

LOW POWER AUDIO AMPLIFIER—YD8602

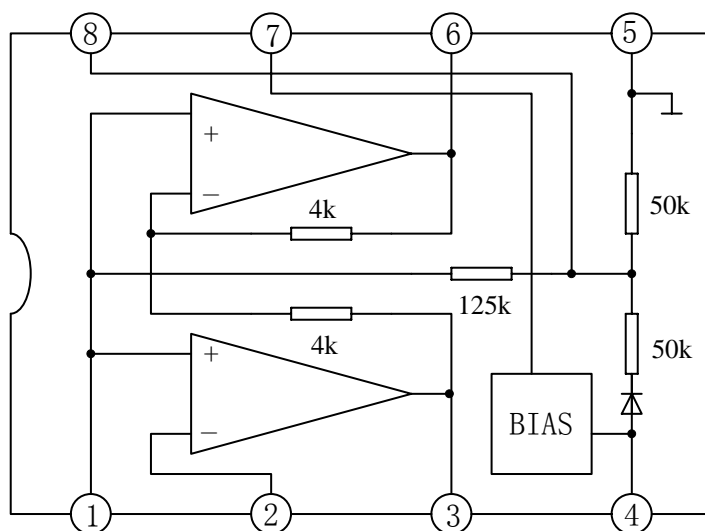
DESCRIPTION

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 ($8\ \Omega$ to $100\ \Omega$);
- *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)

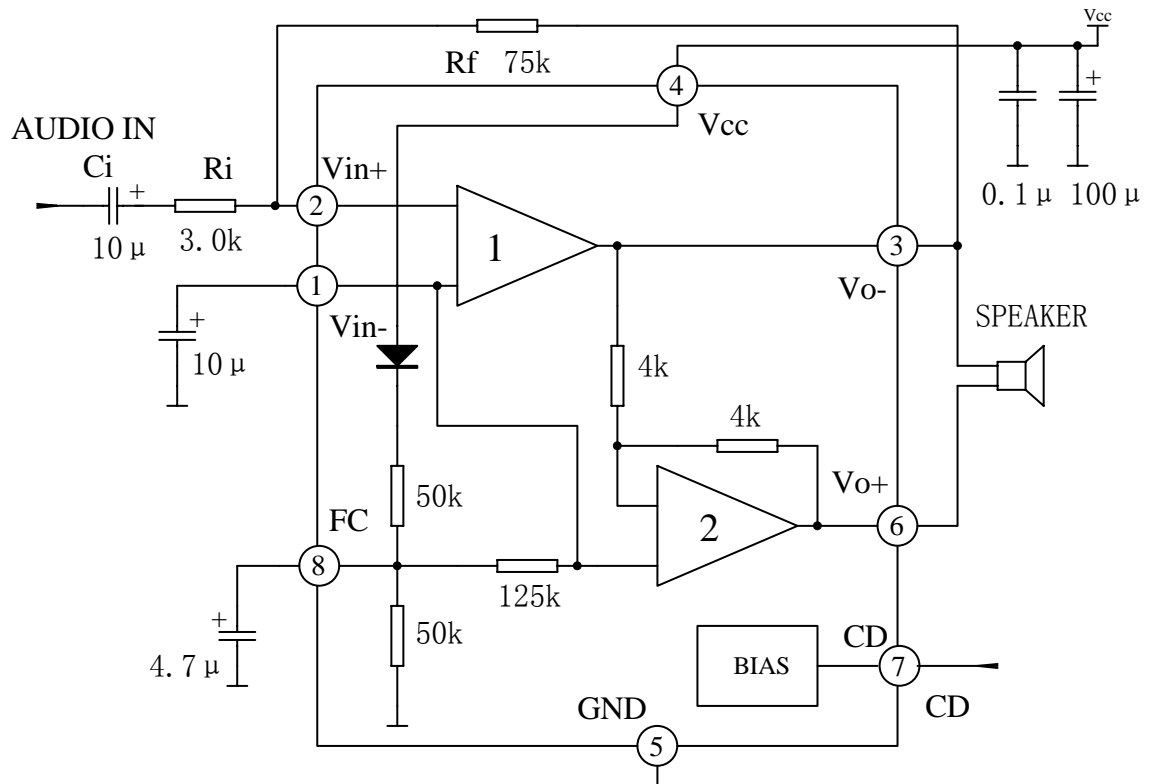
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Current	Iccq	Vcc=3.0V, Mute=0.8V		2.7	4.0	mA
		Vcc=16.0, Mute=0.8V		3.3	5.0	mA
		Vcc=3.0V, Mute=2.0V		65	100	μA
Output DC Voltage	Vo	Vcc=3.0V, RL=16 Ω, Rf=75k Ω	1.0	1.15	1.25	V
		Vcc=6.0V, RL=16 Ω, Rf=75k Ω		2.65		
Output Offset Voltage	Δ Vo	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

YOU DA INTEGRATED CIRCUIT

YD8602

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	$f=1.0\text{kHz}, R_L=32\ \Omega$	-0.35	0	0.35	dB
Output Power	P_o	$V_{cc}=3.0\text{V}, R_L=6\ \Omega, \text{THD}\leq 10\%$	55			mW
		$V_{cc}=6.0\text{V}, R_L=32\ \Omega, \text{HD}\leq 10\%$	250			
Total Harmonic Distortion	THD	$V_{cc}=6.0\text{V}, R_L=32\ \Omega, P_o=125\text{mW}$		0.5	1.0	%
		$V_{cc}<3.0\text{V}, R_L=8\ \Omega, P_o=20\text{mW}$		0.5		
Gain Bandwidth	BW			1.5		MHz
Power Supply rejection	RR	$V_{cc}=6.0\text{V}, \Delta V_{cc}=3.0\text{V}, f_r=100\text{Hz}$	50			dB
Muting	G_{MUT}	Mute=2.0V, $V_{CD}=2.0\text{V}$, $1.0\text{kHz}<f<20\text{kHz}$,	70			dB

APPLICATION CIRCUIT



SOP-8

unit:mm

