

M62477FP

LINE AMPLIFIER FOR CD PLAYER

DESCRIPTION

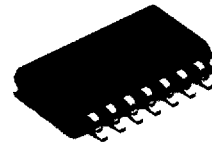
The M62477FP is a semiconductor integrated circuit developed as an line amplifier for CD (CD-ROM) player, CD Radio Cassette, etc.

This IC has mute function and stand-by function for the audio output.

It can be connected directly with differential output of 1bit DAC, with few external parts.

FEATURES

- Directly connectable to differential output of 1bit DAC
- Few external parts are required
- Built-in LPF amp..... $G_v = -6.7\text{dB}(\text{typ})$
..... $f_c = 65\text{kHz}(\text{typ})$
- Built-in mute circuit
- Built-in stand-by circuit
- 14-pin flat package

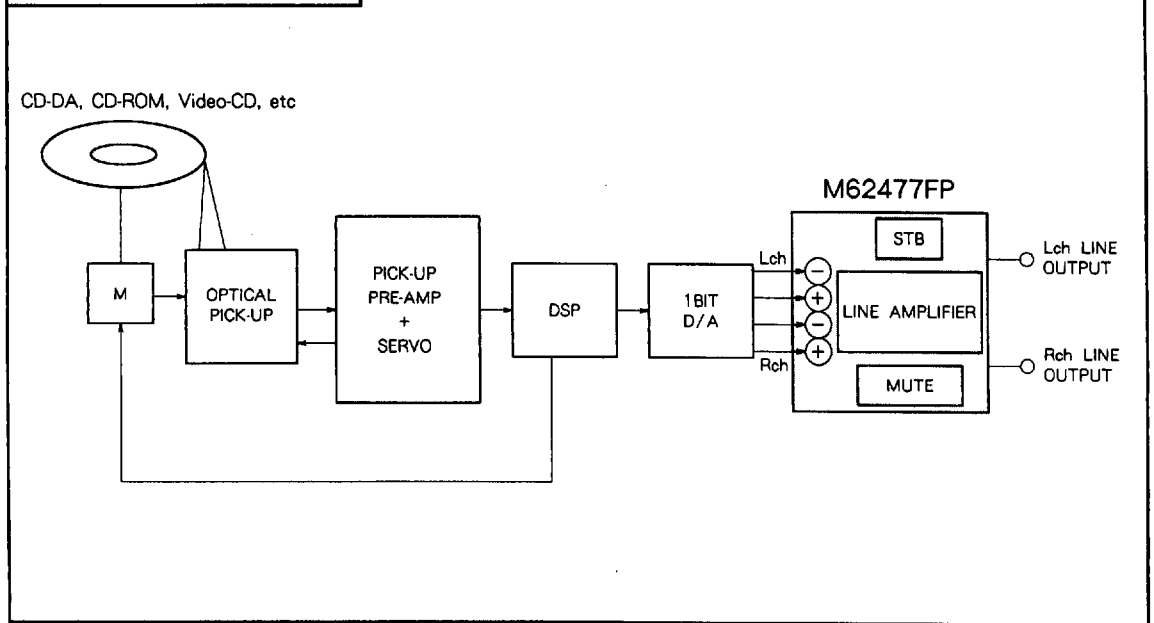


Outline 14P2N-A
1.27mm pitch 300mil SOP
(7.8mm × 10.1mm × 1.8mm)

RECOMMENDED OPERATING CONDITIONS

- Supply voltage range..... $V_{cc} = 4.5$ to 5.5V
- Rated supply voltage..... $V_{cc} = 5.0\text{V}$

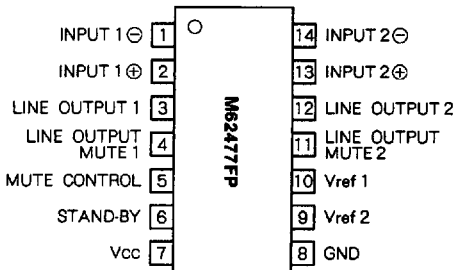
SYSTEM CONFIGURATION



M62477FP

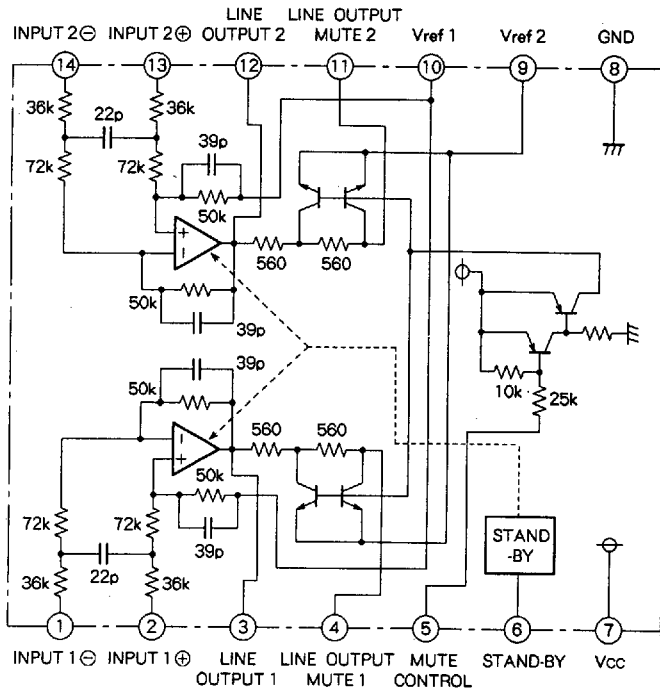
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PIN CONFIGURATION (TOP VIEW)



Outline 14P2N-A

IC INTERNAL BLOCK DIAGRAM



PIN DESCRIPTION

Pin No.	Symbol	Name	Function
①	IN1 \ominus	Input 1 \ominus	CH1 inversion input
②	IN1 \oplus	Input 1 \oplus	CH1 non-inversion input
③	LINE OUT1	Line output 1	CH1 Line output(non-mute)
④	LINE OUT MUTE 1	Line output mute 1	CH1 Line output(mute)
⑤	MUTE CONTROL	Mute control	Mute control signal input(control signal : H \rightarrow Mute ON)
⑥	STAND-BY	Stand-by	Stand-by control signal input(control signal : L \rightarrow STB ON)
⑦	Vcc	Vcc	Vcc = 5.0V(Typ)
⑧	GND	GND	
⑨	Vref 2	Vref 2	1/2Vcc(Vref = 2.5V : Typ)
⑩	Vref 1	Vref 1	1/2Vcc(Vref = 2.5V : Typ)
⑪	LINE OUT MUTE 2	Line output mute 2	CH2 Line output(mute)
⑫	LINE OUT2	Line output 2	CH2 Line output(non-mute)
⑬	IN2 \oplus	Input 2 \oplus	CH2 non-inversion input
⑭	IN2 \ominus	Input 2 \ominus	CH2 inversion input

ABSOLUTE MAXIMUM RATINGS (Ta = 25°C, unless otherwise noted)

Symbol	Parameter	Ratings	Unit
Vcc	Supply voltage	12.0	V
Pd	Power dissipation	500	mW
Ke	Thermal derating Ta \geq 25°C	5.0	mW/°C
Topr	Operating temperature	-20 to +75	°C
Tstg	Storage temperature	-40 to +125	°C

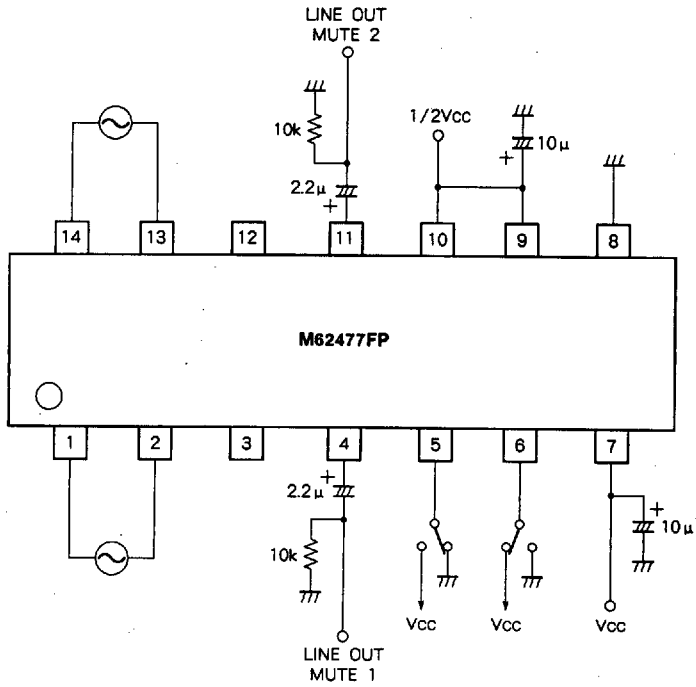
ELECTRICAL CHARACTERISTICS (Vcc = 5.0V, f = 1kHz, Vi = 1.5Vrms, Ta = 25°C, Vref1 = 2.5V, Vref2 = 2.5V, RL = 10k Ω)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
Icc	Circuit current	Quiescent	-	3.0	6.0	mA
Gv1	Voltage gain 1	Pin ③, ⑫ measurement	-7.6	-6.6	-5.6	dB
Δ Gv2	Δ Voltage gain 2	Pin ③, ⑫ measurement, f = 20kHz Voltage gain difference between Gv1 and Gv2	-1.8	-0.4	0.6	dB
Gv3	Voltage gain 3	Pin ③, ⑫ measurement, f = 100kHz	-	-12.6	-10.6	dB
Δ GvL	Channel balance	Gv1 difference between Ch1(③) and Ch2(⑫)	-0.5	0	0.5	dB
THD	Total harmonics distortion	Vo = 0.2Vrms	-	0.015	0.05	%
THDmax	Total harmonics distortion(max)	Vo = 0.9Vrms	-	0.06	0.09	%
S/N	Signal/noise ratio	BW = 20 to 20kHz, Rg = 0 Ω S : Vi = 1.5Vrms	89	95	-	dB
CS	Channel separation	BW = 20 to 20kHz S : Vi = 1.5Vrms	74	80	-	dB
ATT	Mute attenuation	Vi = 1.5Vrms Pin ⑤ \rightarrow H(Vcc), Pin ⑥ \rightarrow L(GND)	70	90	-	dB
Voff	Output offset voltage change	Mute SW : on \leftrightarrow off	-10	0	10	mV
Vmute	Mute ON voltage	Pin ⑤ voltage H or High impedance \rightarrow Mute ON	3.5	-	-	V
Vstb	Stand-by ON voltage	Pin ⑥ voltage, L or High impedance \rightarrow STB ON(Circuit ON)	-	-	1.5	V

REFERENCE CHARACTERISTICS

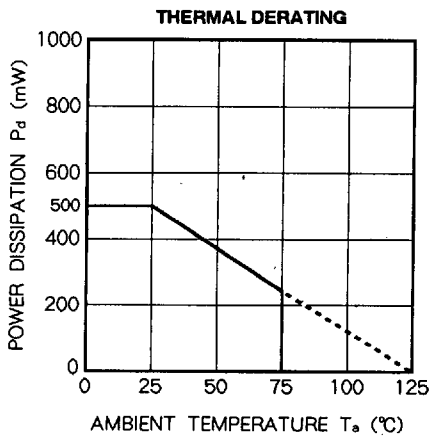
Symbol	Parameter	Test conditions	Reference data	Unit
SVRR	Ripple rejection	f = 100Hz, Vi = -10dBv BW : 20 to 20kHz	83.0	dB
I⑨	Pin ⑨ current	When pin ⑤ \rightarrow H(Mute ON), Pin ⑨ current	1.6	mA

TEST CIRCUIT



Units Resistance : Ω
Capacitance : F

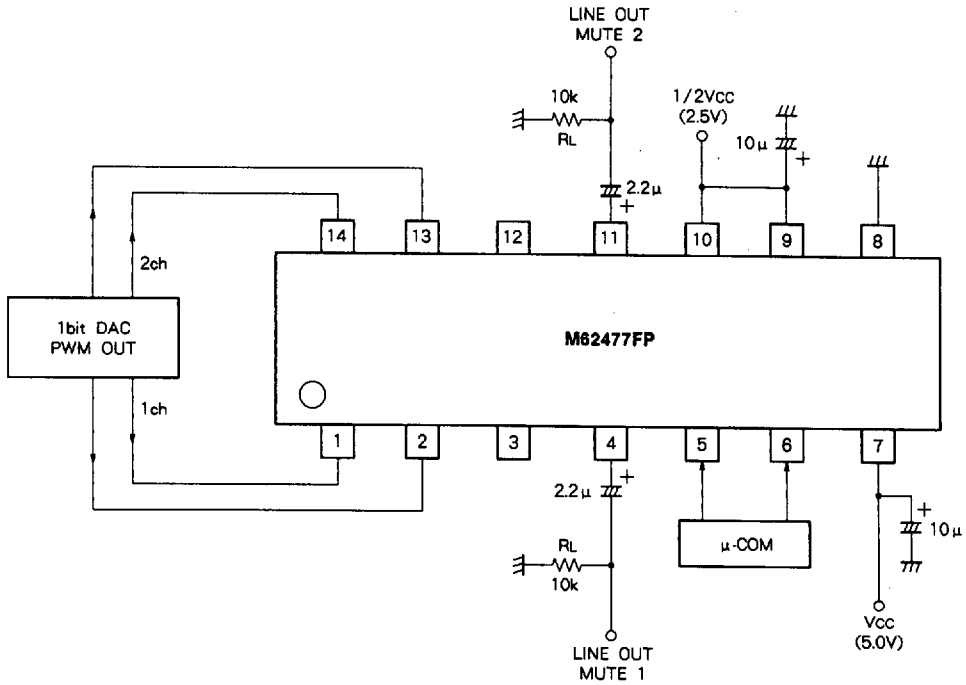
TYPICAL CHARACTERISTICS



M62477FP

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APPLICATION EXAMPLE



Units Resistance : Ω
Capacitance : F

[TIMING CHART]

