

SANYO

No.2333B

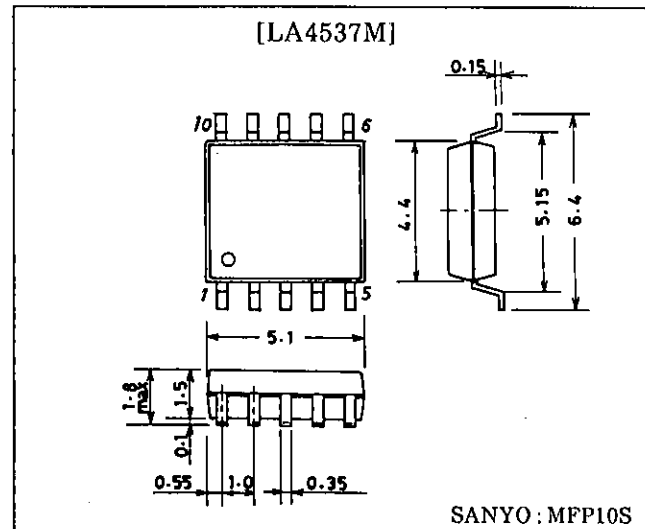
LA4537MPower Amplifier for 1.5V Headphone
Stereos**Features**

- 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).
- 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**

| 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

| Recommended Supply Voltage | V _{CC} | 1.5 | V |
|---|--------------------|------------|---|
| Operating Voltage Range <th>V_{CC} op</th> <td>0.9 to 4.0</td> <td>V</td> | V _{CC} op | 0.9 to 4.0 | V |
| Recommended Load Resistance <th>R_L</th> <td>16 to 32</td> <td>Ω</td> | 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} = 1.2V, quiescent | | 3.5 | 6.0 | mA |
| | I _{cco} (2) | V _{CC} = 2.5V, pin 10 → GND | | 1.4 | 2.5 | mA |
| | I _{cco} (3) | V _{CC} = 2.5V, pin 1 → GND | | | 1.0 | μA |
| Voltage Gain | V _G | V _{CC} = 1.2V, f = 1kHz, V _O = -20dBm | 28.5 | 30.0 | 31.5 | dB |
| Voltage Gain Difference | ΔV _G | 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 | P _O | V _{CC} = 1.5V, f = 1kHz, THD = 10% | 5 | 8 | | mW |
| Crosstalk | CT | V _{CC} = 1.2V, f = 100Hz, R _g = 1kΩ | 40 | 45 | | dB |
| | | V _O = -20dB | | | | |
| Ripple Rejection | SVRR | V _{CC} = 1.0V, f = 100Hz, R _g = 1kΩ | 40 | 46 | | dB |
| | | V _R = -30dBm, BPF = 100Hz | | | | |

Continued on next page.

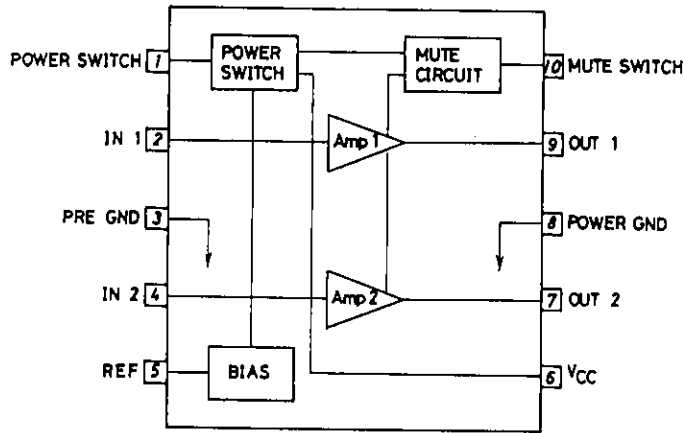
LA4537M

Continued from preceding page.

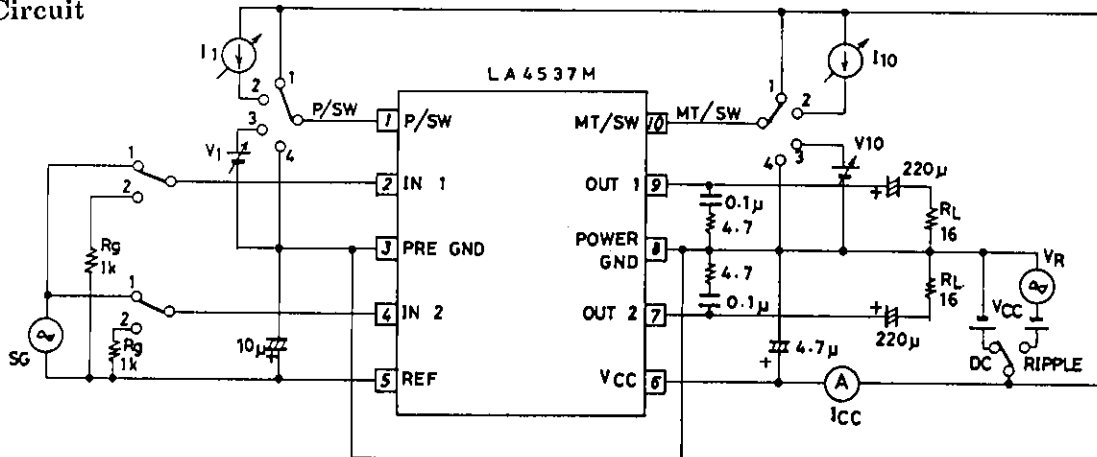
| | | | min | typ | max | Unit |
|-----------------------------------|----------------|--|-----|-----|-----|---------|
| Output Noise Voltage | V_{NO} | $V_{CC}=2.5V, R_g=1k\Omega,$ $BPF=20Hz \text{ to } 20kHz$ | | 55 | 80 | μV |
| Power ON Current Sensitivity | I_1 (on) | $V_{CC}=0.85V, V_5 \geq 0.5V$ | | 0.1 | 1.0 | μA |
| Power OFF Voltage Sensitivity | V_1 (off) | $V_{CC}=0.85V, V_5 \leq 0.1V$ | 0.5 | 0.6 | | V |
| Muting OFF Current Sensitivity | I_{10} (off) | $V_{CC}=0.85V, V_5 \geq 0.5V$ | | 0.1 | 1.0 | μA |
| Muting ON Voltage Sensitivity | V_{10} (on) | $V_{CC}=0.85V, V_5 \leq 0.1V$ | 0.5 | 0.6 | | V |

Note) 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 $(\text{pin voltage} - 0.5) / 16 [V/k\Omega]$ and the total current increases by these current values.

Equivalent Circuit Block Diagram

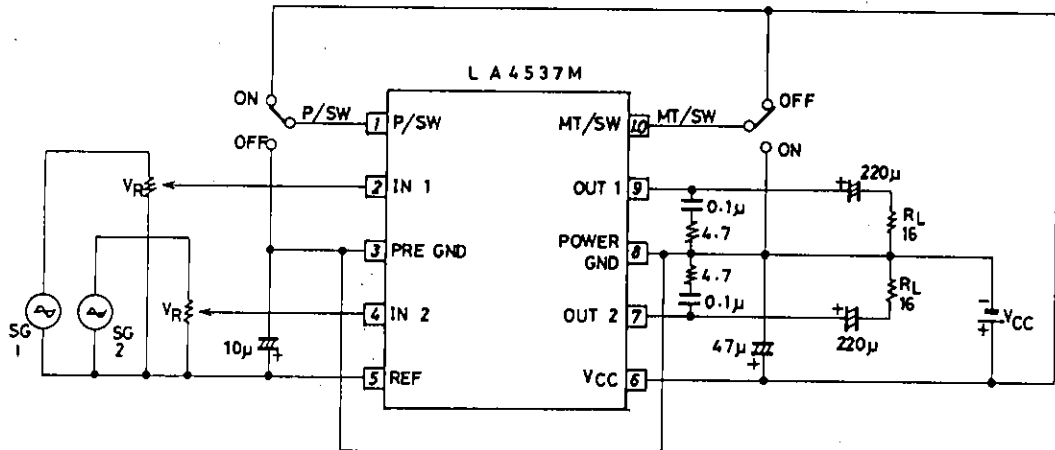


Test Circuit



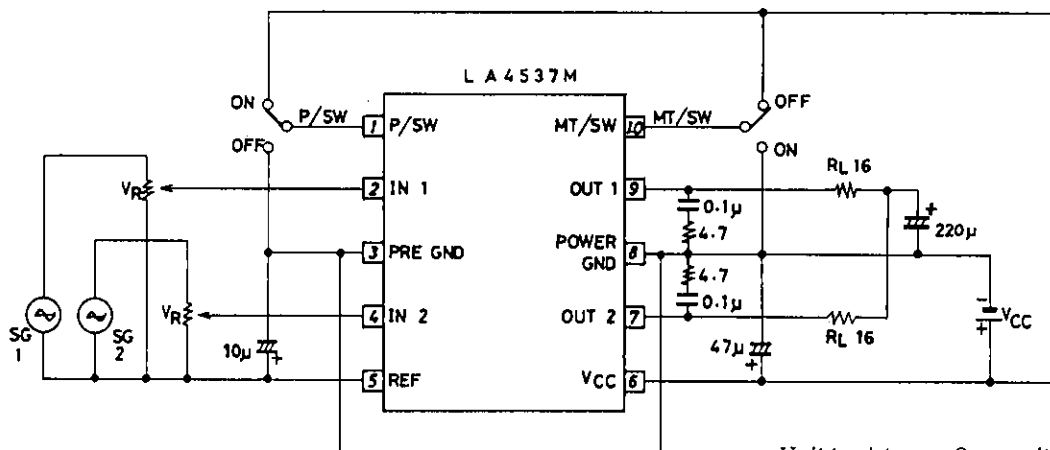
Unit (resistance : Ω , capacitance : F)

Sample Application Circuit 1 (Standard)



Unit (resistance : Ω , capacitance : F)

Sample Application Circuit 2 (Output capacitor shared)



Unit (resistance : Ω , capacitance : F)

- No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.
- Anyone purchasing any products described or contained herein for an above-mentioned use shall:
 - ① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
 - ② Not impose any responsibility for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.
- Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of June, 1995. Specifications and information herein are subject to change without notice.