18W HI-FI AUDIO AMPLIFIER—YD2030

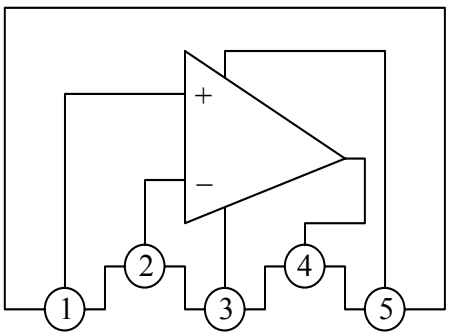
DESCRIPTION

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	Vcc/V_{EE}	±20	V
Input Voltage	Vi	$Vcc/-V_{EE}$	
Differential Input Voltage	Vdi	±15	V
Peak Output Current (internally limited)	I_O	3.5	A
Power Dissipation at Tcase=90℃	P_D	20	W
Junction Temperature	Tstg	-40～+150	℃

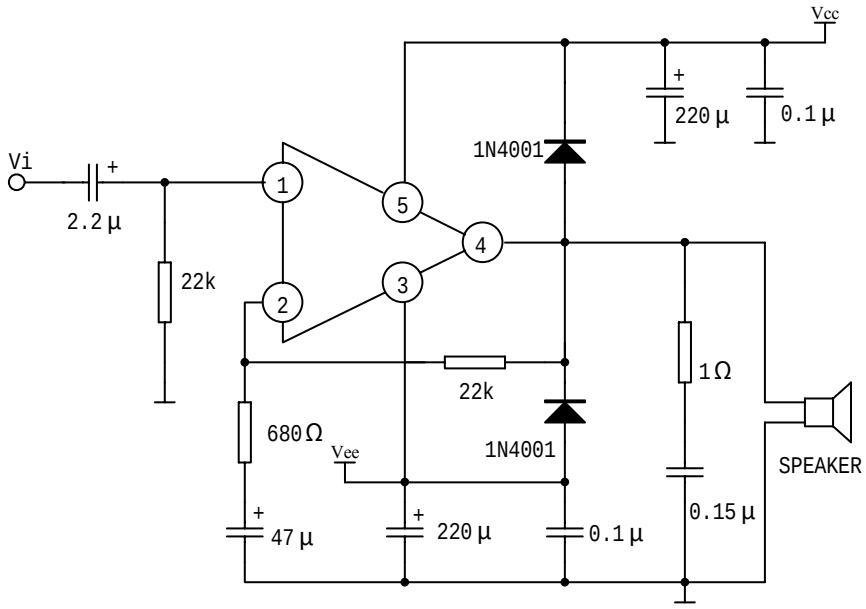
ELECTRICAL CHARACTERISTICS

(Vcc/V_{EE}=±14V, Tamb=25℃, unless otherwise specified)

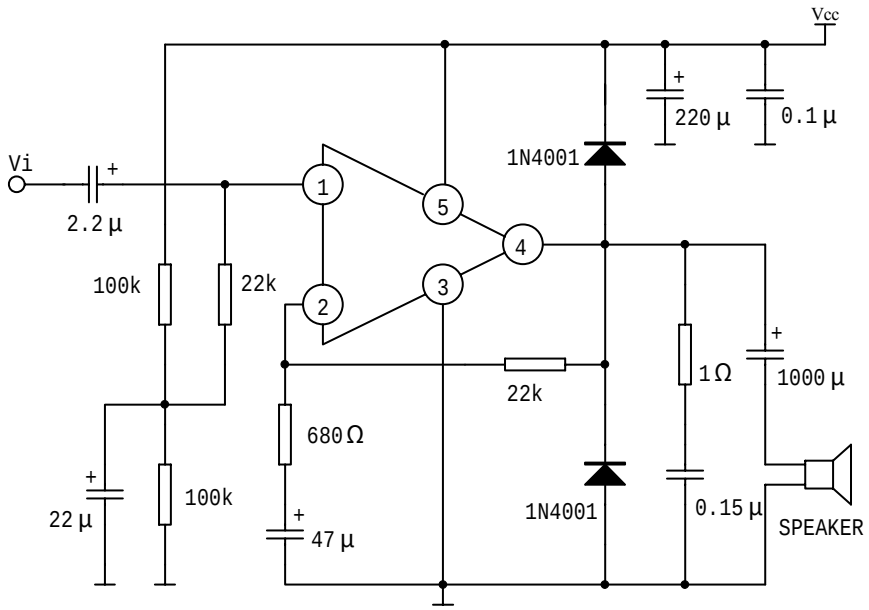
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	Vcc/V_{EE}		±6		±18	V
Quiescent Drain Current	Iccq			40	60	mA
Input Bias Current	Iib	Vcc/V_{EE} =±22V		0.2	2	μA
Input Offset Voltage	Vis			±2	±20	mV
Input Offset Current	Iis			±20	±200	nA
Output Power	Po	THD=0.5%, G_V=26dB, f=40 to 15kHz				
		R_L=4Ω	12	14		W
		R_L=8Ω	8	9		
		THD=10%, G_V=26dB, f=40 to 15kHz				
		R_L=4Ω		18		W
		R_L=8Ω		11		
Power Bandwidth	BW	Po=15W, R_L=4Ω	10～140,000			Hz
Open Loop Voltage Gain	G_{VO}	f=1kHz		90		dB
Close Loop Voltage Gain	Gv	f=1kHz	29.5	30	30.5	dB
Total Harmonic Distortion	THD	Po=0.1~12W, R_L=4Ω f=40Hz ~15kHz		0.2	0.5	%
		Po=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)	Zi	Open Loop, f=1kHz	0.5	5		MΩ
Supply Voltage Rejection	RR	R_L=4Ω, Rg=22kΩ Gv=30dB, f=1kHz	40	50		dB
Thermal Shut-Down Junction Temperature	Tj			145		℃

APPLICATION CIRCUIT

(1) YD2030 DUAL SUPPLY POWER APPLICATION



(2) YD2030 SINGLE SUPPLY POWER APPLICATION



OUTLINE DRAWING