

LOW POWER AUDIO AMPLIFIER—YD8602

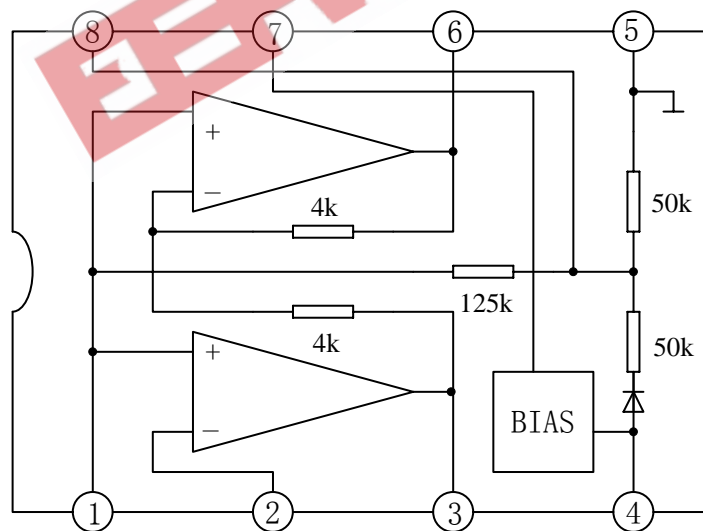
DESCRIPTION

The YD8602 is the audio power amplifier available for low voltage. It supplies differential outputs for maximizing output swing at low voltages.

FEATURES

- *Wide operating supply voltage: $V_{CC}=2\sim 6V$;
- *Low quiescent supply current ($I_{CC}=2.7mA$, typ.);
- *Medium output power
 $P_o=250mW$ at $V_{CC}=6V$, $R_L=32\Omega$, THD=10%;
- *Load impedance range (8Ω to 100Ω);
- *Low distortion;
- *Mute function ($I_{CC}=65\mu A$, typ.);
- *Minimum number of external parts required.

BLOCK DIAGRAM



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ABSOLUTE MAXIMUM RATINGS (Tamb=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	Vcc	8	V
Output Current	Io	250	mA
Maximum Input Voltage	Vi	-1.0~Vcc+1.0	V
Junction Temperature	Tj	-55~+150	°C

RECOMMENDED OPERATION CONDITIONS (Tamb=25°C)

PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
Supply Voltage	Vcc	2.0	4.2	6	V
Load Impedance	RL	8	32	100	Ω
Peak Load Current	Iop		100	200	mA
Differential Gain(5kHz Bandwidth)	Gv	0	30	46	dB
Voltage at Mute	Vi(mute)	0		Vcc	V
Ambient Temperature	Tamb	-20		+70	°C

ELECTRICAL CHARACTERISTICS

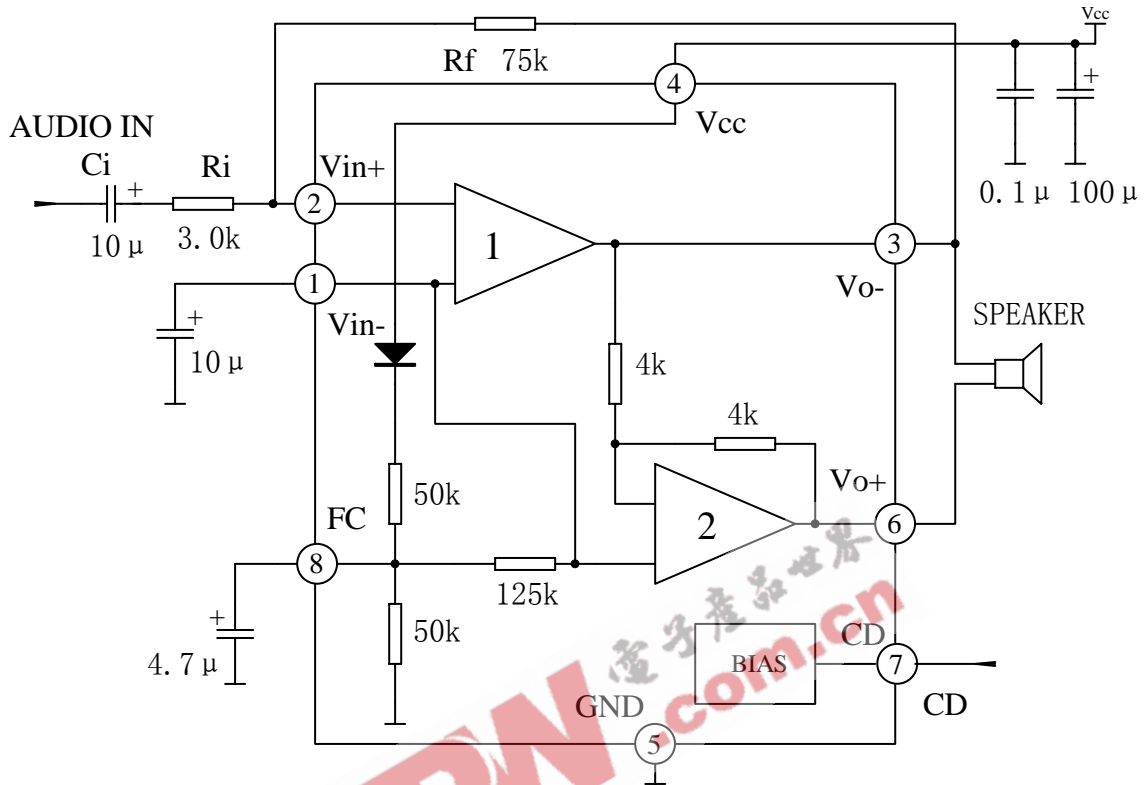
(Tamb=25°C, Vcc=6V, Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Current	Iccq	Vcc=3.0V, Mute=0.8V		2.7	4.0	mA
		Vcc=16.0, Mute=0.8V		3.3	5.0	mA
		Vcc=3.0V, Mute=2.0V		65	100	μA
Output DC Voltage	Vo	Vcc=3.0V, RL=16 Ω, Rf=75k Ω	1.0	1.15	1.25	V
		Vcc=6.0V, RL=16 Ω, Rf=75k Ω		2.65		
Output Offset Voltage	Δ Vo	Vcc=6.0V, Rf=75k Ω, RL=32 Ω	-30	0	+30	mV
Output High Level	VOH	2.0V < Vcc < 6V, Io=-75mA		Vcc -1.0		V
Output Low Level	VOL	2.0V < Vcc < 6V, Iout=75mA		0.16		V
Input Bias Current	IB			-100	-200	nA
Equivalent Resistance	Ri	Pin2	100	150	220	k Ω
	RF	Pin8	18	25	40	k Ω

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Open Loop Gain of Amp 1	G _{vo}		80			dB
Open Loop Gain of Amp 2	G _v	f=1.0kHz, R _L =32 Ω	-0.35	0	0.35	dB
Output Power	P _o	V _{cc} =3.0V, R _L =6 Ω, THD≤10%	55			mW
		V _{cc} =6.0V, R _L =32 Ω, HD≤10%	250			
Total Harmonic Distortion	THD	V _{cc} =6.0V, R _L =32 Ω, P _o =125mW		0.5	1.0	%
		V _{cc} <3.0V, R _L =8 Ω, P _o =20mW		0.5		
Gain Bandwidth	BW			1.5		MHz
Power Supply rejection	RR	V _{cc} =6.0V, ΔV _{cc} =3.0V, fr=100Hz	50			dB
Muting	G _{MUT}	Mute=2.0V, V _{CD} =2.0V, 1.0kHz<f<20kHz,	70			dB

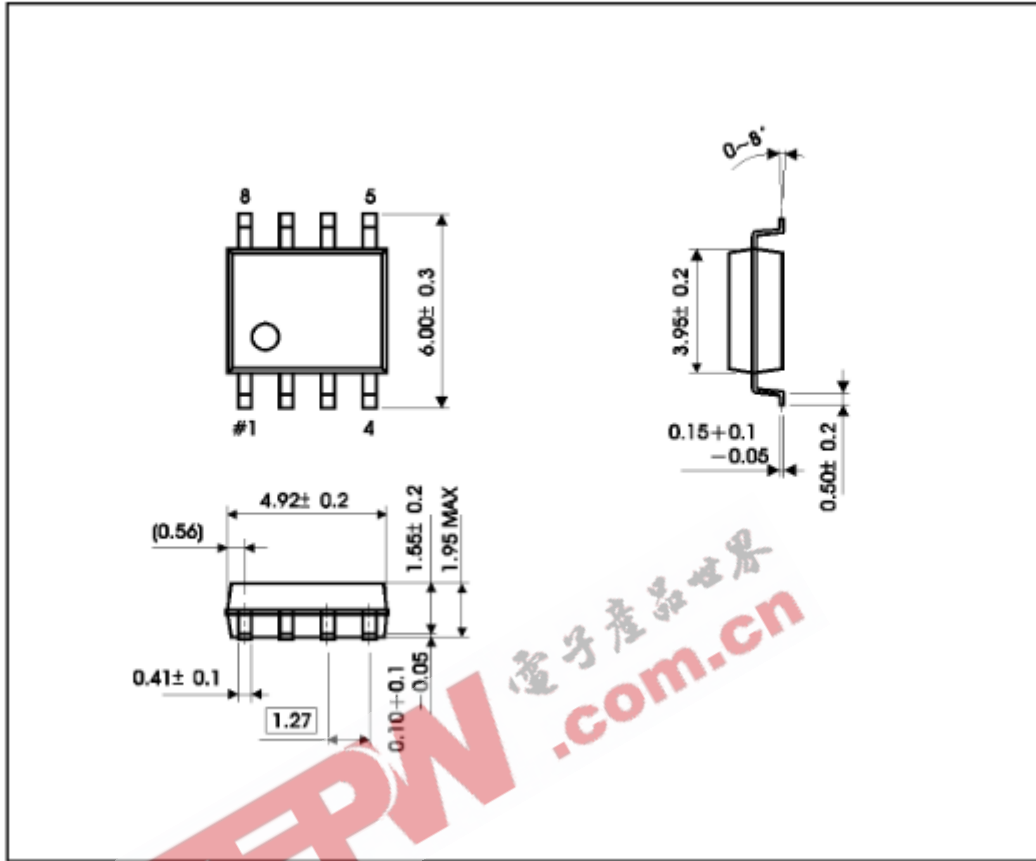
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APPLICATION CIRCUIT



SOP-8

unit:mm



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