



M2073

LINEAR INTEGRATED CIRCUIT

DUAL LOW VOLTAGE POWER AMPLIFIER

DESCRIPTION

As a dual low voltage power amplifier, the UTC **M2073** has the internal circuits, such as parasitic oscillation preventing circuit and muting circuit.

Considering the fixed gain of UTC **M2073**, there's an additional voltage reducing application for the UTC **M2073**.

The normal application of **M2073** is being used as a dual audio power amplifier in lots of portable equipments.

FEATURES

- * Operating Voltage ($V_{CC}=1.8V\sim15V$)
- * Low Crossover Distortion
- * Low Operating Current
- * Bridge or Stereo Configuration
- * No Turn-on Noise
- * Bipolar Technology

ORDERING INFORMATION

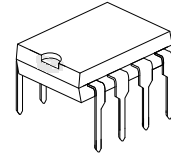
Ordering Number		Package	Packing
Lead Free	Halogen Free		
M2073L-D08-T	M2073G-D08-T	DIP-8	Tube
-	M2073G-S08-R	SOP-8	Tape Reel

Note: Pin Assignment: G: Gate D: Drain S: Source

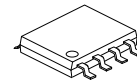
M2073L-D08-T (1) Packing Type (2) Package Type (3) Green Package	(1) T: Tube, R: Tape Reel (2) D08: DIP-8, S08: SOP-8 (3) L: Lead Free, G: Halogen Free and Lead Free
--	---

MARKING

DIP-8	SOP-8
UTC □□□□ → Date Code M2073 □ → L: Lead Free □ → G: Halogen Free □□ → Lot Code	UTC □□□□ → Date Code M2073G □□ → Lot Code

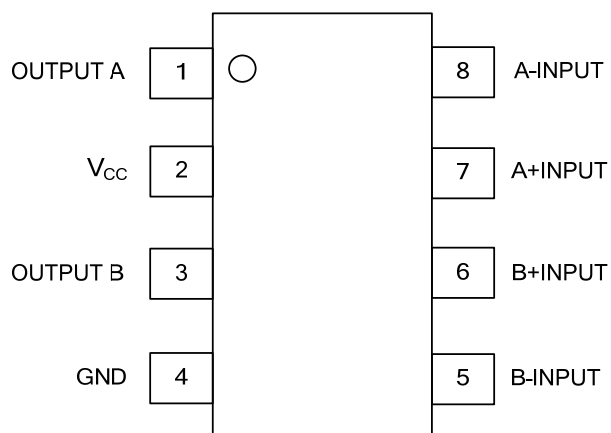


DIP-8

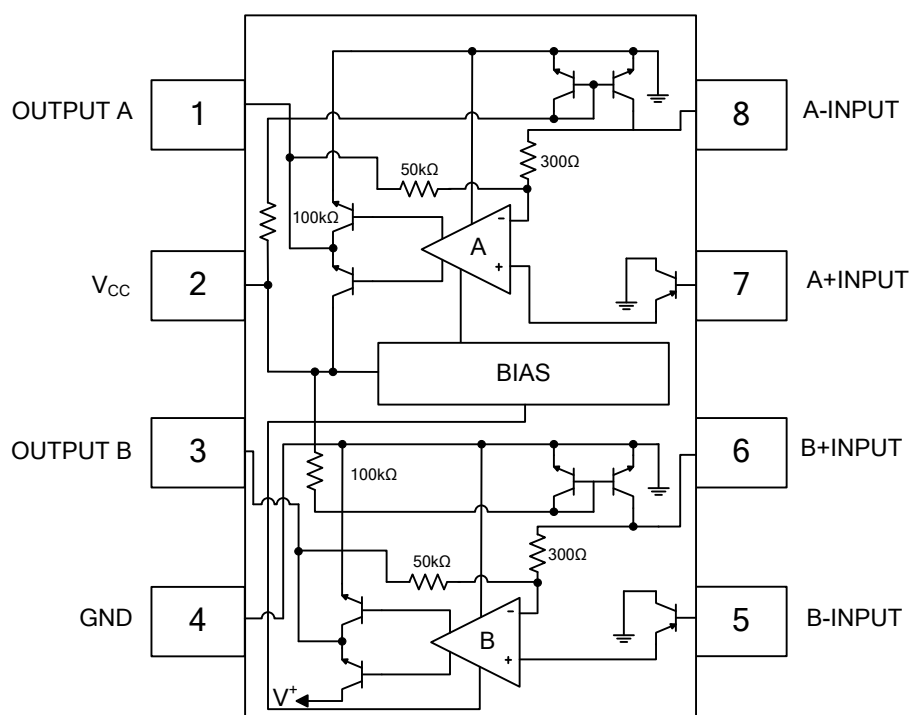


SOP-8

PIN CONFIGURATION



BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Supply Voltage		V _{CC}	15	V
Input Voltage Range		V _{IN}	± 0.4	V
Output Peak Current		I _{OP}	1	A
Power Dissipation	DIP-8	P _D	700	mW
	SOP-8		300	mW
Junction Temperature		T _J	125	°C
Operating Temperature		T _{OPR}	-40 ~ +85	°C
Storage Temperature		T _{STG}	-40 ~ +125	°C

Note: 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.

■ ELECTRICAL CHARACTERISTICS

BTL Configuration (Page 6) ($V_{CC}=6V, T_a=25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT	
Operating Voltage	V _{CC}			1.8		15	V	
Operating Current	I _{CC}	R _L =∞			6	9	mA	
Output Offset Voltage (Between the Outputs)	ΔV _{OUT}	R _L =8Ω			10	50	mV	
Input Bias Current	I _{I(BIAS)}				100		nA	
Output Power	P _{OUT}	THD=10% f=1kHz	V _{CC} =9V,R _L =16Ω (Note)	DIP-8		2.0		W
			V _{CC} =6V,R _L =8Ω (Note)		0.9	1.2		W
			V _{CC} =4.5V,R _L =8Ω			0.6		W
			V _{CC} =4.5V,R _L =4Ω (Note)			0.8		W
			V _{CC} =3V,R _L =4Ω	200	300		mW	
			V _{CC} =2V,R _L =4Ω		80		mW	
			V _{CC} =6V,R _L =16Ω (Note)		0.8		W	
			V _{CC} =4V,R _L =8Ω (Note)	350	460		mW	
		THD=1% f=40Hz~15kHz	V _{CC} =3V,R _L =4Ω (Note)	200	300		mW	
			V _{CC} =2V,R _L =4Ω		80		mW	
			V _{CC} =6V,R _L =8Ω	DIP-8		1.0		W
			V _{CC} =4.5V,R _L =4Ω			0.6		W
Total Harmonic Distortion	THD	P _{OUT} =0.5W, R _L =8Ω, f=1kHz	DIP-8		0.2		%	
		V _{CC} =4V,R _L =8Ω, P _{OUT} =200mW, R _L =8Ω, f=1kHz	SOP-8		0.2		%	
Close Loop Voltage Gain	G _V	f=1kHz		41	44	47	dB	
Input Impedance	Z _{IN}	f=1kHz		100			kΩ	
Equivalent Input Noise Voltage	V _{NI1}	R _S =10kΩ, A Curve			2		μV	
	V _{NI2}	R _S =10kΩ, B=22Hz~22kHz			2.5		μV	
Ripple Rejection	RR	f=100Hz			40		dB	
Cutoff Frequency	f _H	G _V = -3dB from f=1kHz, R _L =8Ω, P _{OUT} =1W	DIP-8		130		kHz	
		G _V =-3dB from f=1kHz, R _L =16Ω, P _{OUT} =0.5W	SOP-8		130		kHz	

Note: At on PC Board

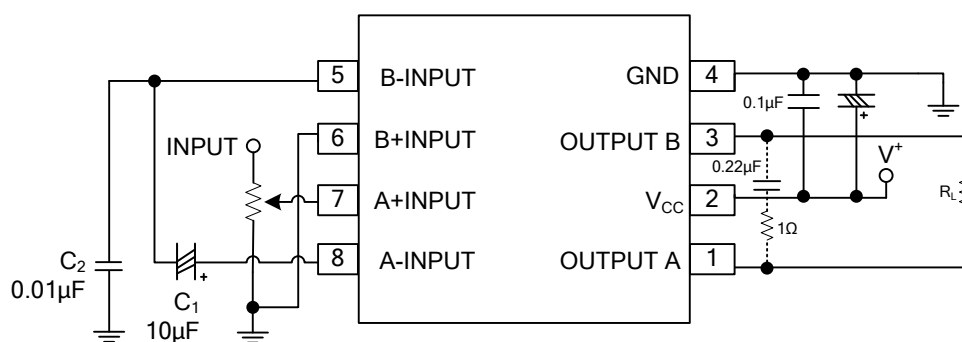
■ ELECTRICAL CHARACTERISTICS(Cont.)

Stereo Configuration (Page 7)

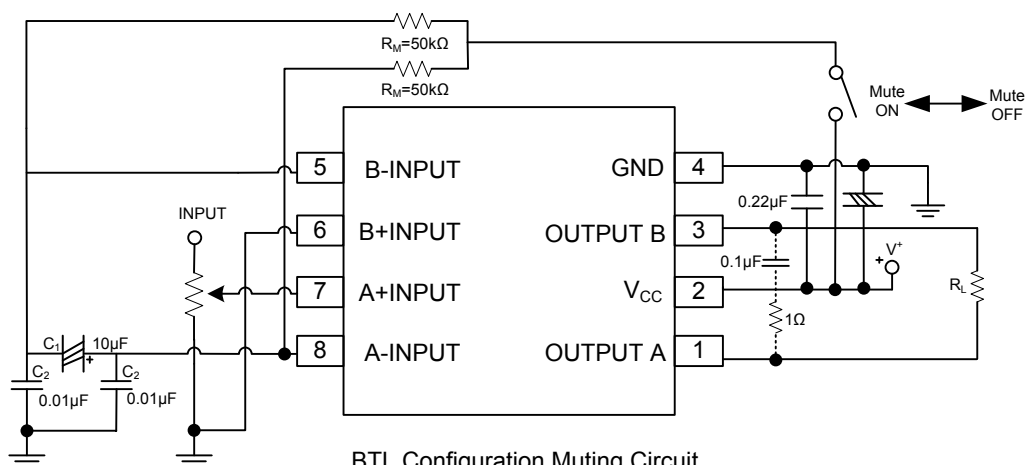
PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Operating Voltage	V _{CC}			1.8		15	V
Output Voltage	V _{OUT}				2.7		V
Operating Current	I _{CC}	R _L =∞			6	9	mA
Input Bias Current	I _{I(BIAS)}				100		nA
Output Power (Each Channel)	P _{OUT}	THD=10% f=1kHz	V _{CC} =6V,R _L =4Ω (Note)	DIP-8	0.5	0.65	W
			V _{CC} =4.5V,R _L =4Ω			0.32	W
			V _{CC} =3V,R _L =4Ω			120	mW
			V _{CC} =2V,R _L =4Ω			30	mW
			V _{CC} =6V,R _L =16Ω	SOP-8		240	mW
			V _{CC} =5V,R _L =8Ω (Note)			270	mW
			V _{CC} =4V, R _L =4Ω (Note)		180	250	mW
			V _{CC} =3V, R _L =4Ω			120	mW
		V _{CC} =2V, R _L =4Ω		30	mW		
		THD=1% f=1kHz	V _{CC} =6V,R _L =4Ω	DIP-8		500	mW
			V _{CC} =4.5V,R _L =4Ω			250	mW
			V _{CC} =4V,R _L =4Ω	SOP-8		180	mW
Total Harmonic Distortion	THD		P _{OUT} =0.4W, R _L =4Ω, f=1kHz		DIP-8		0.25
		V _{CC} =4V, R _L =4Ω, P _{OUT} =150mW, f=1kHz		SOP-8		0.25	%
Voltage Gain	G _V	f=1kHz		41	44	47	dB
Channel Balance	Δ G _V					±1	dB
Input Impedance	Z _{IN}	f=1kHz		100			kΩ
Equivalent Input Noise Voltage	V _{NI1}	R _S =10kΩ, A Curve			2.5		μV
	V _{NI2}	R _S =10kΩ, B=22Hz~22kHz			3		μV
Ripple Rejection	RR	f=100Hz, C _X =100μF		24	30		dB
Cutoff Frequency	f _H	G _V =-3dB from f=1kHz, R _L =8Ω, P _{OUT} =250mW		DIP-8	200		kHz
		G _V =-3dB from f=1kHz, R _L =16Ω, P _{OUT} =125mW		SOP-8	200		kHz

Note: At on PC Board

APPLICATION CIRCUITS FOR BTL MODE

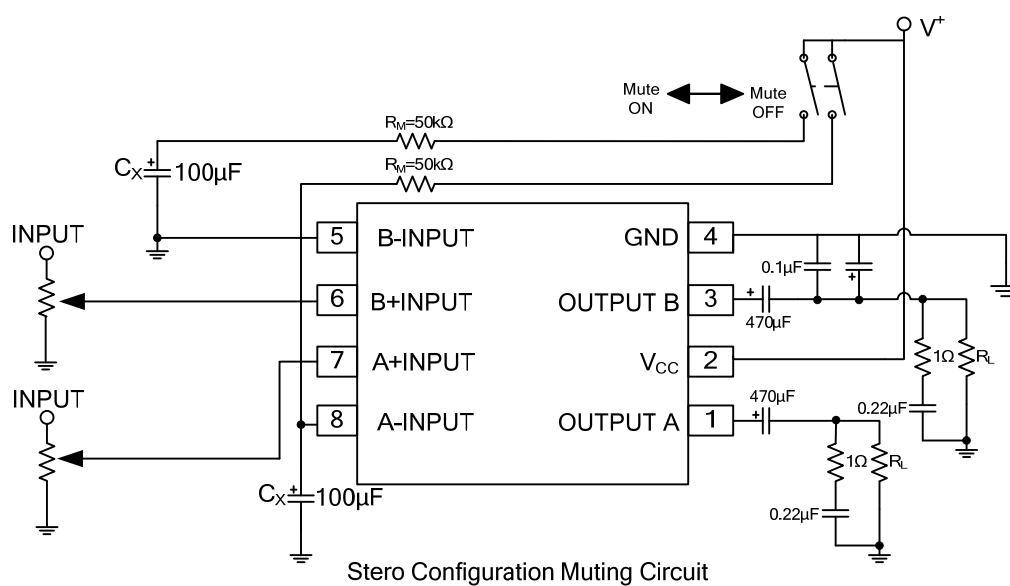
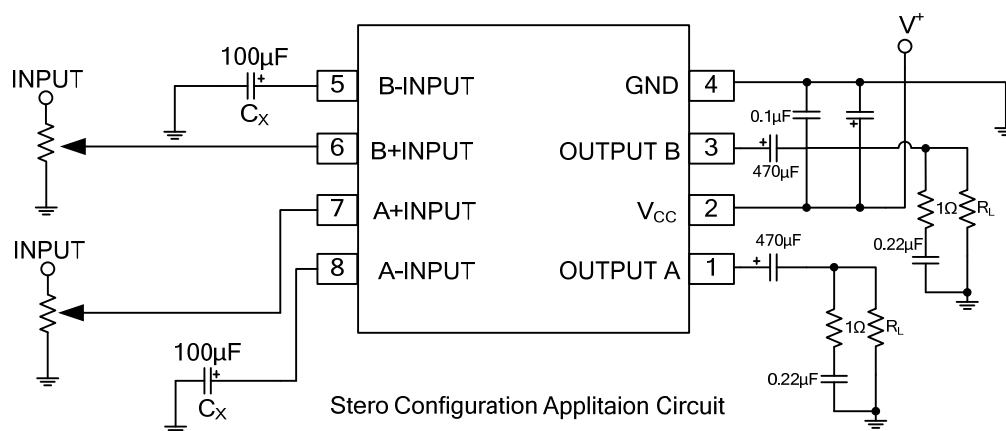


BTL Configuration Applaitaion Circuit

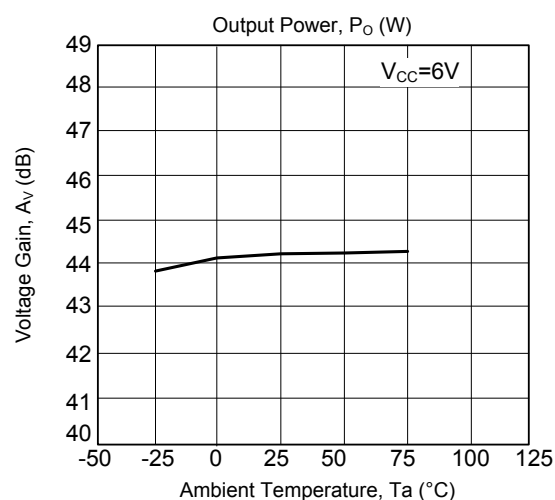
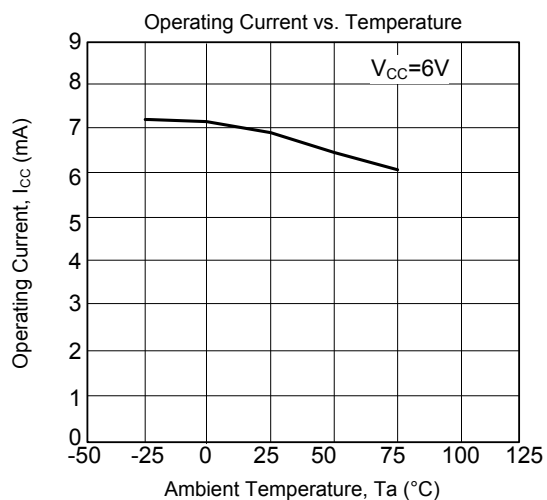
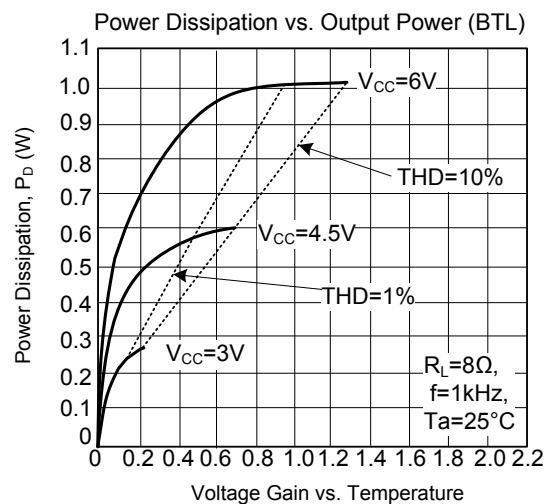
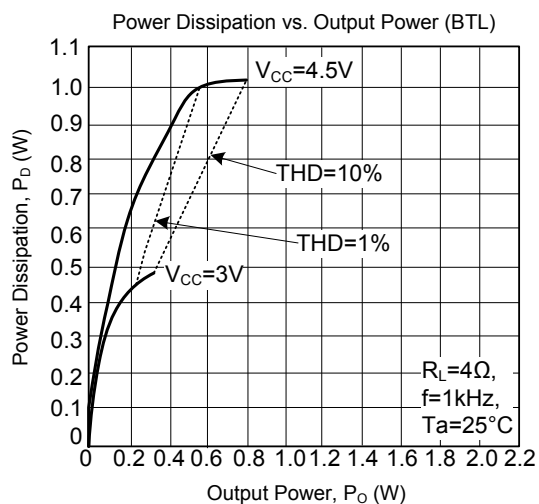
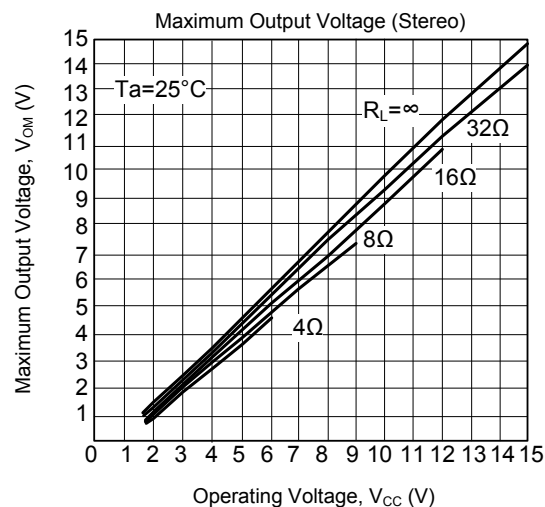
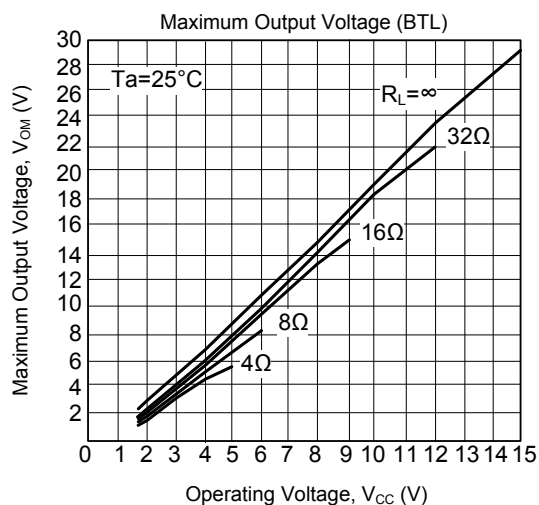


BTL Configuration Muting Circuit

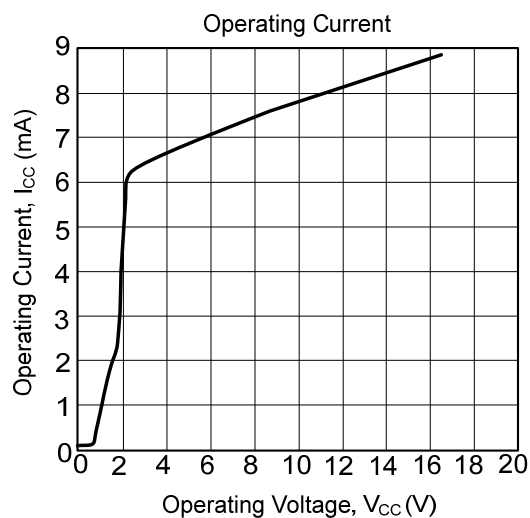
APPLICATION CIRCUITS FOR STERO MODE



■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.