

20W HI-FI AUDIO AMPLIFIER—YD2030A

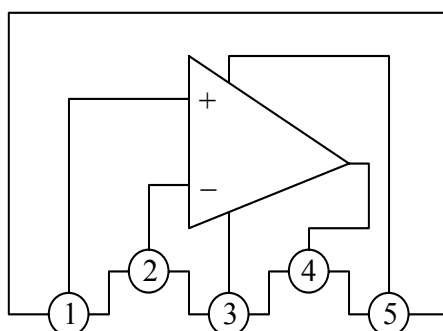
DESCRIPTION

The YD2030A 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 ($T_{amb}=25$)

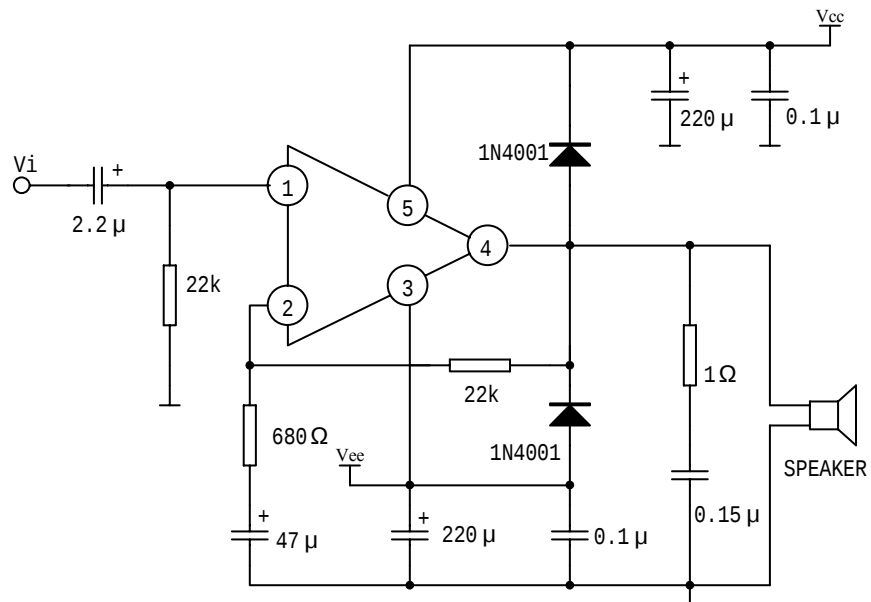
PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V_{CC}/V_{EE}	± 23	V
Input Voltage	V_i	$V_{CC}/-V_{EE}$	
Differential Input Voltage	V_{di}	± 15	V
Peak Output Current (internally limited)	I_O	3.5	A
Power Dissipation at $T_{case}=90$	P_D	20	W
Junction Temperature	T_{stg}	$-40 \sim +150$	

ELECTRICAL CHARACTERISTICS($V_{CC}/V_{EE} = \pm 14V$, $T_{amb}=25$, unless otherwise specified)

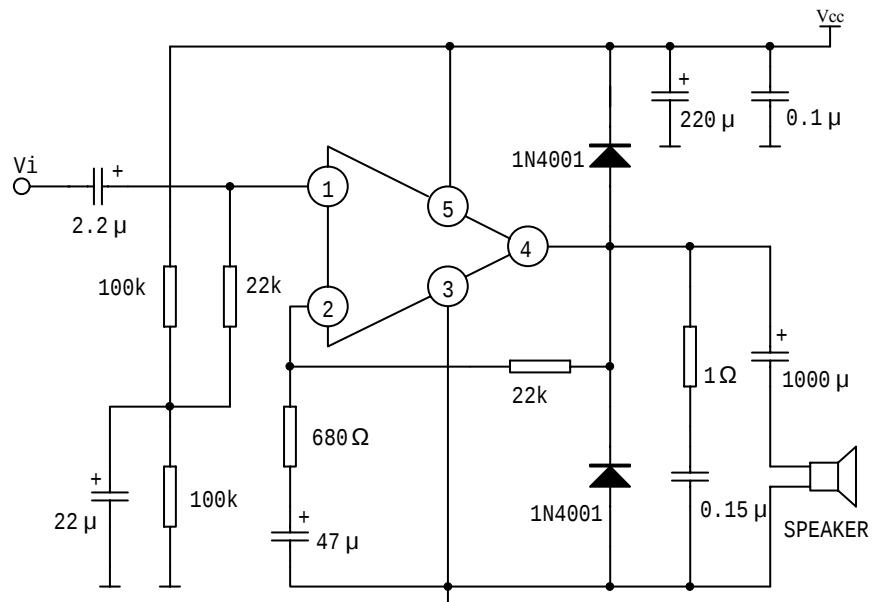
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V _{CC} /V _{EE}		± 6		± 22	V
Quiescent Drain Current	I _{ccq}			40	60	mA
Input Bias Current	I _{ib}	V _{CC} /V _{EE} = ± 22V		0.2	2	μ A
Input Offset Voltage	V _{is}			± 2	± 20	mV
Input Offset Current	I _{is}			± 20	± 200	nA
Output Power	P _o	THD=1.0%, G _V =26dB, f=40 to 15kHz				
		R _L =4Ω	21	23		W
		R _L =8Ω		13		
		THD=10%, G _V =26dB, f=40 to 15kHz				
		R _L =4Ω		30		W
		R _L =8Ω		17		
Power Bandwidth	BW	P _o =15W, R _L =4Ω	10 ~ 140,000			Hz
Open Loop Voltage Gain	G _{VO}	f=1kHz		90		dB
Close Loop Voltage Gain	G _V	f=1kHz	29.5	30	30.5	dB
Total Harmonic Distortion	THD	P _o =0.1~12W, R _L =4Ω f=40Hz ~15kHz		0.2	0.5	%
		P _o =0.1~8W, R _L =8Ω f=40Hz ~15kHz		0.1	0.5	
Input Noise Voltage	V _{NI}	B=22Hz~22kHz		3	10	μV
Input Noise Current	I _{NI}	B=22Hz~22kHz		80	200	pA
Input Resistance(pin1)	Z _i	Open Loop, f=1kHz	0.5	5		MΩ
Supply Voltage Rejection	RR	R _L =4Ω, R _g =22kΩ G _v =30dB, f=1kHz	40	50		dB
Thermal Shut-Down Junction Temperature	T _j			145		

APPLICATION CIRCUIT

(1) YD2030A DUAL SUPPLY POWER APPLICATION



(2) YD2030A SINGLE SUPPLY POWER APPLICATION



OUTLINE DRAWING

