

UTC UNISONIC TECHNOLOGIES CO., LTD

AN17823

Preliminary

LINEAR INTEGRATED CIRCUIT

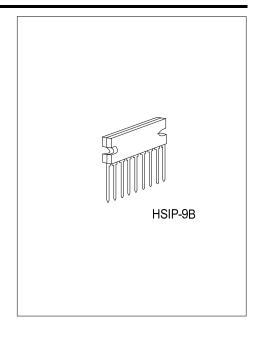
BTL 4.0W X 1CH POWER **AMPLIFIER**

DESCRIPTION

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

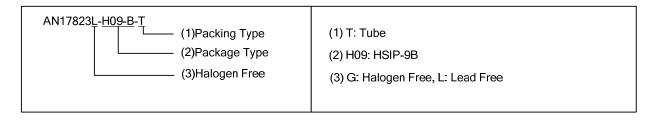
FEATURES

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



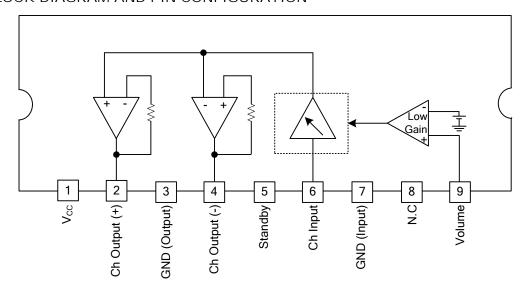
ORDERING INFORMATION

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



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■ BLOCK DIAGRAM AND PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	Vcc	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	MBOL RATINGS	
Supply Voltage (DC)	V _{CC}	14.4	V
Output Current	lout	1.0	Α
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

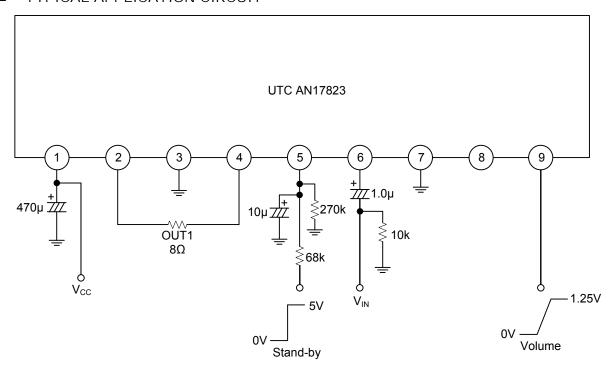
■ ELECTRICAL CHARACTERISTICS

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Quiescent Circuit Current	Icq	V _{IN} =0V, Vol=0V		20	60	mA
Standby Current	I _{STB}	V _{IN} =0V, Vol=0V		1	10	μΑ
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 ₀ 1	THD=10%, Vol=1.25V	2.4	3.0		W
Maximum Power Output 2	P _O 2	V _{CC} =9V, THD=10%, Vol=1.25V	3.2	4.0		W
Ripple Rejection Ratio (Note)	RR	R_G =10k Ω , Vol=0V V _R =0.5Vrms, fr=120Hz	30	50		dB
Output Noise Voltage (Note)	V_{NO}	$R_G=10k\Omega$, $Vol=0V$		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	μΑ
Volume Pin Current	I _{VOL}	V _{IN} =0V, V _O I=0V	-12			μΑ
Input Impedance	Zi	$V_{IN}=\pm0.3V_{DC}$	24	30	36	kΩ

Note: In measuring, the filter for the range of 15 Hz \sim 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.

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