



14W Hi-Fi AUDIO AMPLIFIER D2030

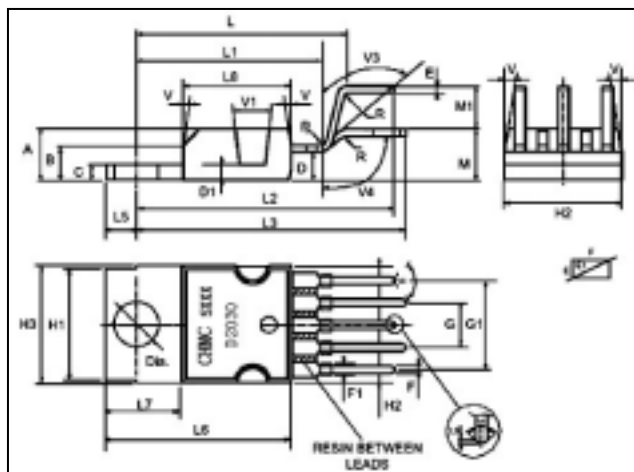
GENERAL DESCRIPTION

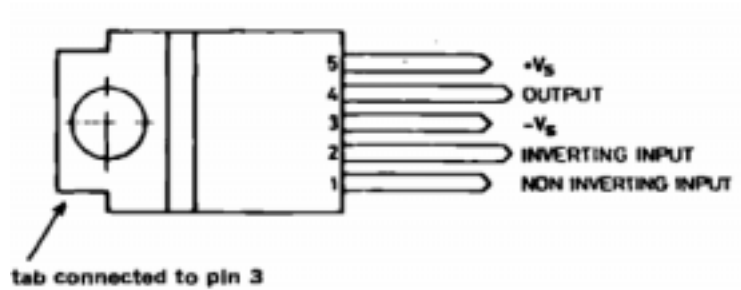
The D2030 is a monolithic integrated circuit in Pentawatt package, intended for use as a low frequency class AB amplifier. Typically it provides 14W output power ($d = 0.5\%$) at 14V/4 Ω ; at $\pm 14V$ or 28V, the guaranteed output power is 12W on a 4 Ω load and 8W on a 8 Ω (DIN45500).

The D2030 provides high output current and has very low harmonic and cross-over distortion.

Further the device incorporates an original (and patented) short circuit protection system comprising an arrangement for automatically limiting the dissipated power so as to keep the working point of the output transistors within their safe operating area. A conventional thermal shut-down system is also included.

Outline Drawing



PIN CONNECTION**ABSOLUTE MAXIMUM RATINGS** ($T_a=25^{\circ}\text{C}$)

Characteristics	Symbol	Value	Units
Supply Voltage	V_s	± 18	V
Input Voltage	V_i	V_s	V
Differential input Voltage	V_{di}	± 15	V
Peak output Current (Internally limited)	I_o	3.5	A
Power Dissipation at $T_{case}=90^{\circ}\text{C}$	P_{tot}	20	W
Storage Temperature	T_{stg}	$-40\sim+150$	$^{\circ}\text{C}$
Junction Temperature	T_j	$-40\sim+150$	$^{\circ}\text{C}$

THERMAL DATA

Characteristics	Symbol	Value	Units
Thermal Resistance Junction-case Max	$R_{th(j-case)}$	3	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS

(Refer to the test circuit, $V_s=\pm 14\text{V}$, $T_a=25^{\circ}\text{C}$, unless otherwise specified)

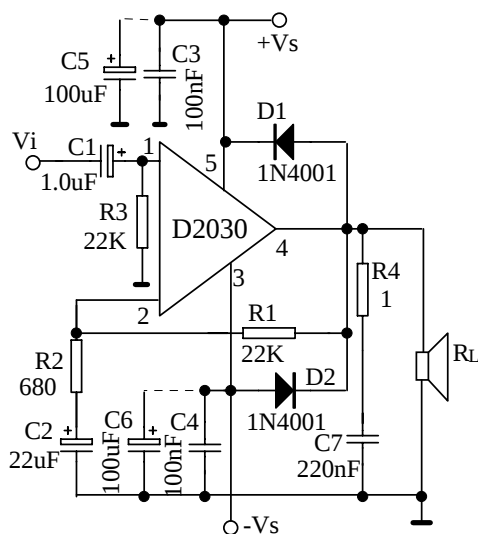
Characteristics	Test conditions	Symbol	Min	Typ	Max	Unit
Supply Voltage	$V_s=\pm 18\text{V}(V_s=36\text{V})$	V_s	± 6		± 18	V
			12		36	
Quiescent Drain Current		I_d		40	60	mA
Input Bias Current		I_b		0.2	2	μA
Input Offset Voltage		V_{os}		± 2	± 20	mV
Input Offset Current		I_{os}		± 20	± 200	nA

ELECTRICAL CHARACTERISTICS

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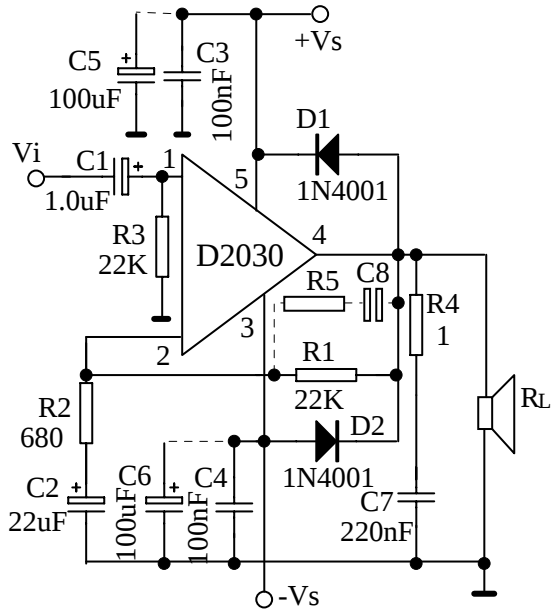
Characteristics	Test conditions		Symbol	Min	Typ	Max	Unit
Output Power	THD=0.5%, G _v =30dB, f=40 to 15000Hz	R _L =4Ω	P _o	12	14		W
		R _L =8Ω		8	9		
	THD=10%, G _v =30dB, f=1kHz	R _L =4Ω			18		
		R _L =8Ω			11		
Power Bandwidth (-3dB)	P _o =12W, R _L =4Ω, G _v =30dB		BW	10~140000			kHz
Open Loop Voltage Gain			G _v		90		dB
Closed Loop Voltage Gain	f=1kHz		G _v	29.5	30	30.5	dB
Total Harmonic Distortion	P _o =0.1 to 12W, R _L =4Ω, G _v =30dB, f=40 to 15000kHz		THD		0.2	0.5	%
	P _o =0.1 to 8W R _L =8Ω G _v =30dB, f=40 to 15000kHz				0.1	0.5	
Input Noise Voltage	B=22Hz to 22kHz		e _N		3	10	μV
Input Noise Current			i _N		80	200	pA
Input Resistance (pin1)			R _i	0.5	5		MΩ
Supply Voltage Rejection	R _L =4Ω, R _g =22kΩ, G _v =30dB, V _{ripple} =0.5V _{eff} , fripple=100Hz		SVR	40	50		dB
Drain current	P _o =14W, R _L =4Ω		I _d		900		mA
	P _o =8W, R _L =8Ω				500		

TEST CIRCUIT

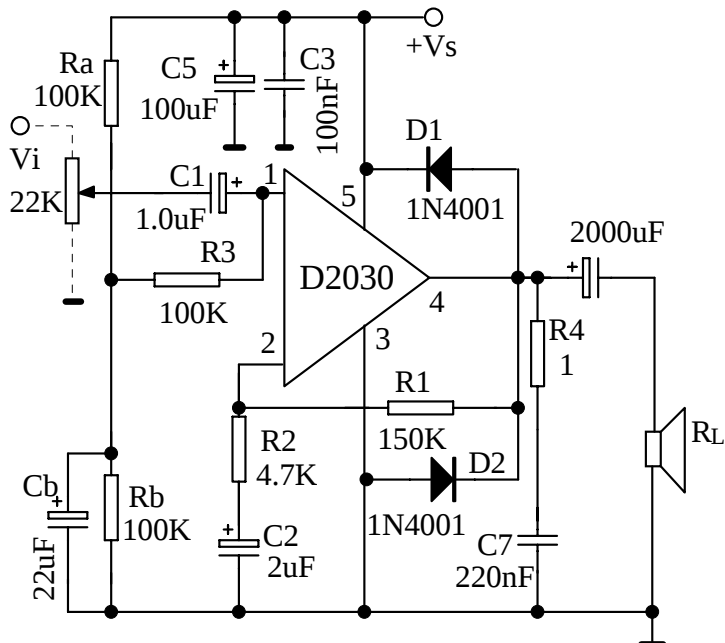


APPLICATION CIRCUIT

1. Typical amplifier with split power supply



2. Typical amplifier with single power supply



3. Bridge amplifier configuration with split power supply ($P_o=28W$, $V_s=\pm 14V$)

