



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**.

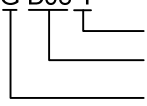
The normal application of **M2073** is being used as a dual audio power amplifier in lots of portable equipments.

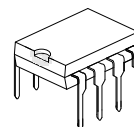
FEATURES

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

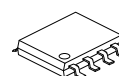
ORDERING INFORMATION

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

M2073G-D08-T 	(1)Packing Type (2)Package Type (3)Halogen Free	(1) T: Tube, R: Tape Reel (2) D08: DIP-8, S08: SOP-8 (3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn
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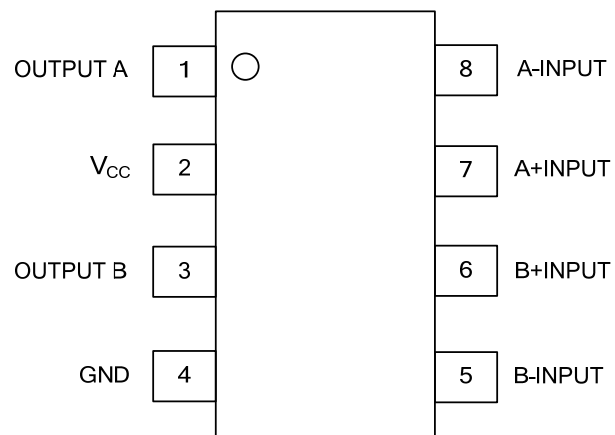


DIP-8

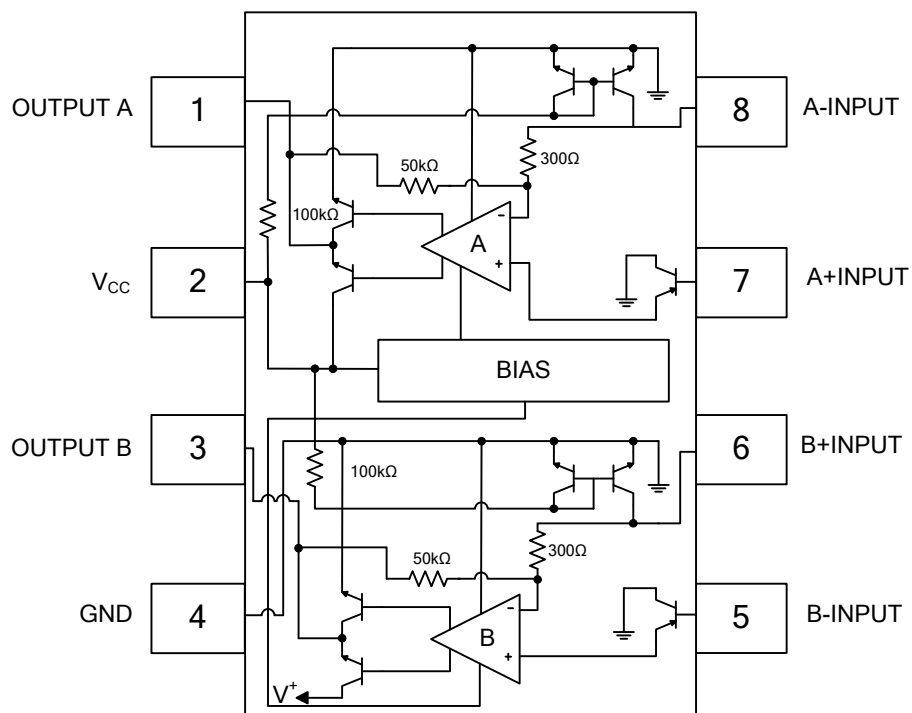


SOP-8

■ 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) ($V_{CC}=6\text{V}$, $T_a=25^{\circ}\text{C}$)

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)	SOP-8		0.8		W
			V _{CC} =4V,R _L =8Ω (Note)		350	460		mW
		V _{CC} =3V,R _L =4Ω (Note)	200		300		mW	
		V _{CC} =2V,R _L =4Ω			80		mW	
		THD=1% f=40Hz~15kHz	V _{CC} =6V,R _L =8Ω	DIP-8		1.0		W
			V _{CC} =4.5V,R _L =4Ω			0.6		W
V _{CC} =4V,R _L =8Ω	SOP-8			380		mW		
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

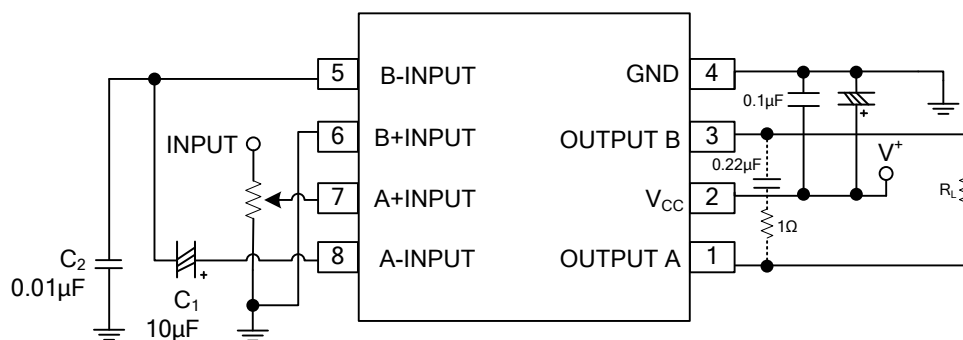
■ ELECTRICAL CHARACTERISTICS(Cont.)

Stereo Configuration (Page 7)

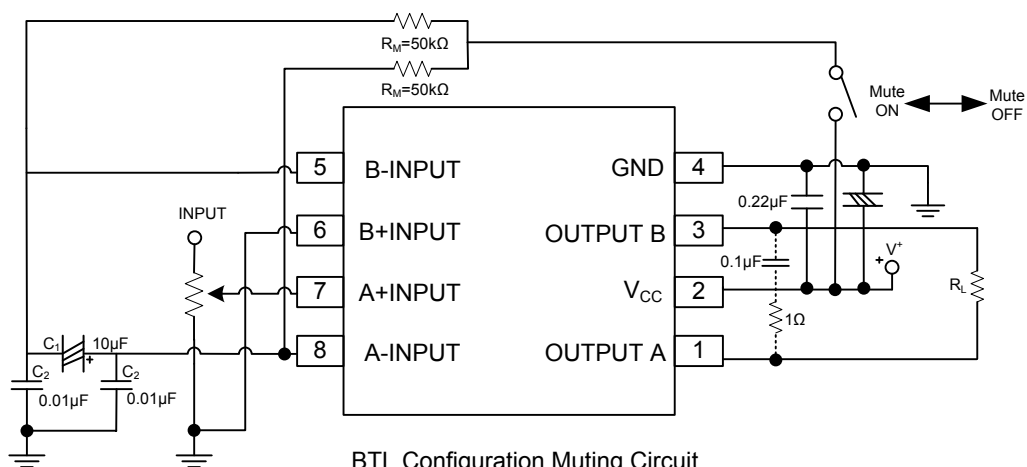
PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT	
Operating Voltage	V _{CC}			1.8		15	V	
Output Voltage	V _{OUT}				2.7		V	
Operating Current	I _{CC}	R _L =∞			6	9	mA	
Input Bias Current	I _{I(BIAS)}				100		nA	
Output Power (Each Channel)	P _{OUT}	THD=10% f=1kHz	V _{CC} =6V,R _L =4Ω (Note)	DIP-8	0.5	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

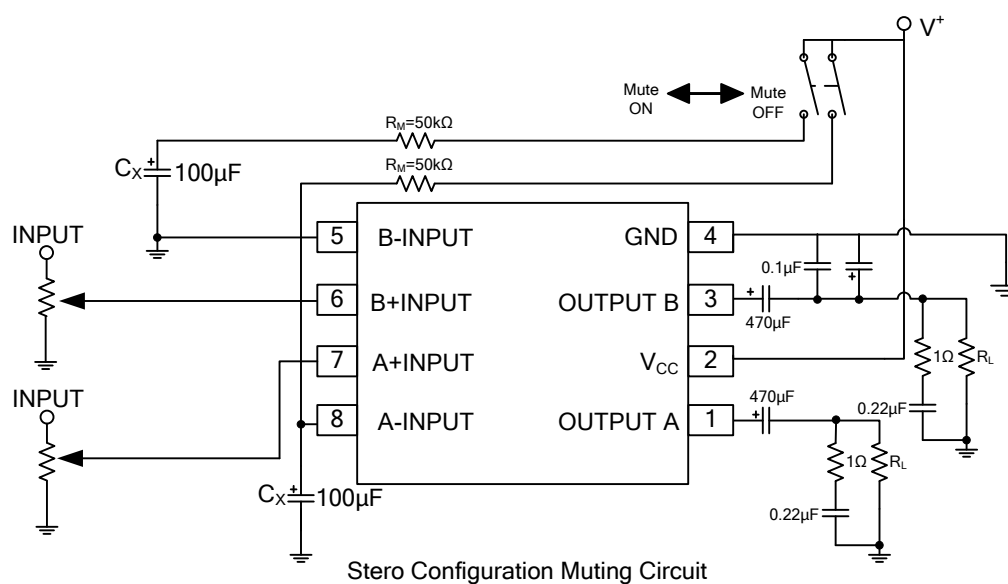
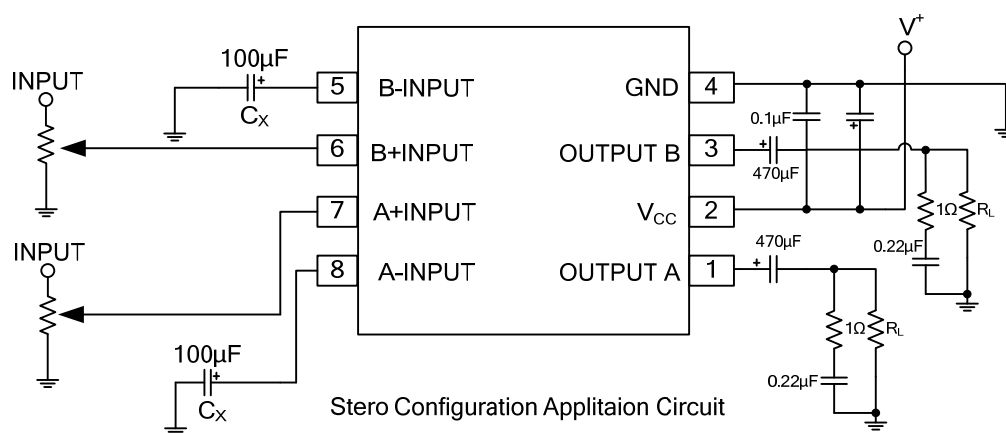


BTL Configuration Applaitaion Circuit

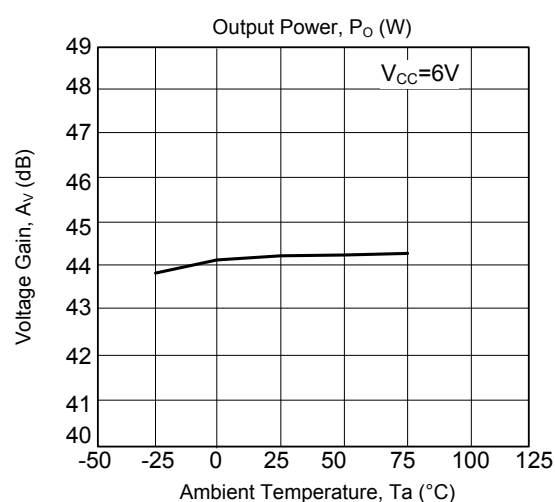
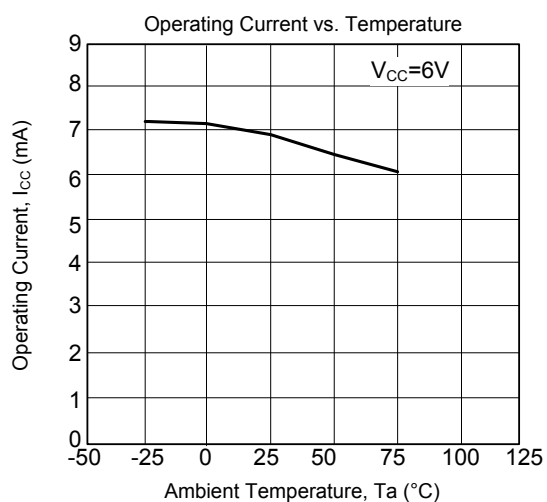
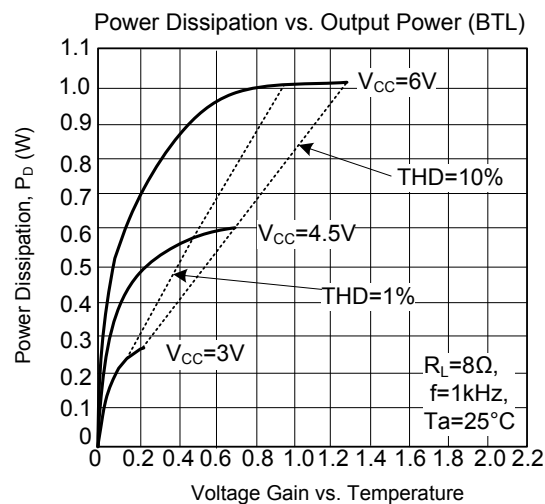
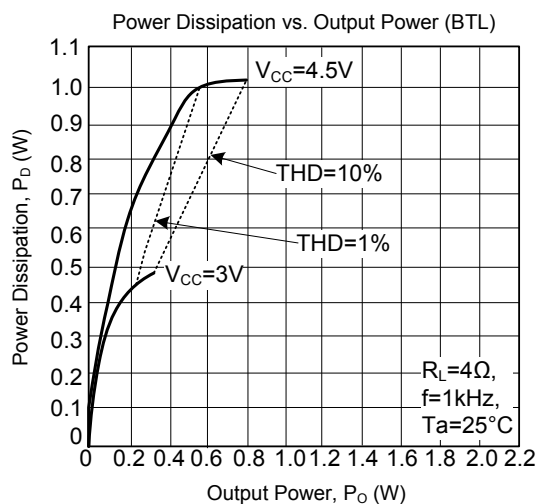
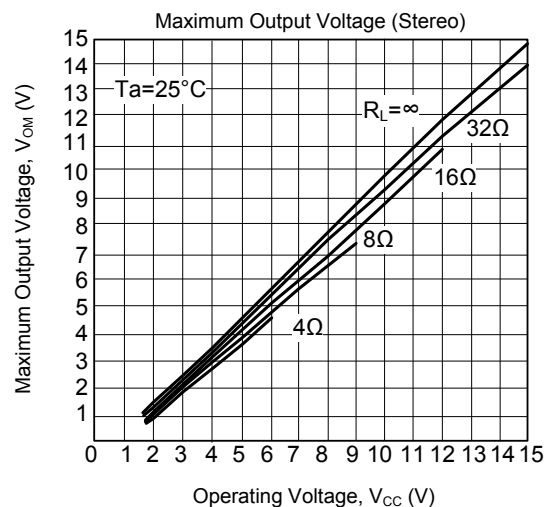
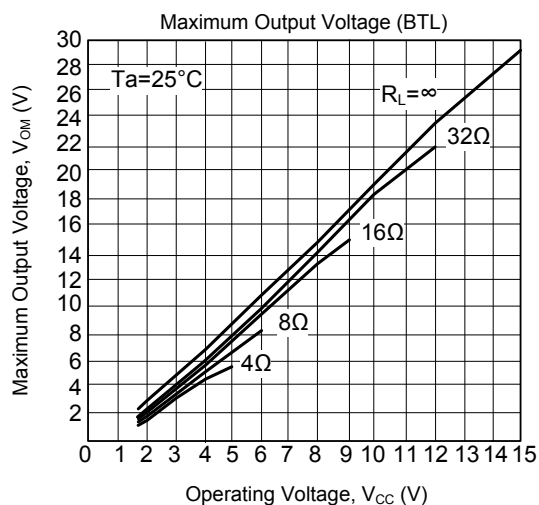


BTL Configuration Muting Circuit

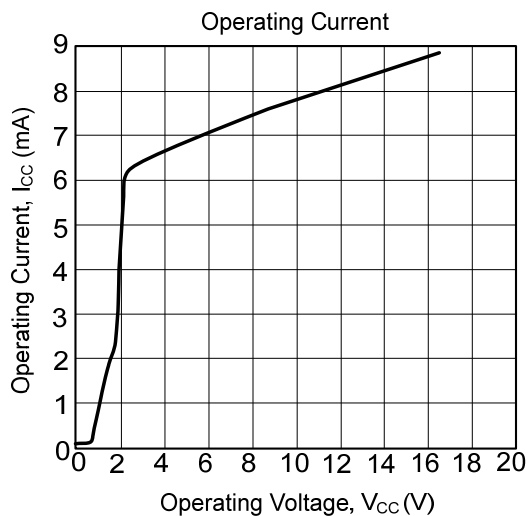
■ APPLICATION CIRCUITS FOR STERO MODE



TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS (Cont.)



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