



产品说明

TDA7388是具有待机和静音功能的25W四声道（BTL）音频功放电路，适用于汽车音响等电子设备。

该电路特点如下：

输出极限功率： $P_o=41W \times 4$

（ $V_{cc}=14.4V$ ，BTL， $R_L=4\Omega$ ，MAX）；

输出功率大： $P_o=25W \times 4$

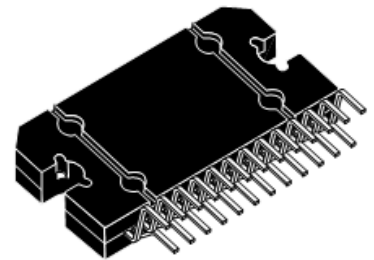
（ $V_{cc}=14.4V$ ，BTL， $R_L=4\Omega$ ，THD=10%）；

四声道均采用BTL回路，无需外接输出电容；

具有待机和静音功能；

增益固定（ $G_v=26dB$ ），外围器件少；内含过压保护，短路保护和热保护；

采用HZIP25功率封装形式。



HZIP25

极限值

除非另有规定， $T_a=25^\circ C$

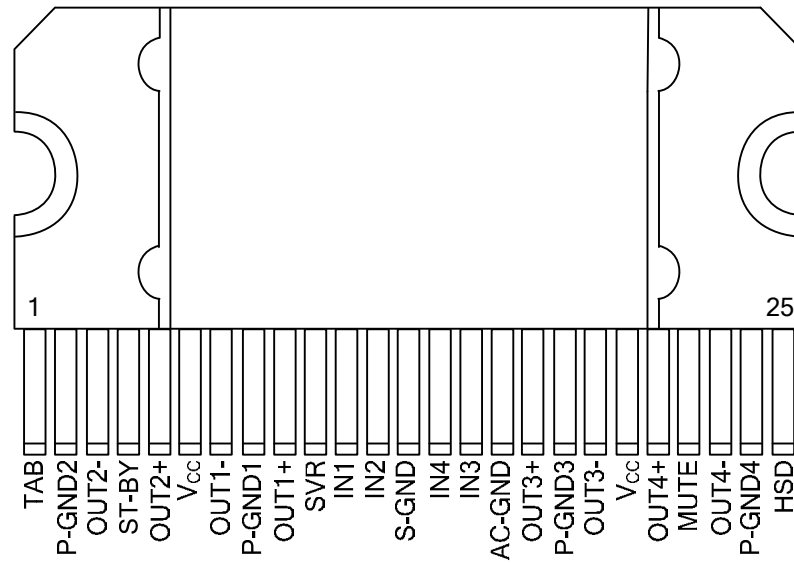
参数名称	符号	额定值	单位
输入电压	VS	18	V
输出电流	I _o	4.5	A
工作结温	T _J	0~+150	°C
存储温度	T _{stg}	-55~+150	°C
功耗	P _{tot}	80	W

考核参数

参数名称	符号	测试条件、设备	数值	单位
工作极限电压	V _{cc}	稳压电源	18	V
直流极限电压	V _{cc} (DC)	稳压电源（观察电流）	28	V
峰值极限电压	V _{cc} (pk)	t = 50ms（脉冲）	50	V
输出峰值电流	I _{op}	电子负载或功率电阻	4.5	A
功耗	P _D	T _{case} =70°C	80	W
		无外接散热片	10	
工作环境温度	T _{opr}	高低温箱	-20 ~ +75	°C
温度保护点	T _j	温度计（在主体金属）	150	°C
贮存温度	T _{stg}	高低温箱	-55 ~ +150	°C
热阻	R _{th j-amb}	温度计、电源	1	°C/W



引出端排列图



引出端功能

引出端序号	符号	功能	引出端序号	符号	功能
1	TAB	散热片	14	IN4	输入4
2	P-GND2	功放地2	15	IN3	输入3
3	OUT2-	输出2负	16	AC-GND	交流地
4	TDA-BY	待机	17	OUT3+	输出3正
5	OUT2+	输出2正	18	P-GND3	功放地3
6	VCC	电源	19	OUT3-	输出3负
7	OUT1-	输出1负	20	VCC	电源
8	P-GND1	功放地1	21	OUT4+	输出4正
9	OUT1+	输出1正	22	MUTE	静音
10	SVR	滤波	23	OUT4-	输出4负
11	IN1	输入1	24	P-GND4	功放地4
12	IN2	输入2	25	NC	空
13	S-GND	信号地			

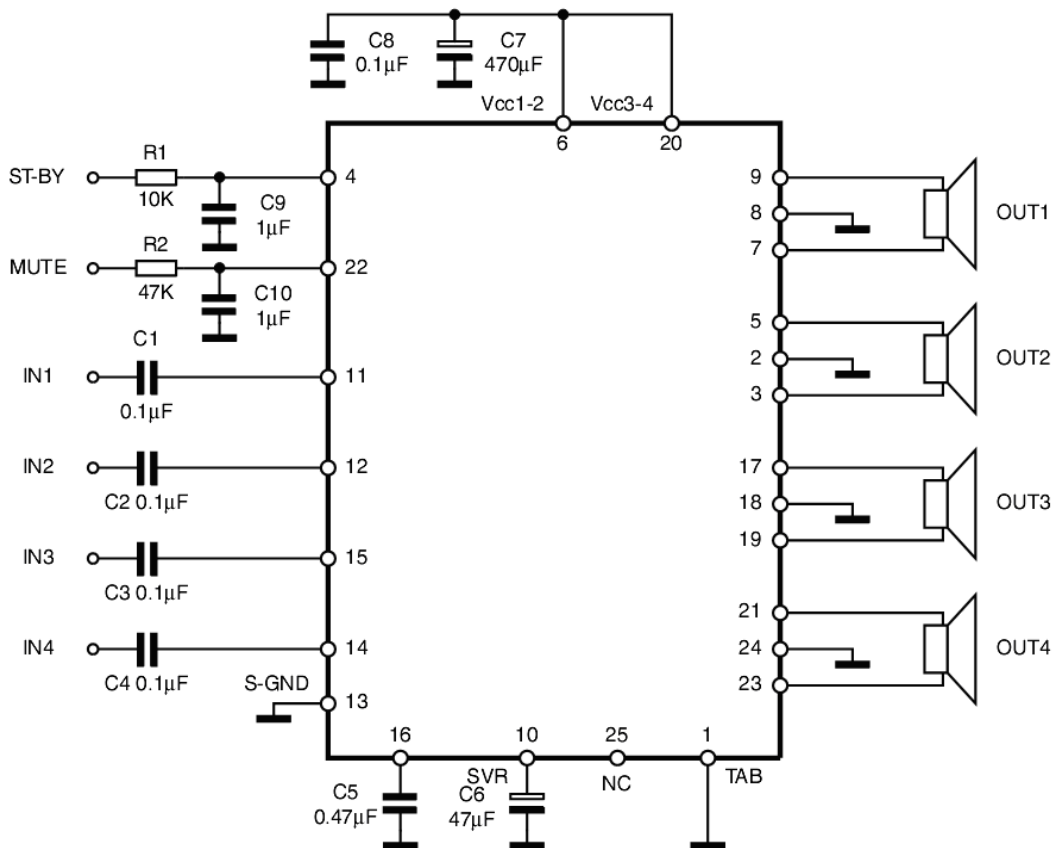


电参数

除非另有规定, VCC=14.4V Vsb=5V Vmute=5V f=1KHz RL=4ohm T=25°C

参数名称	符号	测试条件	最小值	最大值	单位
输入电阻	Rin		90	120	Kohm
待机电流	Isb	Vsb= 0V		100	uA
静态电流	Icc		120	240	mA
输出端电平	Vout		7	8	V
输入端电平	Vin		6.5	7.5	V
输出端失调电压	Vout offset		-100	100	mV
增益	GAIN		25	27	DB
退出待机电压	Vsb out	Amp on	2	3.5	V
进入待机电压	Vsb in	Amp off	2	3.5	V
Mute 端电流	I pin22	Vmute=1.5V		30	uA
输出功率	Po	THD=10%	22		W
失真度	THD	Po=4W		0.15	%
截止频率	Fch	Po=0.5W	80		KHz
退出静音电平	Vm out	Amp: play	2		V
进入静音电平	Vm in	Amp: mute		2	V

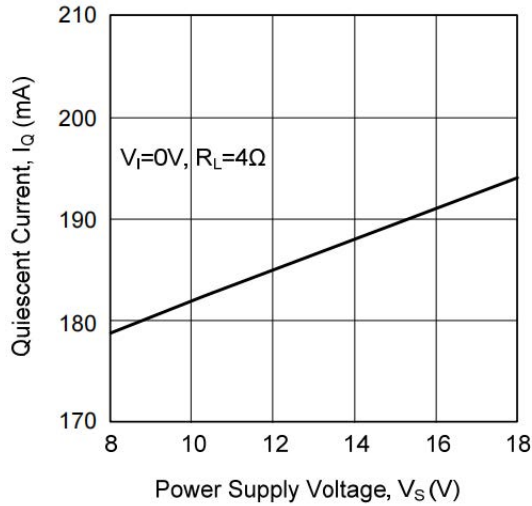
产品测试原理图



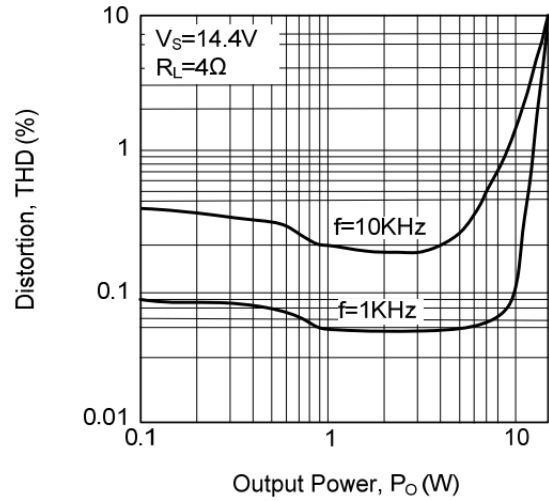


电性能曲线图

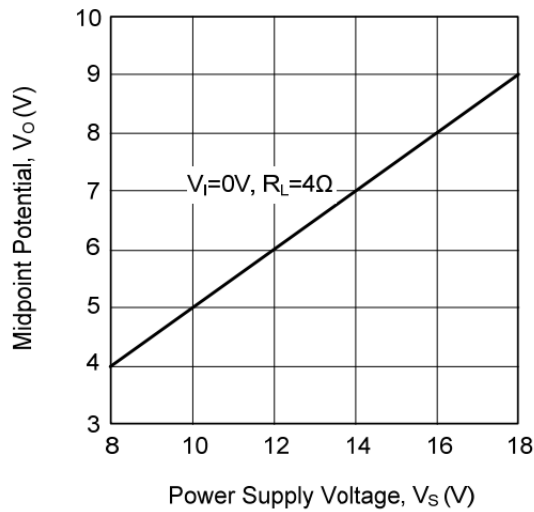
静态电流Vs电源电压



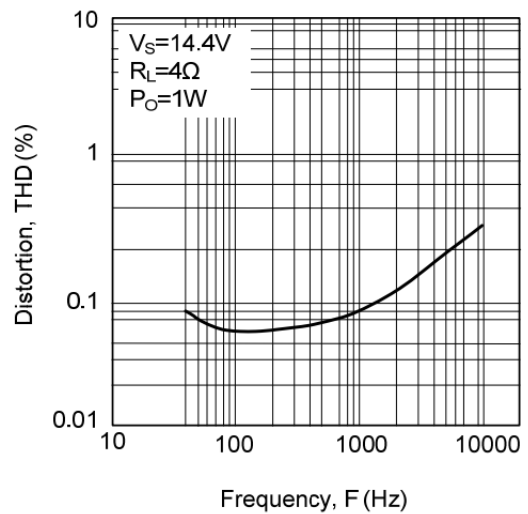
失真度Vs 输出功率



静态输出Vs电源电压



谐波失真Vs频率





功能说明:

SVR: SVR电容为电路功放的交流地，增大电容可适当提高纹波抑制比。电路上电时的POP声主要由此电容充放电时间来降低，此电容最小值为10uF。该脚如果接地，功放为静音状态。

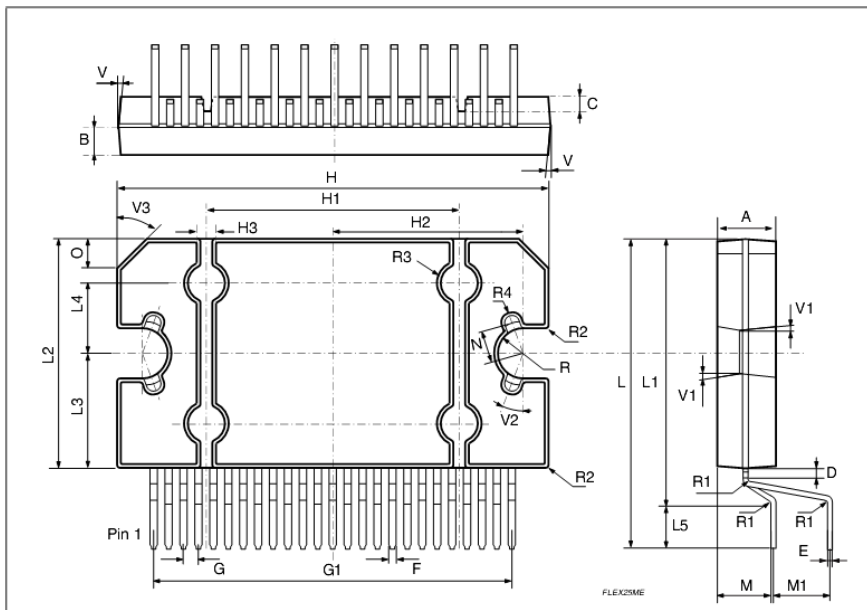
输入端: 输入电容选用0.1uF，此时最低截止频率为16Hz，如果需要更低截止频率则需按比例加大容值。输入电容与SVR电容有比例关系，比例关系变化太大会引起开关机POP声。

待机与静音: 高电平时电路工作，低电平时为静音或待机。两管脚建议采用RC控制方式，上电掉电需要一定的斜率爬升，这样配合SVR和输入端电容的充放电可以有效抑制POP音。

TDA7388使用注意事项:

1. 电源要DC12V电流3A以上，推荐10A电流。
2. 喇叭推荐使用阻抗为4欧姆的，灵敏度高的，车用喇叭更好。
3. 对于一些信号电平比较低的音源，要加上前置放大器才能发挥出效果。
4. 注意正负极不能接反，最好用稳压电源供电。
5. 音频输入端子分有前后左右共四个声道输入，带有静音控制，电源地和音频地独立分开，避免声音出现混浊不清。
6. 需要加散热板

产品外形尺寸图



DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.45	4.50	4.65	0.175	0.177	0.183
B	1.80	1.90	2.00	0.070	0.074	0.079
C		1.40			0.055	
D	0.75	0.90	1.05	0.029	0.035	0.041
E	0.37	0.39	0.42	0.014	0.015	0.016
F (1)			0.57		0.022	
G	0.80	1.00	1.20	0.031	0.040	0.047
G1	23.75	24.00	24.25	0.935	0.945	0.955
H (2)	28.90	29.23	29.30	1.139	1.150	1.153
H1		17.00			0.669	
H2		12.80			0.503	
H3		0.80			0.031	
L (2)	22.07	22.47	22.87	0.869	0.884	0.904
L1	18.57	18.97	19.37	0.731	0.747	0.762
L2 (2)	15.50	15.70	15.90	0.610	0.618	0.626
L3	7.70	7.85	7.95	0.303	0.309	0.313
L4		5			0.197	
L5		3.5			0.138	
M	3.70	4.00	4.30	0.145	0.157	0.169
M1	3.60	4.00	4.40	0.142	0.157	0.173
N		2.20			0.086	
O		2			0.079	
R		1.70			0.067	
R1		0.5			0.02	
R2		0.3			0.12	
R3		1.25			0.049	
R4		0.50			0.019	
V					5° (Typ.)	
V1					3° (Typ.)	
V2					20° (Typ.)	
V3					45° (Typ.)	

(1): dam-bar protusion not included
(2): molding protusion included



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