

<b>SANYO</b>	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**

Maximum Supply Voltage	V <sub>CCmax</sub>	Quiescent	4.5	V
Allowable Power Dissipation	P <sub>dmax</sub>		300	mW
Operating Temperature	T <sub>opr</sub>		-20 to +75	°C
Storage Temperature	T <sub>stg</sub>		-40 to +125	°C

**Operating Conditions at Ta=25°C**

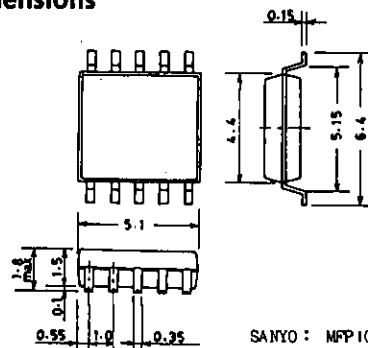
Recommended Supply Voltage	V <sub>CC</sub>		1.5	V
Operating Voltage Range	V <sub>CCOP</sub>		0.9 to 4.0	V
Recommended Load Resistance	R <sub>L</sub>		16 to 32	ohm

**Operating Characteristics at Ta=25°C, R<sub>L</sub>=16ohms, R<sub>g</sub>=600ohms, See Test Circuit.**

		min	typ	max	unit
Quiescent Current *1	I <sub>cco</sub> (1) V <sub>CC</sub> =1.2V, quiescent		3.5	6.0	mA
	I <sub>cco</sub> (2) V <sub>CC</sub> =2.5V, pin10→GND		1.5	2.5	mA
	I <sub>cco</sub> (3) V <sub>CC</sub> =2.5V, pin1→GND				1.0
Voltage Gain	VG(1) V <sub>CC</sub> =1.2V, f=1kHz, Vo=-20dBm	20.5	22	23	dB
	VG(2) V <sub>CC</sub> =0.9V, f=1kHz, Vo=-20dBm	19.5	22	23	dB
Voltage Gain Difference	ΔVG(1) V <sub>CC</sub> =1.2V, f=1kHz, Vo=-20dBm			1.0	dB
	ΔVG(2) V <sub>CC</sub> =0.9V, f=1kHz, Vo=-20dBm			1.0	dB
Total Harmonic Distortion	THD V <sub>CC</sub> =1.2V, f=1kHz, Po=0.5mW		0.8	1.5	%
Output Power	P <sub>o</sub> V <sub>CC</sub> =1.5V, f=1kHz, THD=10%		5	8	mW
Crosstalk	CT V <sub>CC</sub> =1.2V, f=100Hz, R <sub>g</sub> =1kohm, Vo=-20dBm	40	45		dB
	SVRR V <sub>CC</sub> =1.0V, f=100Hz, R <sub>g</sub> =1kohm, V <sub>R</sub> =-30dBm, BPF=100Hz	45	50		dB

**Package Dimensions**  
(unit: mm)  
3086

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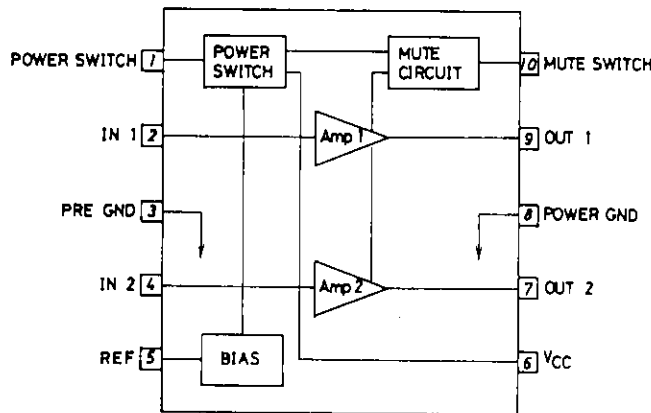
SANYO: MFP10

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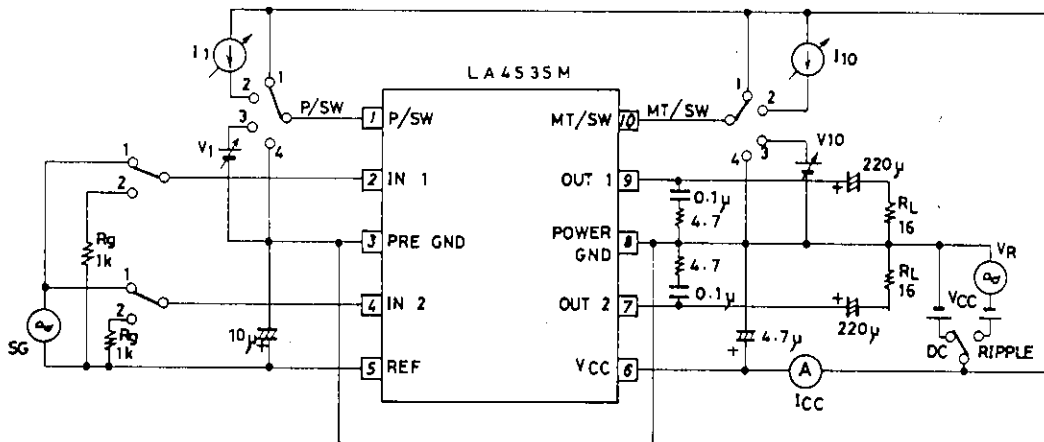
			min	typ	max	unit
Output Noise Voltage	$V_{NO}$	$V_{CC}=2.5V, R_g=1k\Omega,$ $BPF=20Hz\text{to}20kHz$		30	44	$\mu V$
Power OFF Effect	$V_{o(off)}$	$V_{CC}=0.9V, f=100Hz,$ $Pin1 \rightarrow GND, V_i=-10dBm$			-80	dBm
Muting Effect	$V_{o(MT)}$	$V_{CC}=0.9V, f=100Hz,$ $Pin10 \rightarrow GND, V_i=-10dBm$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

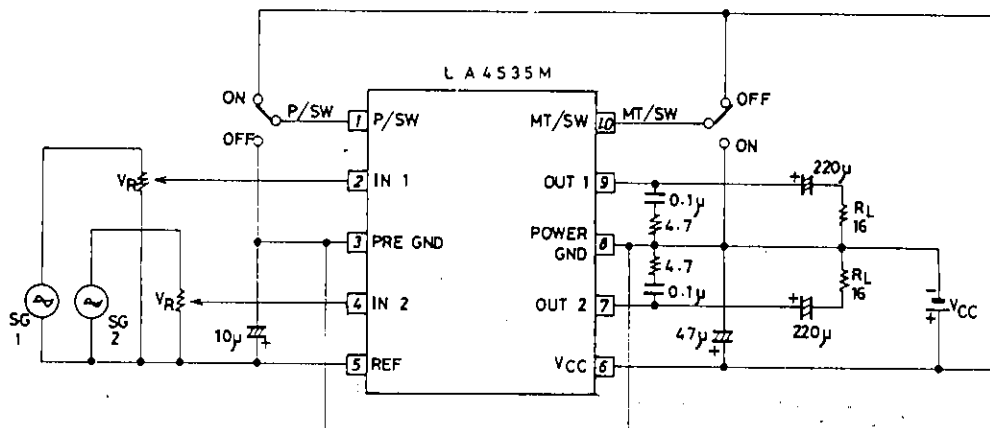


**Test Circuit**



**Sample Application Circuit**

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



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