

**LA4534M****3V CD Headphone-stereo Power Amplifier**

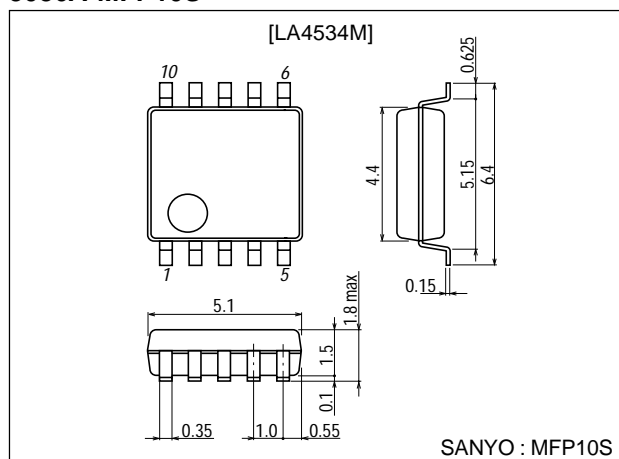
The LA4534M is a low noise, low distortion headphone-stereo power IC designed for use in a portable CD.

Features

- Less current drain.
- Accept 16Ω load drive.
- Excellent voltage reduction characteristic.
- Excellent ripple rejection.
- Power switch function and built-in muting circuit.
- Low noise ($7\mu\text{V}$), low gain (11dB).

Package Dimensions

unit:mm

3086A-MFP10S**Specifications****Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$**

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\text{ max}}$	Quiescent time	4.5	V
Allowable power dissipation	$P_{d\text{ max}}$		300	mW
Operating temperature	T_{opr}		-20 to +75	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +125	$^\circ\text{C}$

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

Parameter	Symbol	Conditions	Ratings	Unit
Recommended supply voltage	V_{CC}		3.0	V
Operating supply voltage range	$V_{CC\text{ op}}$		1.6 to 4.0	V
Recommended load impedance	R_L		16 to 32	Ω

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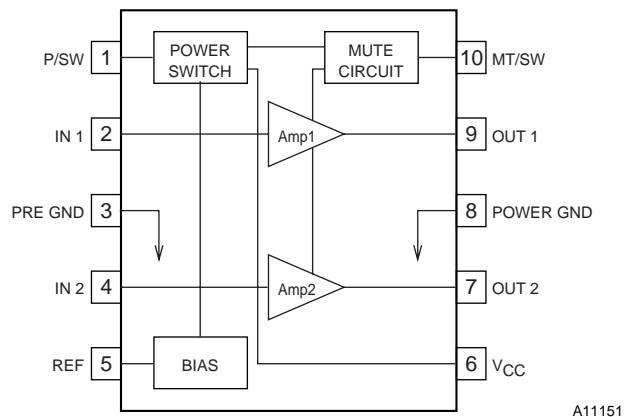
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Operating Characteristics at Ta = 25°C, RL=16Ω, Rg=600Ω

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Quiescent current	ICCO1	VCC=2.4V, Quiescent time		5.4	10	mA
	ICCO2	VCC=4.5V, pin 10 to GND		1.1	2.0	mA
	ICCO3	VCC=4.5V, pin 1 to GND			1.0	μA
Voltage gain	VG1	VCC=2.4V, f=1kHz, VO=-10dBm	9	11	13	dB
	VG2	VCC=1.6V, f=1kHz, VO=-20dBm	9	11	13	dB
Voltage gain variations	ΔVG1	VCC=2.4V, f=1kHz, VO=-10dBm			1.0	dB
	ΔVG2	VCC=1.6V, f=1kHz, VO=-20dBm			1.0	dB
Total harmonic distortion	THD	VCC=2.0V, f=1kHz, PO=1mW		0.08	0.24	%
Output power	PO	VCC=3.0V, f=1kHz, THD=10%	25	50		mW
Crosstalk	CT	VCC=2.4V, f=1kHz, Rg=1kΩ, VO=-10dBm	40	50		mW
Ripple rejection	SVRR	VCC=1.6V, f=100Hz, Rg=1kΩ, VR=-20dBm, BPF=100Hz	50	70		dB
Output noise voltage	VNO	VCC=4.5V, Rg=1kΩ, BPF=20Hz to 20kHz		7	20	μV
Power off effect	VO(off)	VCC=1.6V, f=100Hz, Pin 1 to GND, VIN=-10dBm			-80	dBm
Mute effect	VO(MT)	VCC=1.6V, f=100Hz, Pin 10 to GND, VIN=-10dBm			-80	dBm
Power on current sensitivity	I1(on)	VCC=1.5V, V5≥0.85V		0.05	1.0	μA
Power off voltage sensitivity	V1(off)	VCC=1.5V, V5≤0.1V	0.5	0.6		V
Mute off current sensitivity	I10(off)	VCC=1.5V, V5≥0.85V		0.2	1.0	μA
Mute on voltage sensitivity	V10(on)	VCC=1.5V, V5≤0.1V	0.5	0.65		V

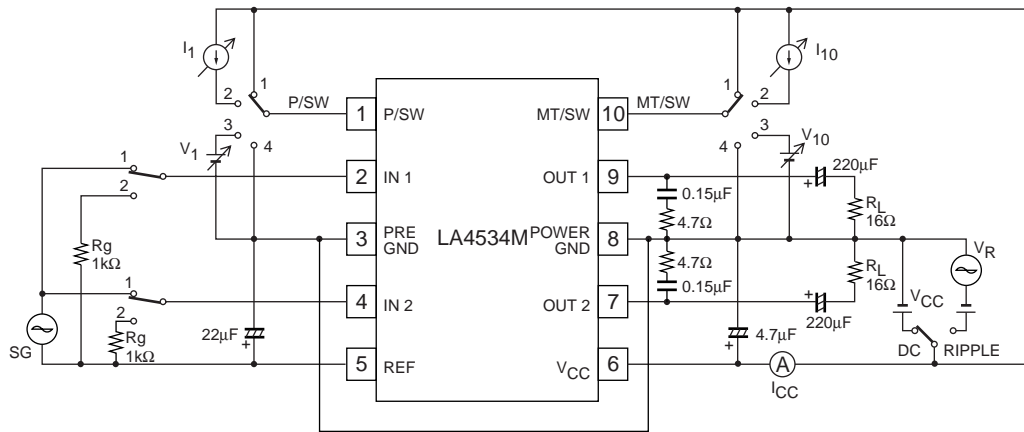
Note : Quiescent current is the current flowing into pin 6. The current flowing into pin 1 and pin 10 is at the maximum value and calculated from the equation $(V_{pin}-0.5V)/16[V/k\Omega]$, increasing total current.

Equivalent Circuit Block Diagram



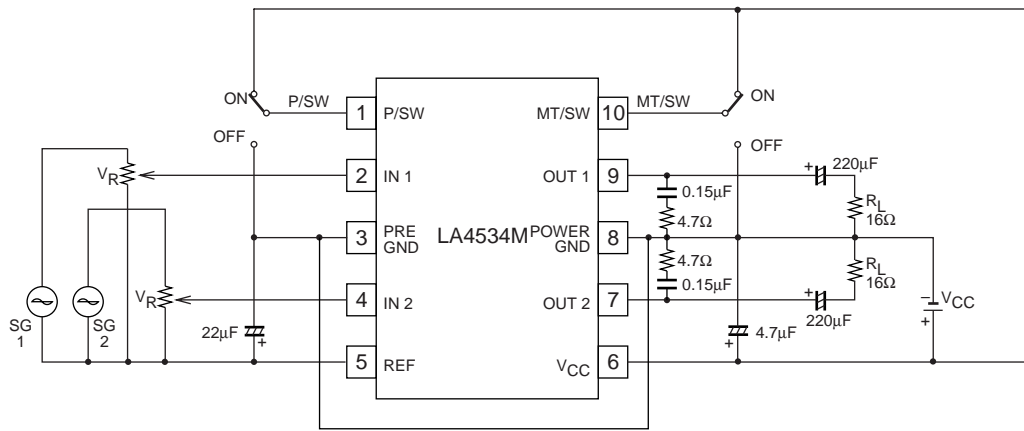
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Test Circuit



A11152

Sample Application Circuit



A11153