



No.2333B

LA4537M

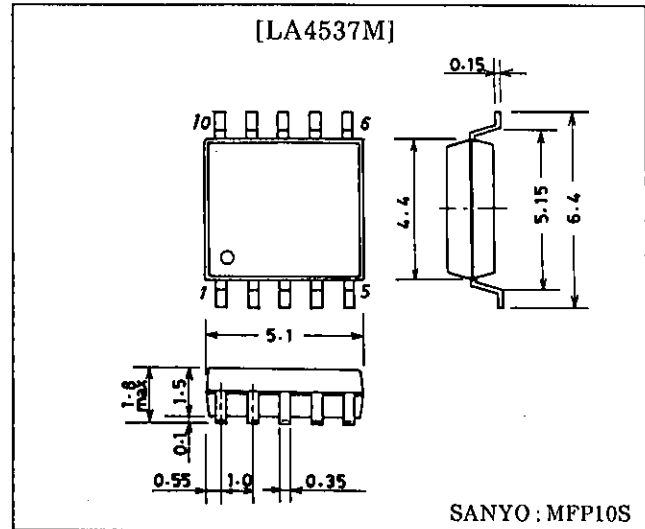
Power Amplifier for 1.5V Headphone Stereos

Features

- Low current consumption.
- 16Ω load drive capability.
- Excellent reduced voltage characteristics.
- Excellent power supply ripple rejection.
- Minimum number of external parts required (no input capacitor, feedback capacitor required).
- Less harmonic interference in radio band.
- On-chip power switch function, muting function.

Package Dimensions

(unit : mm)
3086A-MFP10S



Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Value	Unit
Maximum Supply Voltage	V _{CC} max	4.5	V
Allowable Power Dissipation	P _d max	300	mW
Operating Temperature	T _{opr}	-20 to +75	°C
Storage Temperature	T _{stg}	-40 to +125	°C

Operating Conditions at Ta = 25°C

Parameter	Symbol	Value	Unit
Recommended Supply Voltage	V _{CC}	1.5	V
Operating Voltage Range	V _{CC} op	0.9 to 4.0	V
Recommended Load Resistance	R _L	16 to 32	Ω

Operating Characteristics at Ta = 25°C, R_L = 16Ω, R_g = 600Ω, See specified Test Circuit.

Parameter	Symbol	Condition	min	typ	max	Unit
Quiescent Current	I _{cco} (1)	V _{CC} = 1.2V, quiescent		3.5	6.0	mA
	I _{cco} (2)	V _{CC} = 2.5V, pin 10 → GND		1.4	2.5	mA
	I _{cco} (3)	V _{CC} = 2.5V, pin 1 → GND			1.0	μA
Voltage Gain	V _G	V _{CC} = 1.2V, f = 1kHz, V _O = -20dBm	28.5	30.0	31.5	dB
Voltage Gain Difference	ΔV _G	V _{CC} = 1.2V, f = 1kHz, V _O = -20dBm			1.0	dB
Total Harmonic Distortion	THD	V _{CC} = 1.2V, f = 1kHz, P _O = 0.5mW		0.5	1.5	%
Output Power	P _O	V _{CC} = 1.5V, f = 1kHz, THD = 10%	5	8		mW
Crosstalk	CT	V _{CC} = 1.2V, f = 100Hz, R _g = 1kΩ	40	45		dB
		V _O = -20dB				
Ripple Rejection	SVRR	V _{CC} = 1.0V, f = 100Hz, R _g = 1kΩ	40	46		dB
		V _R = -30dBm, BPF = 100Hz				

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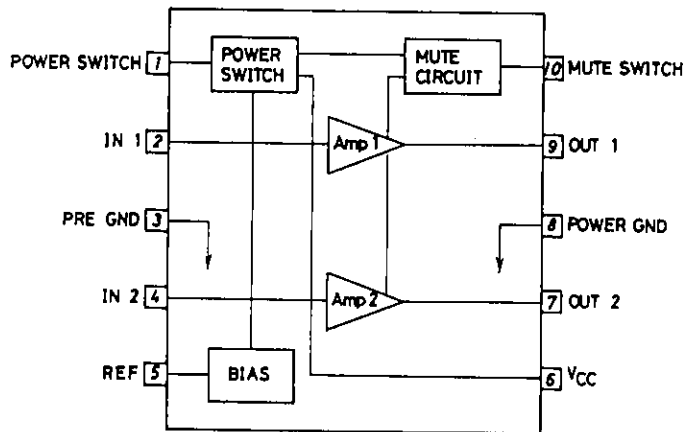
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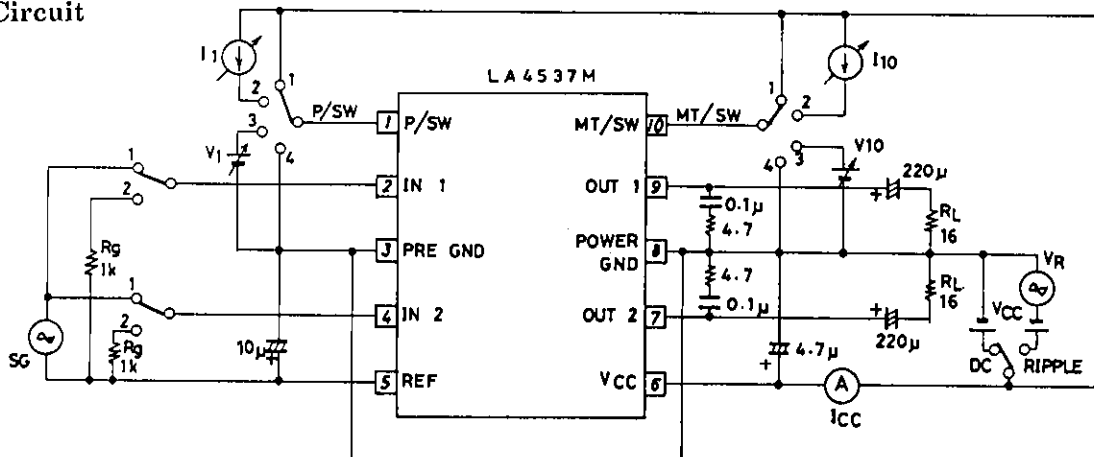
			min	typ	max	Unit
Output Noise Voltage	V_{NO}	$V_{CC}=2.5V, R_g=1k\Omega,$ $BPF=20Hz \text{ to } 20kHz$		55	80	μV
Power ON Current Sensitivity	I_1 (on)	$V_{CC}=0.85V, V_5 \geq 0.5V$		0.1	1.0	μA
Power OFF Voltage Sensitivity	V_1 (off)	$V_{CC}=0.85V, V_5 \leq 0.1V$	0.5	0.6		V
Muting OFF Current Sensitivity	I_{10} (off)	$V_{CC}=0.85V, V_5 \geq 0.5V$		0.1	1.0	μA
Muting ON Voltage Sensitivity	V_{10} (on)	$V_{CC}=0.85V, V_5 \leq 0.1V$	0.5	0.6		V

Note) The quiescent current is represented by the current flowing into pin 6. The respective maximum currents flowing into pin 1 and pin 10 are calculated by $(\text{pin voltage} - 0.5) / 16 [V/k\Omega]$ and the total current increases by these current values.

Equivalent Circuit Block Diagram

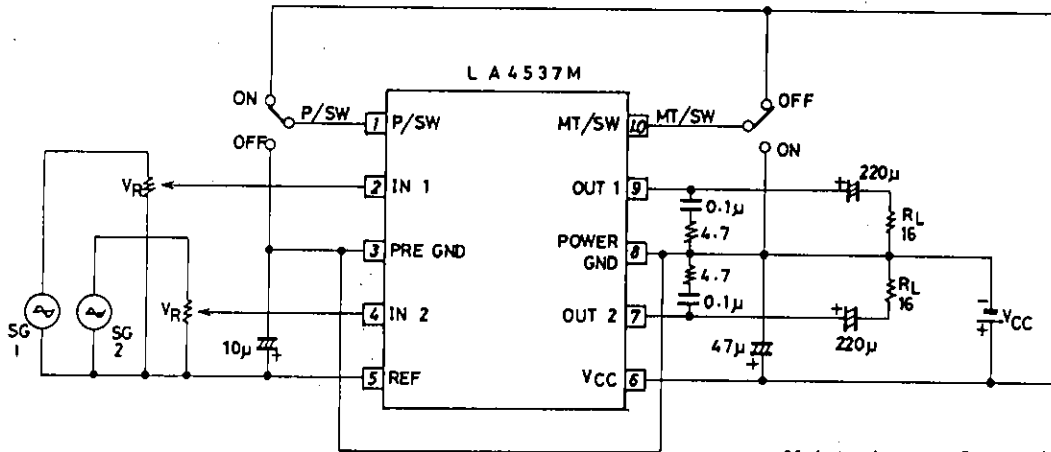


Test Circuit



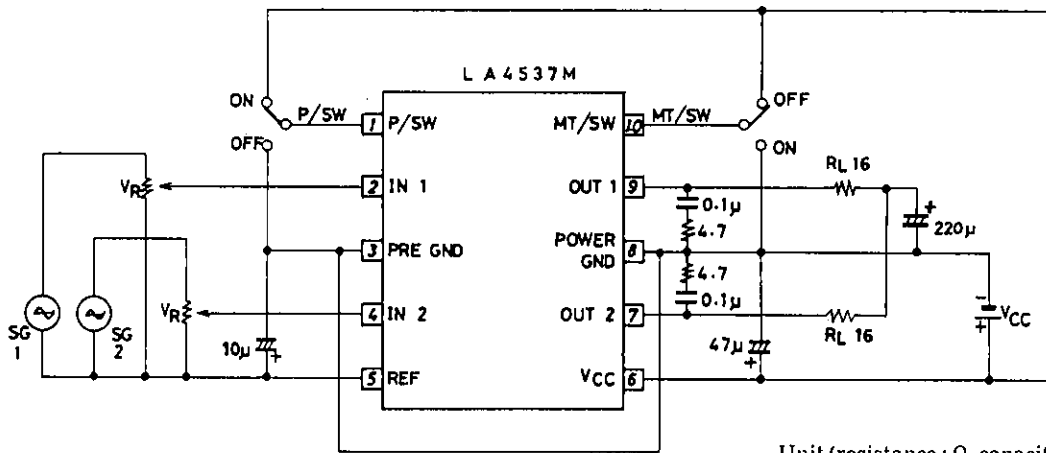
Unit (resistance : Ω , capacitance : F)

Sample Application Circuit 1
(Standard)



Unit (resistance : Ω, capacitance : F)

Sample Application Circuit 2
(Output capacitor shared)



Unit (resistance : Ω, capacitance : F)

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