Ordering number : EN2333C

SANYO Semiconductors
DATA SHEET

Monolithic Linear IC

LA4537M — Power Amplifier For 1.5V Headphone Stereos

Features

- Low current drain
- 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

Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max	Quiescent	4.5	V
Allowable power dissipation	Pd max		300	mW
Operating temperature	Topr		–20 to +75	°C
Storage temperature	Tstg		–40 to +125	°C

Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	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

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

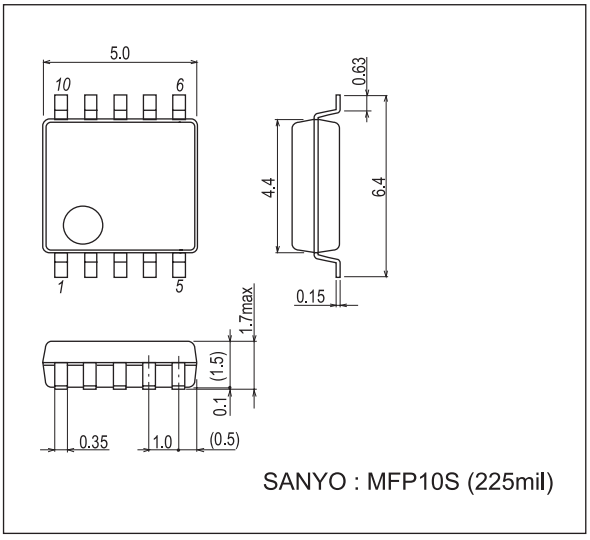
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	$I_{CCO}1$	V_{CC} = 1.2V, quiescent		3.5	6.0	mA
	$I_{CCO}2$	V_{CC} = 2.5V, pin 10 → GND		1.4	2.5	mA
	$I_{CCO}3$	V_{CC} = 2.5V, pin 1 → GND			1.0	μA
Voltage gain	VG	V_{CC} = 1.2V, f = 1kHz, V_O = –20dBm	28.5	30.0	31.5	dB
Voltage gain difference	ΔVG	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, Rg = 1kΩ, V_O = –20dB	40	45		dB
Ripple rejection	SVRR	V_{CC} = 1.0V, f = 100Hz, Rg = 1kΩ, V_R = –30dBm, BPF = 100Hz	40	46		dB
Output noise voltage	V_{NO}	V_{CC} = 2.5V, Rg = 1kΩ, BPF = 20Hz to 20kHz		55	80	μV
Power on current sensitivity	I_1 (on)	V_{CC} = 0.85V, V5 ≥ 0.5V		0.1	1.0	μA
Power off voltage sensitivity	V_1 (off)	V_{CC} = 0.85V, V5 ≤ 0.1V	0.5	0.6		V
Muting off current sensitivity	I_{10} (off)	V_{CC} = 0.85V, V5 ≥ 0.5V		0.1	1.0	μA
Muting on voltage sensitivity	V_{10} (on)	V_{CC} = 0.85V, V5 ≤ 0.1V	0.5	0.6		V

Note) The quiescent current is respresented by the current flowing into pin 6. The respective maximum currents flowing into pin 1 and pin 10 are calculated by (pin voltage -0.5) / 16 [V/kΩ] and the total current increases by these current values.

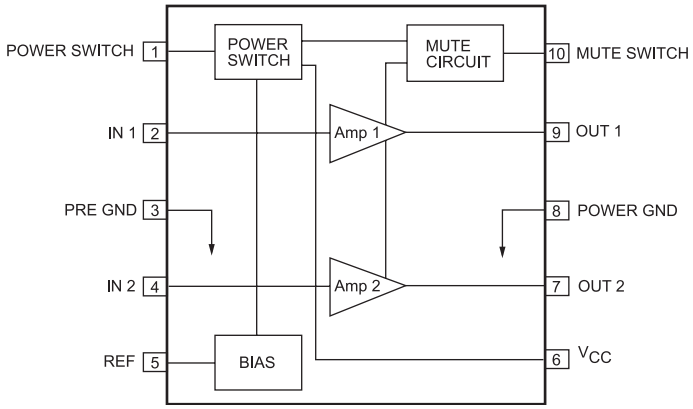
Package Dimensions

unit : mm (typ)

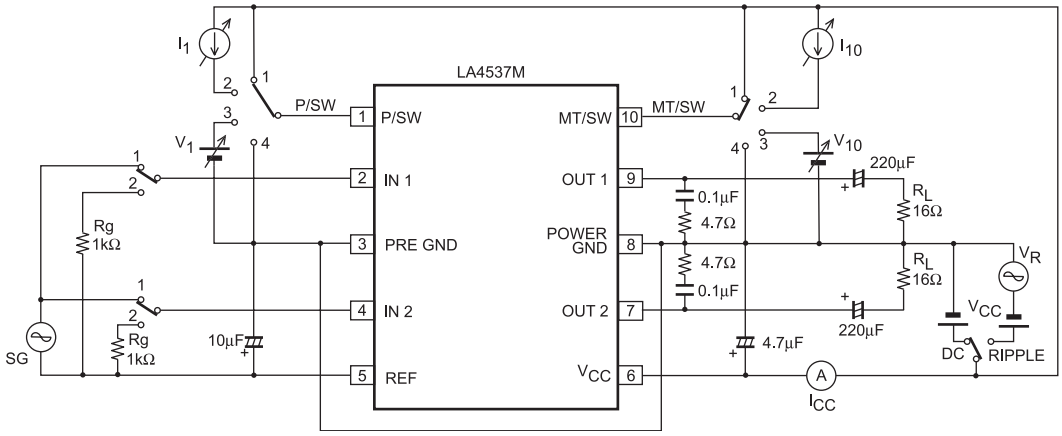
3086B



Block Diagram

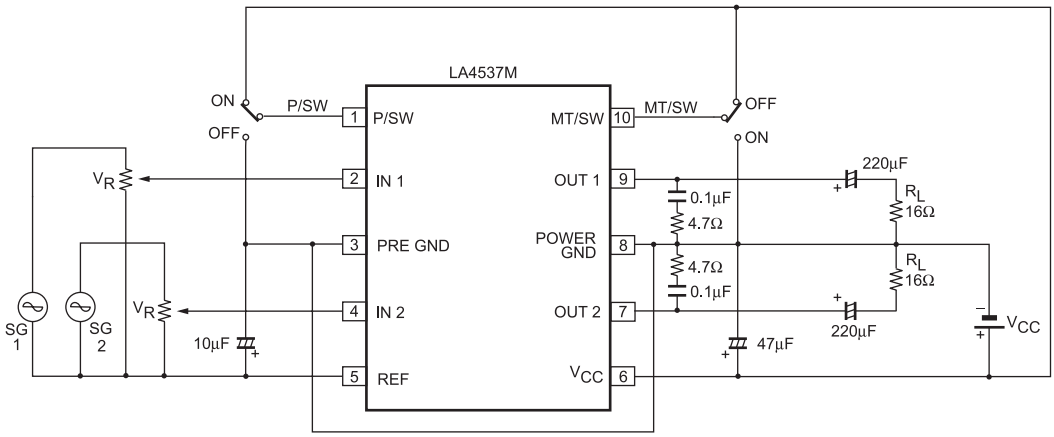


Test Circuit



Sample Application Circuit 1

(Standard)



Sample Application Circuit 2

(Output capacitor shared)