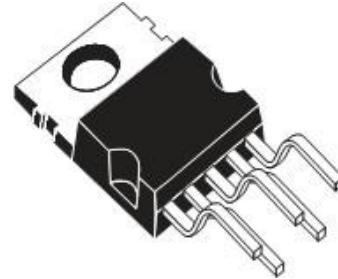


14W Hi-Fi audio power amplifier

Overview

TDA2030 is a single -piece integrated circuit enclosed in Pentawatt, which is used on a low -frequency AB amplifier. The output power of 14W (typical $d = 0.5\%$, $\pm 14 \text{ v}/4 \omega$) is provided. When the $R_L = 4\Omega$ can output 14w when $\pm 14 \text{ v}$ or 28 V, and 9W can be output when 8Ω .

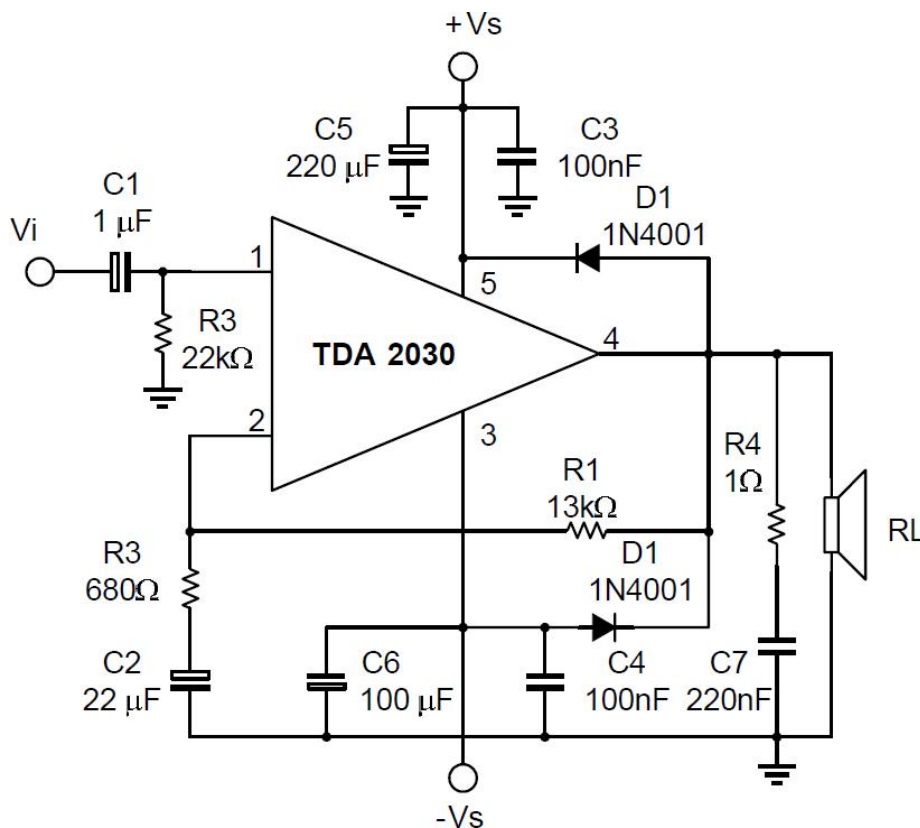
TDA2030 provides high output current, and has very low harmonic and conflict. In addition, the device also uses a short -circuit protection system, including an automatic limit consumption power to maintain the working point of the output transistor in the normal safe range. It also includes a traditional heat -closed system.



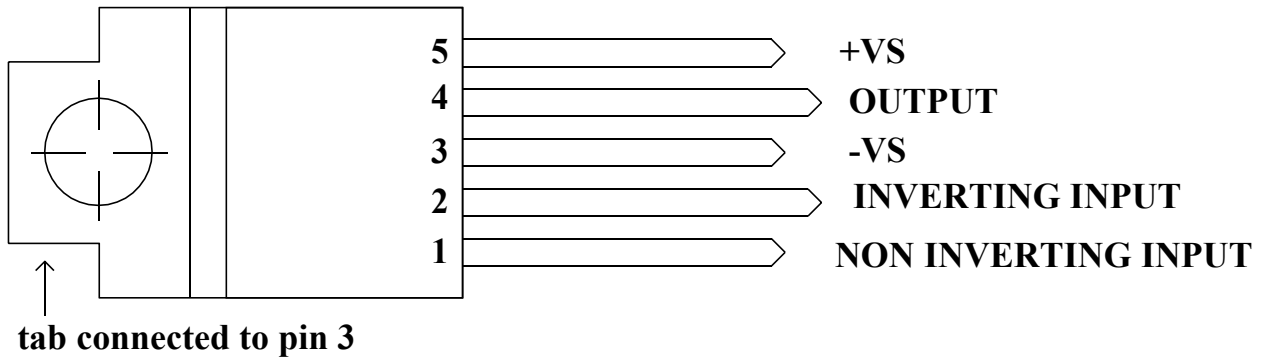
Characteristic

- The voltage range of the width power supply is up to 36V
- Single or dual power supply power supply
- Short -circuit protection on the ground
- Hot shutdown

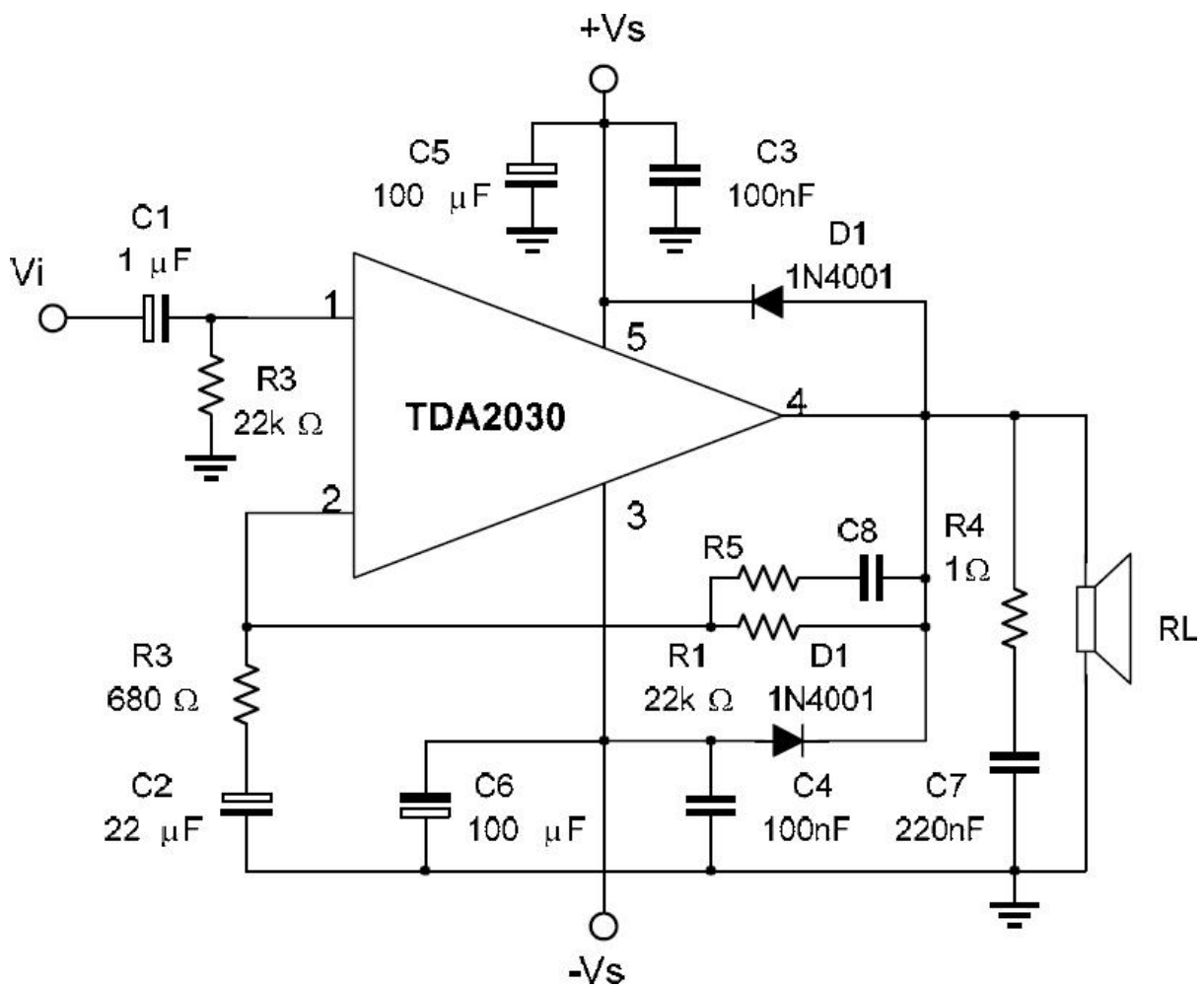
Typical application diagram



Pin distribution diagram



Test circuit



Limiting parameter

Symbol	Parameter	Value	Unit
Vs	Supply voltage	±18 (36)	V
Vi	Input voltage	Vs	V
Vi	Differential input voltage	±15	V
Io	Output peak current (internal limit)	3.5	A
Ptot	Power consumption T = 90 ° C	20	W
Tstg, Tj	Storage and junction temperature	-40 to 125	°C

Electrical characteristics (Refer to test circuit, unless otherwise stated, Vs=±14V, Tamb=25°C; Single power supply, VS=28V)

Symbol	Parameter	Test condition	Norm value			Unit
			Min	Typical	Max	
Vs	Supply voltage		±6		±18	V
			12		36	V
Id	Static current	Vs=±18V		40	60	mA
Ib	Input bias current			0.2	2	uA
Vos	Input offset voltage			±2	±20	mV
Ios	Input offset current			±20	±200	nA
Po	Output power					W
d	Distortion degree	d=0.5%, Gv=30dB, f=40 to 15KHz	RL=4Ω	12	14	
			RL=8Ω	8	9	
		d=10%, Gv=30dB, f=1KHz	RL=8Ω		11	
d	Distortion degree	Po = 0.1 to 12W RL = 4Ω Gv = 30 dB f= 40 to 15,000 Hz		0.2	0.5	%
		Po = 0.1 to 8W RL = 8Ω Gv = 30 dB f= 40 to 15,000 Hz		0.1	0.5	%
BW	Power bandwidth (-3dB)	Gv = 30 dB P = 12W R = 4Ω	10 to 140,000			HZ
Ri	Input impedance		0.5	5		MΩ
Gv	Voltage gain (open ring)			90		dB
Gv	Voltage gain (closed loop)	f=1KHz	29.5	30	30.5	dB
eN	Input noise voltage	B = 22 Hz to 22 KHz		3	10	uV
iN	Input noise voltage	B = 22 Hz to 22 KHz		80	200	pA

Symbol	Parameter	Test condition	Standard value			unit
			Min	Typical	Max	
SVR	Power supply voltage rejection ratio	$R_L = 4\Omega$ $G_v = 30 \text{ dB}$ $R_g = 22 \text{ k}\Omega$ $V_{\text{ripple}} = 0.5 V_{\text{eff}}$ $f_{\text{ripple}} = 100 \text{ Hz}$	40	50		dB
I_d	Leakage current	$P_o = 14 \text{ W}$ $R_L = 4\Omega$		900		mA
T_j	Thermal protection junction temperature			145		$^{\circ}\text{C}$

Parametric characteristic curve

Figure 1 Output power vs. supply voltage Figure 2 open-loop frequency response Figure 3 Total harmonic distortion VS output power

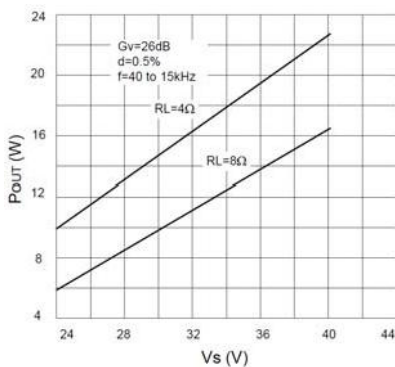


Figure 4 Large signal frequency response

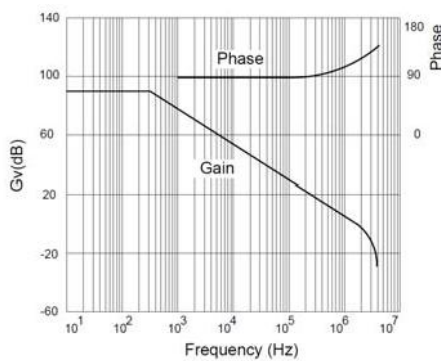
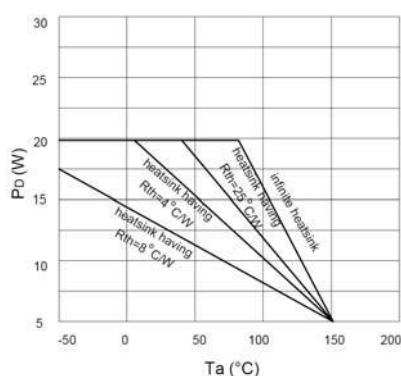
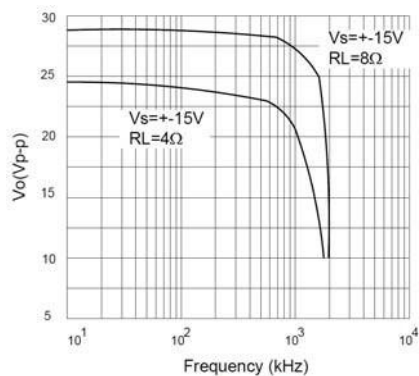
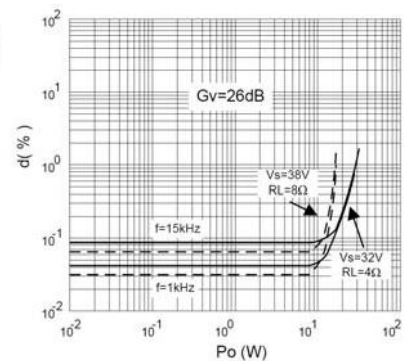


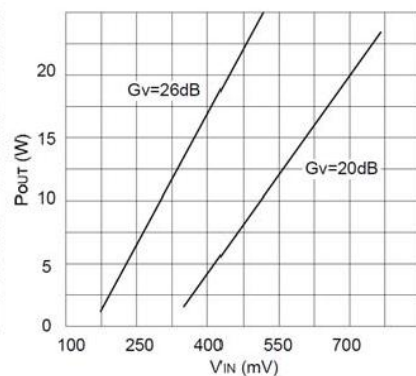
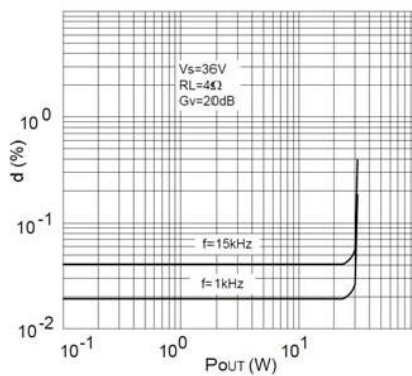
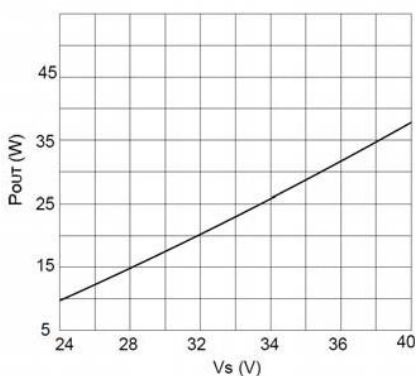
Figure 5 Maximum power dissipation VS temperature



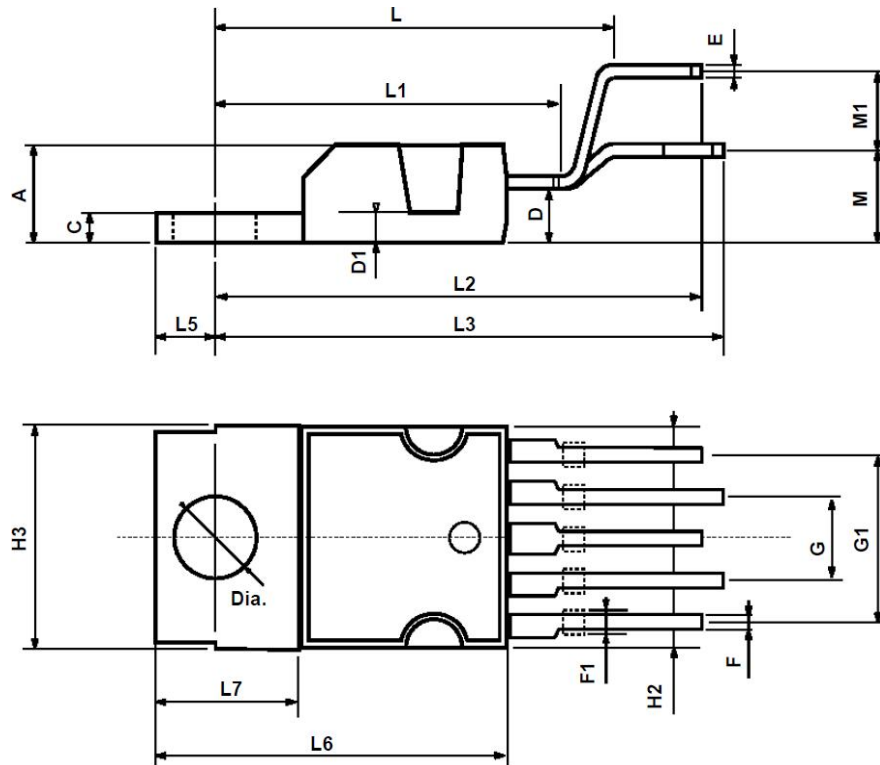
Typical parameter performance curve

Figure 6 Output power vs. supply Figure 7 Total harmonic distortion vs. Power

Figure 8 Output power vs. input



Encapsulation



DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			4.8			0.189
C			1.37			0.054
D	2.4		2.8	0.094		0.110
D1	1.2		1.35	0.047		0.053
E	0.35		0.55	0.014		0.022
F	0.8		1.05	0.031		0.041
F1	1		1.4	0.039		0.055
G		3.4		0.126	0.134	0.142
G1		6.8		0.260	0.268	0.276
H2			10.4			0.409
H3	10.05		10.4	0.396		0.409
L		17.85			0.703	
L1		15.75			0.620	
L2		21.4			0.843	
L3		22.5			0.886	
L5	2.6		3	0.102		0.118
L6	15.1		15.8	0.594		0.622
L7	6		6.6	0.236		0.260
M		4.5			0.177	
M1		4			0.157	
Dia	3.65		3.85	0.144		0.152