

SANYO

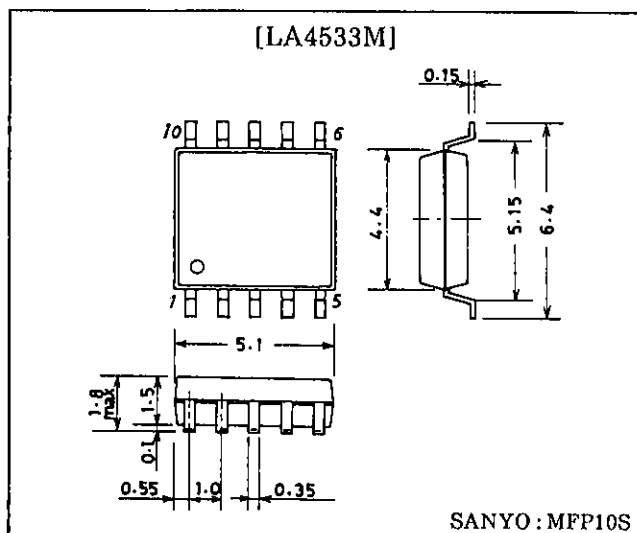
No.2248B

LA4533M**Power Amplifier for 3V Headphone
Stereos****Features**

- Low current consumption.
- 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).
- Applicable to radio sets because of high voltage gain.
- Less harmonic interference in radio band.
- On-chip power switch function, muting function.

Package Dimensions

(unit: mm)

3086A-MFP10S**Specifications****Maximum Ratings at Ta = 25°C**

			Unit
Maximum Supply Voltage	V _{CC} max	Quiescent	4.5 V
Allowable Power Dissipation	P _d max		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}		3.0 V
Operating Voltage Range	V _{CC} op		1.6 to 4.0 V
Recommended Load Resistance	R _L		16 to 32 Ω

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

			min	typ	max	Unit
Quiescent Current	I _{cco} (1)	V _{CC} = 2.4V, quiescent		5.4	10	mA
	I _{cco} (2)	V _{CC} = 4.5V, pin 10 → GND		1.1	2.0	mA
	I _{cco} (3)	V _{CC} = 4.5V, pin 1 → GND			1.0	μA
Voltage Gain	VG (1)	V _{CC} = 2.4V, f = 1kHz, V _O = -10dBm	30	32	34	dB
	VG (2)	V _{CC} = 1.6V, f = 1kHz, V _O = -20dBm	29	32	34	dB
Voltage Gain Difference	ΔVG (1)	V _{CC} = 2.4V, f = 1kHz, V _O = -10dBm			1.0	dB
	ΔVG (2)	V _{CC} = 1.6V, f = 1kHz, V _O = -20dBm			1.0	dB

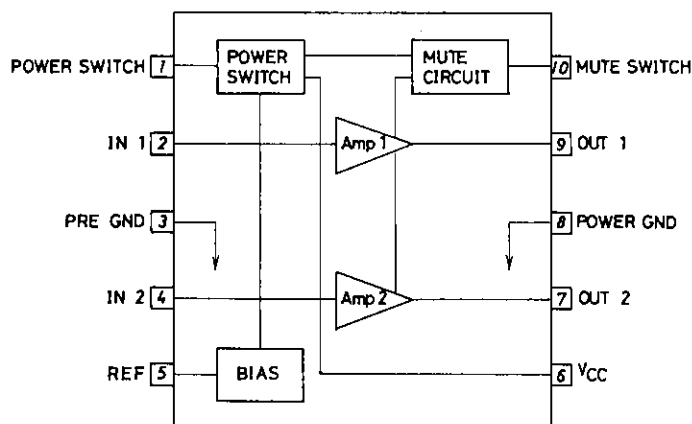
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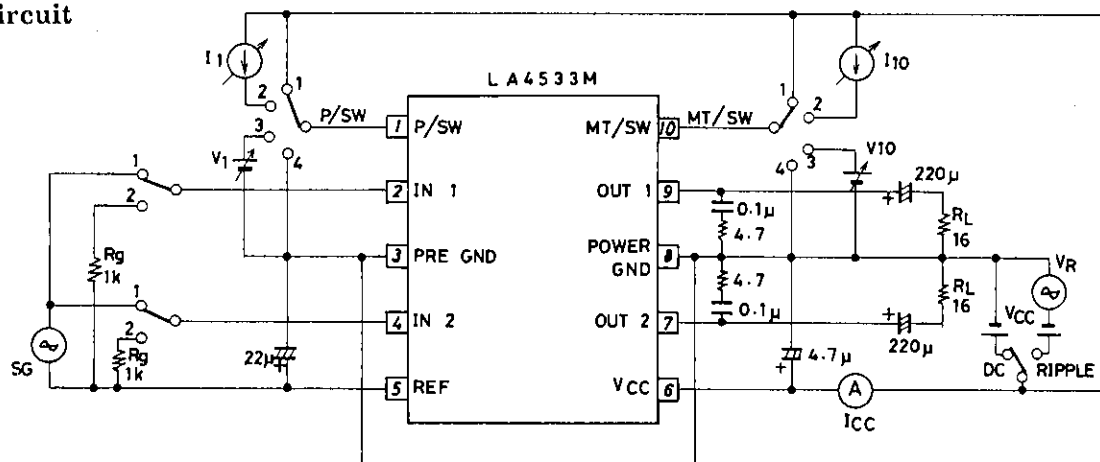
			min	typ	max	Unit
Total Harmonic Distortion	THD	$V_{CC}=2.0V, f=1kHz, P_O=1mW$		0.5	1.5	%
Output Power	P_O	$V_{CC}=3.0V, f=1kHz, THD=10\%$	20	40		mW
Crosstalk	CT	$V_{CC}=2.4V, f=100Hz, R_g=1k\Omega$ $V_O=-10dB$	40	50		dB
Ripple Rejection	SVRR	$V_{CC}=1.6V, f=100Hz, R_g=1k\Omega$ $V_R=-20dBm, BPF=100Hz$	45	60		dB
Output Noise Voltage	V_{NO}	$V_{CC}=4.5V, R_g=1k\Omega$, $BPF=20Hz$ to $20kHz$		62	100	μV
Power OFF Effect	V_O (off)	$V_{CC}=1.6V, f=100Hz, pin1 \rightarrow GND$, $V_{IN}=-10dB$			-80	dB
Muting Effect	V_O (MT)	$V_{CC}=1.6V, f=100Hz, pin10 \rightarrow GND$, $V_{IN}=-10dB$			-80	dB
Power ON	I_1 (on)	$V_{CC}=1.5V, V_5 \geq 0.85V$		0.05	1.0	μA
Current Sensitivity						
Power OFF	V_1 (off)	$V_{CC}=1.5V, V_5 \leq 0.1V$	0.5	0.6		V
Voltage Sensitivity						
Muting OFF	I_{10} (off)	$V_{CC}=1.5V, V_5 \geq 0.85V$		0.2	1.0	μA
Current Sensitivity						
Muting ON	V_{10} (on)	$V_{CC}=1.5V, V_5 \leq 0.1V$	0.5	0.65		V
Voltage Sensitivity						

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 (pinvoltage - 0.5) / 16 [V/k Ω] and the total current increases by these current values.

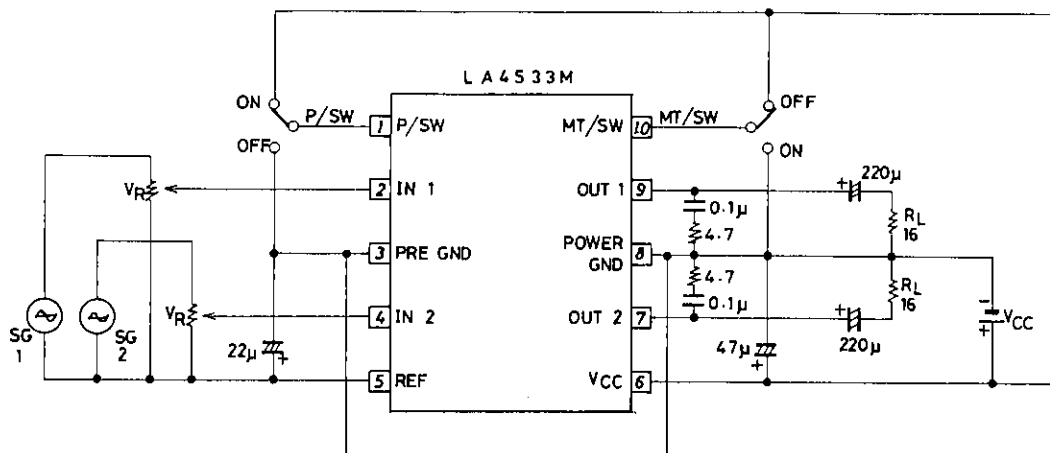
Equivalent Circuit Block Diagram and Application Circuit



Test Circuit

Unit (resistance : Ω , capacitance : F)

Sample Application Circuit

Unit (resistance : Ω , capacitance : F)

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