

**SANYO**

No.2247A

LA4535M

## POWER AMP FOR 1.5V HEADPHONE STEREO

**Features**

- Low current dissipation
- 16ohm 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

**Maximum Ratings at Ta=25°C**

			unit
Maximum Supply Voltage	$V_{CCmax}$	Quiescent	4.5 V
Allowable Power Dissipation	$P_{dmax}$		300 mW
Operating Temperature	$T_{opr}$		-20 to +75 °C
Storage Temperature	$T_{stg}$		-40 to +125 °C

**Operating Conditions at Ta=25°C**

			unit
Recommended Supply Voltage	$V_{CC}$		1.5 V
Operating Voltage Range	$V_{CCop}$		0.9 to 4.0 V
Recommended Load Resistance	$R_L$		16 to 32 ohm

**Operating Characteristics at Ta=25°C,  $R_L=16ohms$ ,  $R_g=600ohms$ , See Test Circuit.**

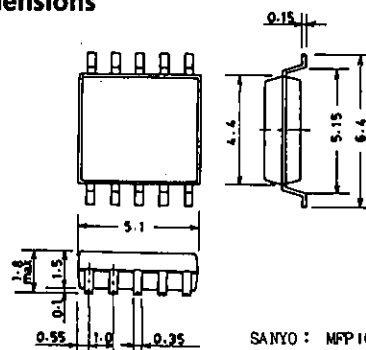
		min	typ	max	unit
Quiescent Current *1	$I_{cco(1)}$ $V_{CC}=1.2V$ , quiescent		3.5	6.0	mA
	$I_{cco(2)}$ $V_{CC}=2.5V$ , pin10→GND		1.5	2.5	mA
	$I_{cco(3)}$ $V_{CC}=2.5V$ , pin1→GND			1.0	uA
Voltage Gain	$VG(1)$ $V_{CC}=1.2V$ , $f=1kHz$ , $V_o=-20dBm$	20.5	22	23	dB
	$VG(2)$ $V_{CC}=0.9V$ , $f=1kHz$ , $V_o=-20dBm$	19.5	22	23	dB
Voltage Gain Difference	$\Delta VG(1)$ $V_{CC}=1.2V$ , $f=1kHz$ , $V_o=-20dBm$			1.0	dB
	$\Delta VG(2)$ $V_{CC}=0.9V$ , $f=1kHz$ , $V_o=-20dBm$			1.0	dB
Total Harmonic Distortion	THD $V_{CC}=1.2V$ , $f=1kHz$ , $P_o=0.5mW$		0.8	1.5	%
Output Power	$P_o$ $V_{CC}=1.5V$ , $f=1kHz$ , THD=10%	5	8		mW
Crosstalk	CT $V_{CC}=1.2V$ , $f=100Hz$ , $R_g=1kohm$ , $V_o=-20dBm$	40	45		dB
Ripple Rejection	SVRR $V_{CC}=1.0V$ , $f=100Hz$ , $R_g=1kohm$ , $V_R=-30dBm$ , BPF=100Hz	45	50		dB

**Package Dimensions**

(unit: mm)

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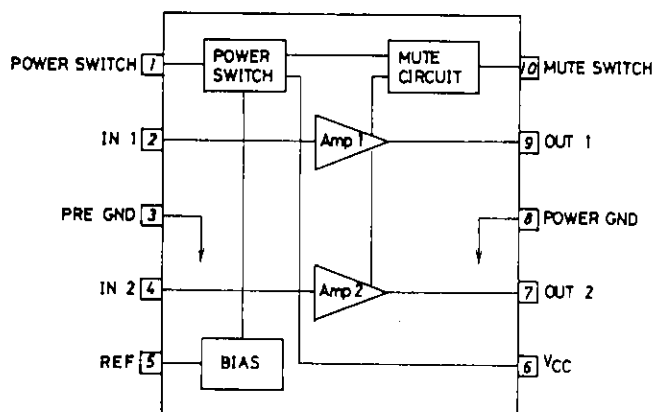
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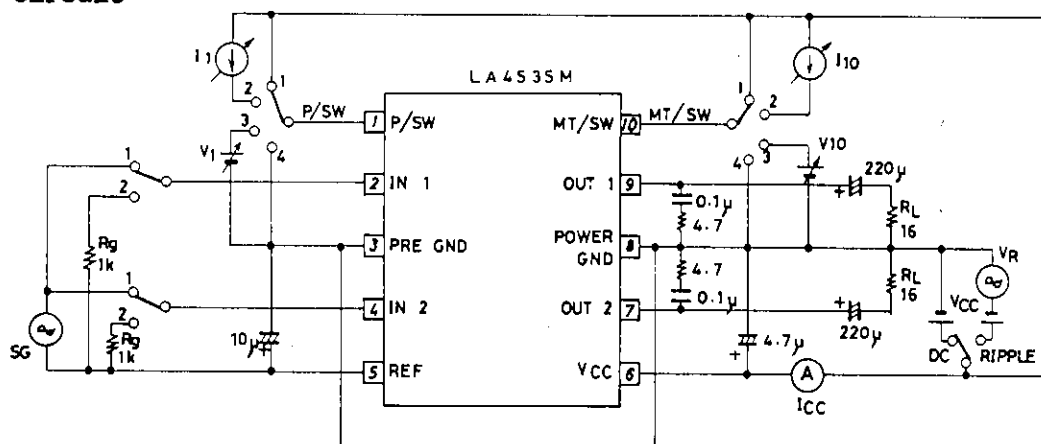
			min	typ	max	unit
Output Noise Voltage	$V_{NO}$	$V_{CC}=2.5V, R_g=1k\Omega, BPF=20Hz \text{ to } 20kHz$		30	44	$\mu V$
Power OFF Effect	$V_{o(off)}$	$V_{CC}=0.9V, f=100Hz, Pin1 \rightarrow GND, V_i=-10dBm$			-80	dBm
Muting Effect	$V_{o(MT)}$	$V_{CC}=0.9V, f=100Hz, Pin10 \rightarrow GND, V_i=-10dBm$			-80	dBm
Power ON Current Sensitivity	$I_{1(on)}$	$V_{CC}=0.85V, V_5=0.5V$		0.1	1.0	$\mu A$
Power OFF Voltage Sensitivity	$V_{1(off)}$	$V_{CC}=0.85V, V_5=0.1V$	0.5	0.65		V
Muting OFF Current Sensitivity	$I_{10(off)}$	$V_{CC}=0.85V, V_5=0.5V$		0.3	1.0	$\mu A$
Muting ON Voltage Sensitivity	$V_{10(on)}$	$V_{CC}=0.85V, V_5=0.1V$	0.5	0.65		V

Note) \*1 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  $(V_{pin} - 0.5)/16$  (V/kohm) and the total current increases by these current values.

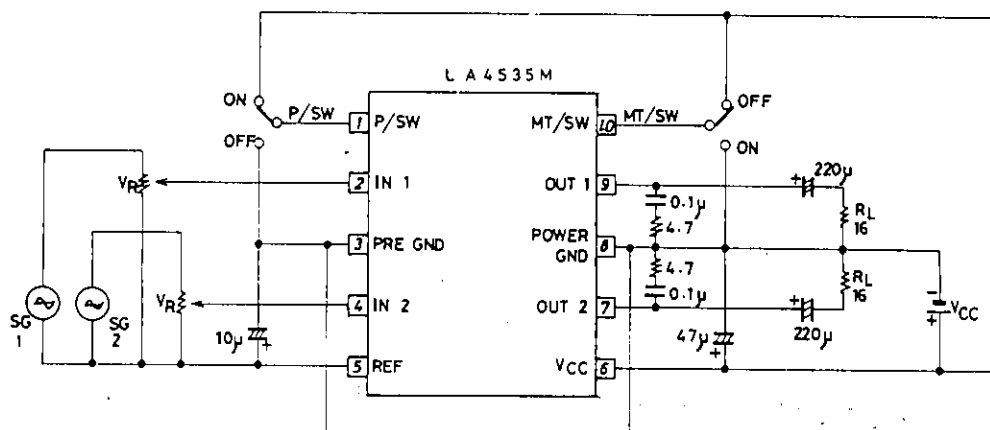
## Equivalent Circuit Block Diagram



## Test Circuit



## Sample Application Circuit

Unit (resistance:  $\Omega$ , capacitance: F)

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