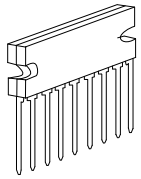
AN17823 Preliminary **LINEAR INTEGRATED CIRCUIT**

BTL 4.0W X 1CH POWER AMPLIFIER



HSIP-9B

■ DESCRIPTION

The UTC **AN17823** is BTL 4.0W x 1CH power amplifier with standby function and volume function.

■ FEATURES

* 3-W output (8Ω) with supply voltage of 8V
* 4-W output (8Ω) with supply voltage of 9V
* On-chip standby function
* On-chip volume function

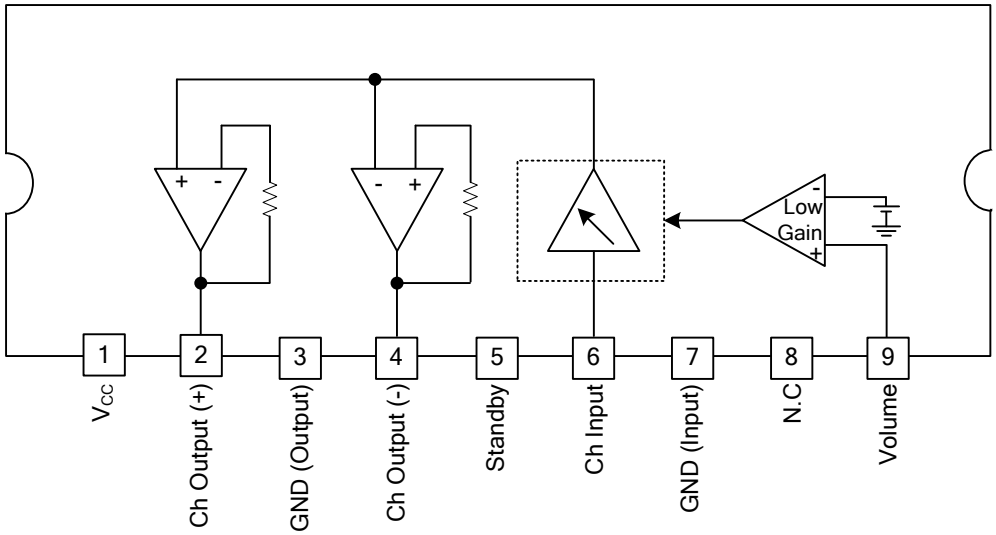
■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
AN17823L-H09-B-T	AN17823G-H09-B-T	HSIP-9B	Tube

AN17823L-H09-B-T
(1)Packing Type
(2)Package Type
(3)Halogen Free

(1) T: Tube
(2) H09: HSIP-9B
(3) G: Halogen Free, L: Lead Free

■ BLOCK DIAGRAM AND PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V_{CC}	Supply Voltage
2	Ch Output (+)	Output+
3	GND (Output)	Power Ground
4	Ch Output (-)	Output-
5	Standby	Standby
6	Ch Input	Signal Input
7	GND (Input)	Signal Ground
8	N.C	No Connect (Do not apply voltage or current from outside.)
9	Volume	Volume

■ ABSOLUTE MAXIMUM RATING(T_A= 25°C, Unless otherwise specified.)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage (DC)	V_{CC}	14.4	V
Output Current	Iout	1.0	A
Power Dissipation (T_A = 70°C)	P_D	1.22	W
Storage Temperature (Note)	T_{STG}	-55 ~ +150	°C
Operating Temperature (Note)	T_{OPR}	-25 ~ +70	°C

Notes: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ RECOMMENDED OPERATING RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	3.5 ~ 13.5	V

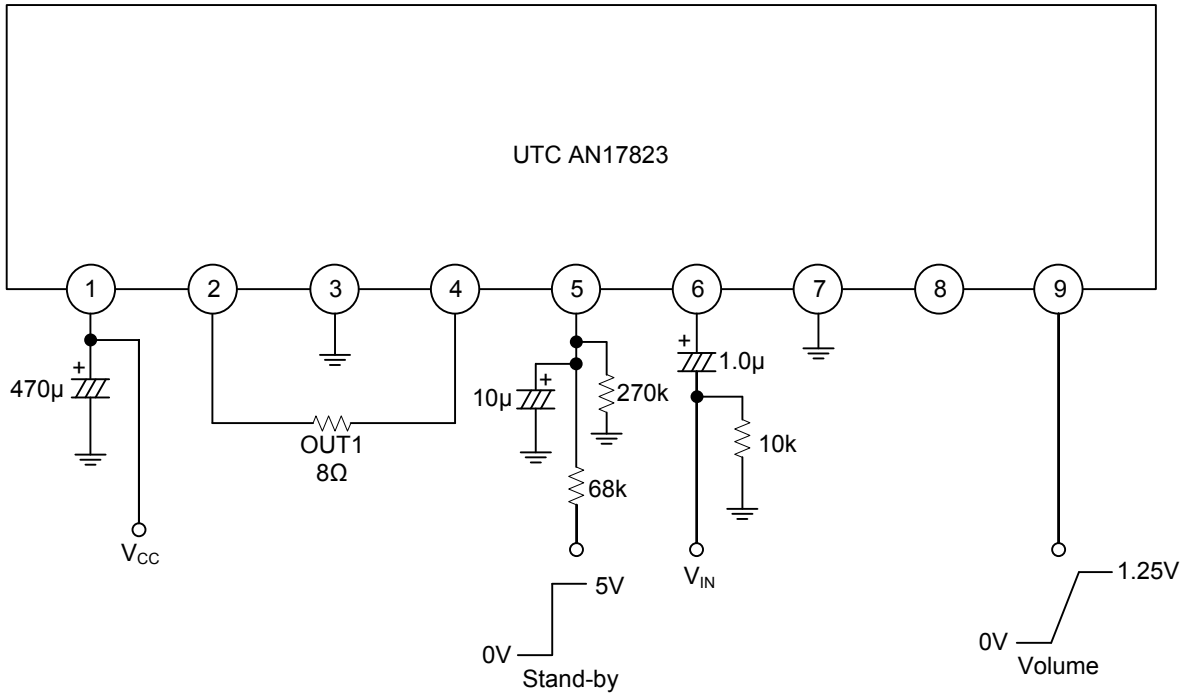
■ ELECTRICAL CHARACTERISTICS

(T_A= 25°C, V_{CC}=8.0V, frequency=1kHz and R_L=8Ω, Unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Quiescent Circuit Current	I_{CQ}	V_{IN}=0V, Vol=0V		20	60	mA
Standby Current	I_{STB}	V_{IN}=0V, Vol=0V		1	10	μA
Output Offset Voltage	V_{OFF}	R_G=10kΩ, Vol=0V	-250	0	250	mV
Total Harmonic Distortion	THD	P_O=0.5W, Vol=1.25V		0.10	0.5	%
Maximum Power Output 1	P_O1	THD=10%, Vol=1.25V	2.4	3.0		W
Maximum Power Output 2	P_O2	V_{CC}=9V, THD=10%, Vol=1.25V	3.2	4.0		W
Ripple Rejection Ratio (Note)	RR	R_G=10kΩ, Vol=0V V_R=0.5Vrms, fr=120Hz	30	50		dB
Output Noise Voltage (Note)	V_{NO}	R_G=10kΩ, Vol=0V		0.10	0.4	mVrms
Volume Attenuation Ratio (Note)	Att	P_O=0.5W, Vol=0V	70	85		dB
Voltage Gain	G_V	P_O=0.5W, Vol=1.25V	31	33	35	dB
Middle Voltage Gain	G_{VM}	P_O=0.5W, Vol=0.6V	20.5	23.5	26.5	dB
Standby Pin Current	I_{STB2}	V_{IN}=0V, V_{STB}=3V			25	μA
Volume Pin Current	I_{VOL}	V_{IN}=0V, V_Ol=0V	-12			μA
Input Impedance	Zi	V_{IN}=±0.3V_{DC}	24	30	36	kΩ

Note: In measuring, the filter for the range of 15 Hz ~ 30 kHz (12 dB/OCT) is used.

■ TYPICAL APPLICATION CIRCUIT



■ APPLICATION INFORMATION

1. Make sure that the IC is free of any pin short-circuiting, ground short, and load short-circuiting.
2. Ground the radiation fin so that there will be no difference in electric potential between the radiation fin and ground.
3. The thermal protection circuit operates at a Tj of approximately 150°C. The thermal protection circuit is reset automatically when the temperature drops.
4. Make sure that the heat radiation design is effective enough if the Vcc is comparatively high or the IC operates high output power.
5. Connect only ground pin for signal sources to the signal GND pin of the amplifier on the previous stage.