I <sub>NI</sub>	B=22Hz~22kHz		80	200	pA	
Input Resistance(pin1)	Z <sub>i</sub>	Open Loop, f=1kHz	0.5	5		MΩ	
Supply Voltage Rejection	RR	R <sub>L</sub> =4Ω, R <sub>g</sub> =22kΩ G <sub>V</sub> =30dB, f=1kHz	40	50		dB	
Thermal Shut-Down Junction Temperature	T <sub>j</sub>			145			

**APPLICATION CIRCUIT**

**(1) YD2030 DUAL SUPPLY POWER APPLICATION**



**(2) YD2030 SINGLE SUPPLY POWER APPLICATION**



OUTLINE DRAWING

