

SANYO Semiconductors DATA SHEET

LA4537MC

Monolithic Linear IC 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		290	mW
Operating temperature	Topr		-20 to +75	°C
Storage temperature	Tstg		-40 to +125	°C

Operating Conditions at $Ta = 25^{\circ}C$

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	RL		16 to 32	Ω

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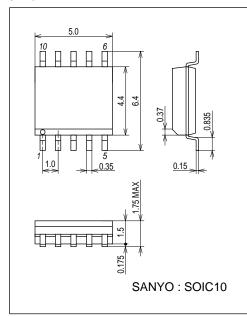
Electrical Characteristics at $Ta = 25^{\circ}C$, $R_L = 16\Omega$, $Rg = 600\Omega$, See specified Test Circuit.

Parameter	Symbol	Conditions	Ratings			
			min	typ	max	Unit
Quiescent current	ICCO1	V _{CC} = 1.2V, quiescent		3.5	6.0	mA
	ICCO ²	V_{CC} = 2.5V, pin 10 \rightarrow GND		1.4	2.5	mA
	ICCO3	$V_{CC} = 2.5V$, pin 1 \rightarrow 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	PO	V _{CC} = 1.5V, f = 1kHz, THD = 10%	5	8		mW
Crosstalk	СТ	V_{CC} = 1.2V, f = 100Hz, Rg = 1k Ω , 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 = 1k Ω , BPF = 20Hz to 20kHz		55	80	μV
Power on current sensitivity	I ₁ (on)	$V_{CC} = 0.85 V, \ V5 \geq 0.5 V$		0.1	1.0	μA
Power off voltage sensitivity	V ₁ (off)	$V_{CC} = 0.85V, \ V5 \leq 0.1V$	0.5	0.6		V
Muting off current sensitivity	I ₁₀ (off)	$V_{CC} = 0.85V, \ V5 \geq 0.5V$		0.1	1.0	μΑ
Muting on voltage sensitivity	V ₁₀ (on)	$V_{CC} = 0.85V, \ V5 \leq 0.1V$	0.5	0.6		V

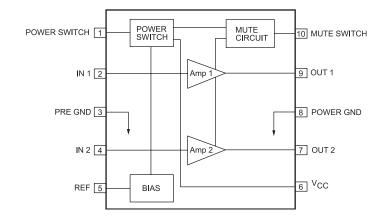
Note) The quiescent current is respresented by the current flowing into pin 6. The respective maximum currents flowing into pin 1 and pin 10 are calculated by (pin voltage -0.5) / 16 [V/kΩ] and the total current increases by these current values.

Package Dimensions

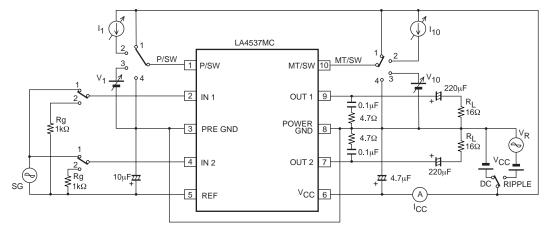
unit : mm (typ) 3426



Block Diagram

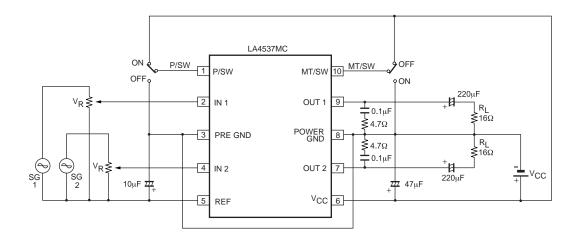


Test Circuit



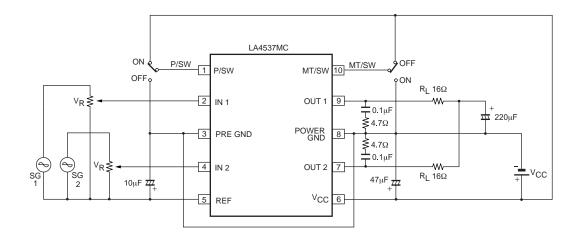
Sample Application Circuit 1

(Standard)



Sample Application Circuit 2

(Output capacitor shared)



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