

Accuphase

STEREO POWER AMPLIFIER

P-6100

- Output stage with 8-parallel push-pull power MOS-FETs delivers high power: 700 watts x 2 into 1 ohm with music signals
- Input stage featuring instrumentation amplifier topology
- Further refined MCS+ circuit
- Current feedback principle combines excellent sound quality with total operation stability
- Bridged connection mode allows upgrading to monophonic amplifier
- Power supply with highly efficient toroidal transformer and large filtering capacitors

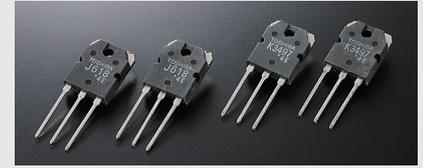




Stereo power amplifier with power MOS-FET devices – Instrumentation amplifier principle allows fully balanced signal paths. Further refined MCS+ and current feedback topology assure outstanding S/N ratio, minimum distortion, and excellent all-round performance, resulting in superb sound quality. 8-parallel push-pull arrangement of MOS-FET power transistors delivers 700 watts x 2 (with music signals) into ultra-low loads of one ohm. 4-step gain control minimizes residual noise.

The Class AB Monophonic Power Amplifier M-6000 using power MOS-FETs in its output stage has been highly acclaimed both in Japan and abroad for its excellent sound quality and performance. The P-6100 is a stereo version of this model, inheriting its outstanding design technology. It features instrumentation amplifier topology and a further refined MCS+ circuit, as well as the current feedback principle to minimize noise. Only specially selected top-grade materials and parts are used throughout. The result is a high-end stereo amplifier that is bound to impress. In the output stage, high-power MOS-FET devices renowned for their great sound and utter reliability are used. MOS-FETs have excellent frequency response and high input impedance which reduces the load on the preceding driver stage. They also have perfect thermal stability. In each channel of the P-6100, 16 of these devices are arranged in an 8-parallel push-pull configuration. This brings out the musical potential inherent in the source with absolute clarity and stunning authority. The massive heat sinks on both sides of the chassis achieve efficient dissipation of thermal energy and ensure stable operation. This allows the amplifier to deliver an amazing 700 watts of power per channel into an ultra-low impedance load of 1 ohm (music signals). The linear power progression with a rating of 440 watts into 2 ohms, 220 watts into 4 ohms, and 110 watts into 8 ohms means that the amplifier can competently handle even speakers with very low impedance or with difficult impedance curves. Using the P-6100 in bridged mode creates a monophonic amplifier with even more impressive power capability, rated for 1400 watts into 2 ohms (music signals). This performance is sustained by a massive high-efficiency toroidal transformer housed in an aluminum enclosure with heat dissipation fins and complemented by two large 56,000 μF filtering capacitors. Even the most stringent power demands are easily met by this configuration.

- **Power MOS-FET devices in 8-parallel push-pull arrangement deliver 700 watts per channel into 1 ohm (music signals only), 440 watts into 2 ohms, 220 watts into 4 ohms, or 110 watts into 8 ohms.**
- **Bridged mode (using two P-6100 units for a stereo system) allows conversion into monophonic amplifier with 1,400 watts into 2 ohms (music signals only), 880 watts into 4 ohms, or 440 watts into 8 ohms.**
- **Robust power supply with high-efficiency toroidal transformer and two large 56,000 μF filtering capacitors.**
- **Input selector button (Line/Balanced) on front panel.**
- **4-step gain selector minimizes residual noise (MAX, -3 dB, -6 dB, -12 dB).**
- **Large analog peak-reading output power meters**
 - Meter operation and illumination on/off switch
 - Switchable peak hold time: 3 seconds or infinite
- **Printed circuit boards made from glass fluorocarbon resin with low dielectric constant and low loss.**
- **Fully balanced input stage topology reliably shuts out external noise.**
- **Redesigned NFB circuitry keeps output impedance extremely low, resulting in higher damping factor for further improved sound quality.**
- **Mode selector makes it easy to switch between dual mono, stereo, or bridged operation.**
- **Two sets of massive speaker terminals accept also Y lugs.**
- **Major signal path parts are gold-plated.**



Power MOS-FET devices



Input selector button



Gain control selector



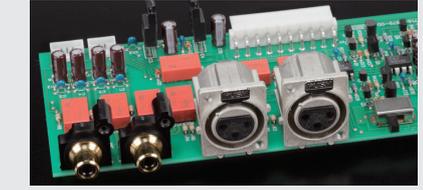
Meter selector



High-efficiency toroidal transformer



Filtering capacitors



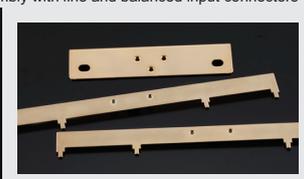
Assembly with line and balanced input connectors



Assembly with meter circuitry, protection circuitry etc.



Large speaker terminals



Gold-plated parts

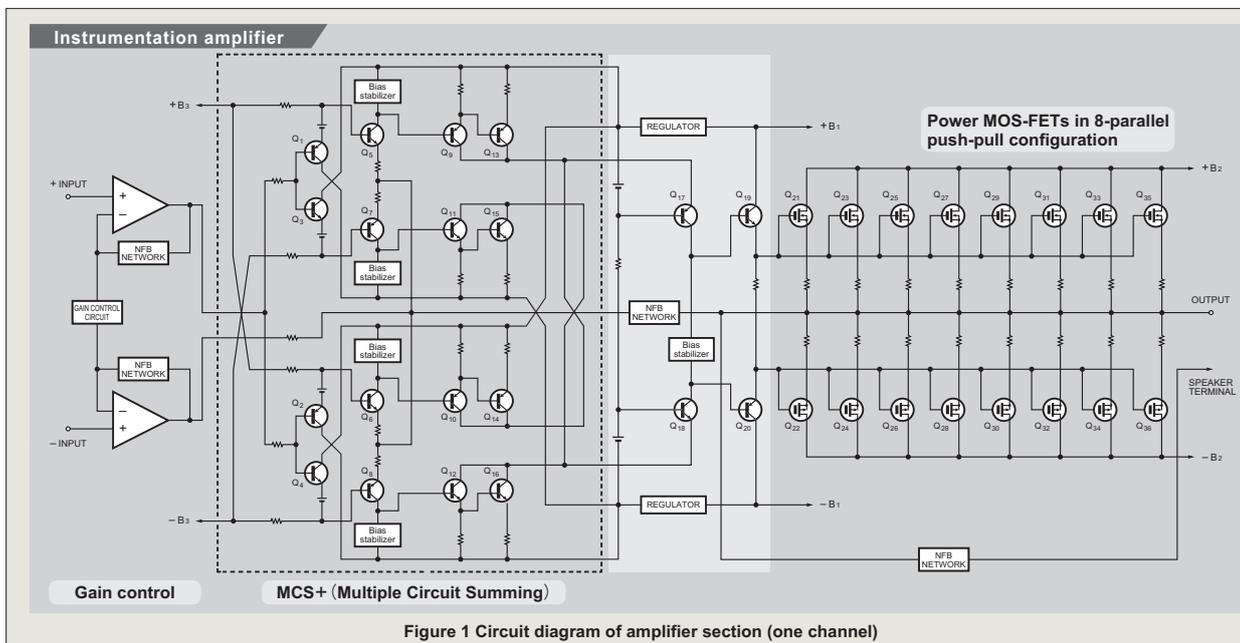


Figure 1 Circuit diagram of amplifier section (one channel)

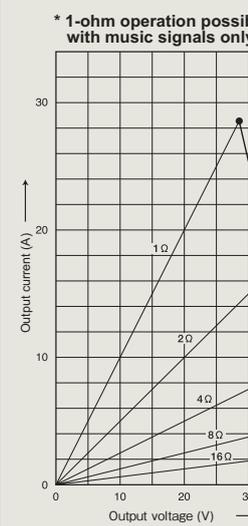
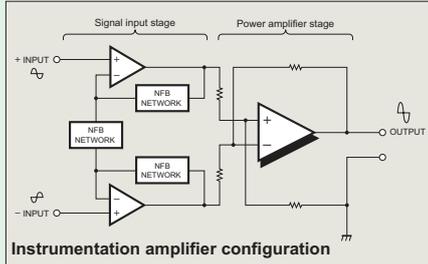


Figure 2 Load impedance (output voltage)

Instrumentation Amplifier Configuration and Further Refined MCS+ Topology

Instrumentation amp configuration allows fully balanced signal paths

The P-6100 features the highly advanced instrumentation amplifier principle whereby all signal paths from the inputs to the power amp stage are fully balanced. This results in excellent CMRR (common mode rejection ratio) and minimal distortion. Another significant



Instrumentation amplifier configuration

advantage is that external noise and other external influences are virtually shut out. The result is a drastic improvement in power amplifier operation stability and reliability.

Further refined MCS+ topology for even lower noise

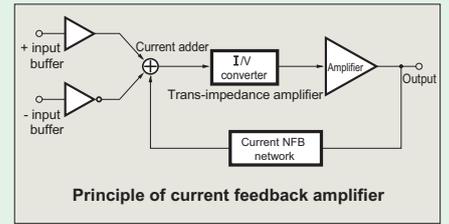
Accuphase's original MCS (Multiple Circuit Summing) principle uses a number of identical circuits connected in parallel to achieve superior performance characteristics. MCS+ is a further refined version of this approach. Improvements in the bias circuitry of the input-stage buffer amplifier result in greater stability. This in turn makes it possible to extend the parallel operation approach to the class-A drive stage of the current/voltage converter, thereby further lowering the noise floor.



Current feedback circuit topology assures excellent phase characteristics in high range

In the P-6100, the signal current rather than the more conventionally used voltage is used for feedback. Since the impedance at the current

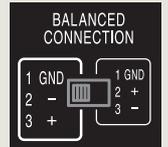
feedback point is very low, there is almost no phase shift. Phase compensation can therefore be kept at a minimum. A slight amount of NFB results in maximum improvement of circuit parameters.



Principle of current feedback amplifier

Phase selector for balanced input

- In the factory default condition, the switch is set to the left side (pin 3 +).
- If the balanced output of the connected preamplifier has a pin 2 + arrangement, the switch can be set to the right side.



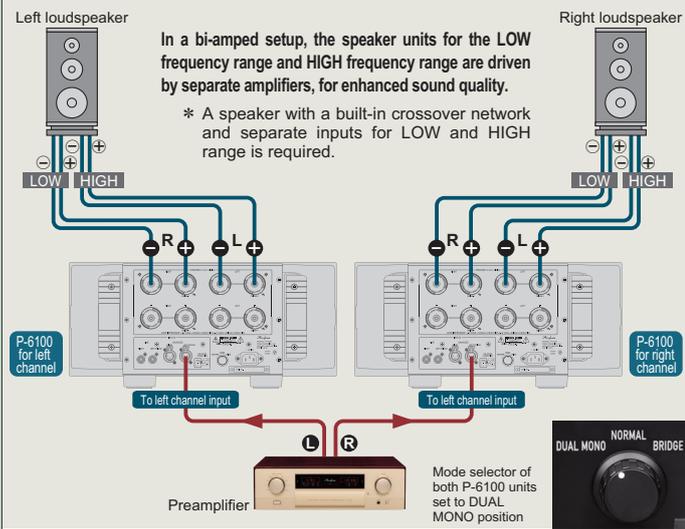
- Power amplifier assembly with 8 parallel push-pull power MOS-FET transistor pairs per channel mounted directly to large heat sinks, MCS+ circuitry, and current feedback amplifier



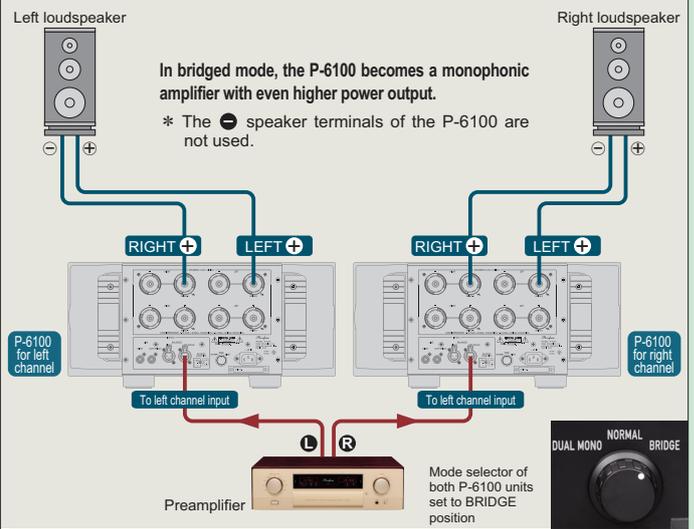
Efficiency vs. output power/output current

■ Using two P-6100 units, bi-amping or bridged connection can be realized, for even higher performance. ■ In this case, only the LEFT input (BALANCED or LINE) of each unit is used.

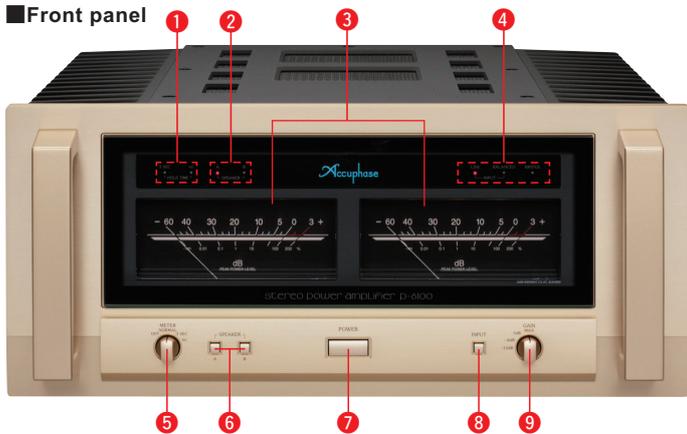
Connection example for bi-amping setup



Connection example for bridged setup



Front panel



Rear panel



- | | |
|--|--|
| 1 Hold time indicator | 9 Gain selector
MAX, -3 dB, -6 dB, -12 dB |
| 2 Speaker indicator | 10 Left/right speaker terminals
Two sets: A and B |
| 3 Left/right channel power meters
(dB and % scale) | 11 Line inputs |
| 4 Function indicator
LINE, BALANCED, BRIDGE | 12 Balanced inputs
Pin ② : -, Pin ③ : +
(Can be switched with phase selector button ⑬) |
| 5 Meter operation/illumination switch
OFF, NORMAL, 3 SEC., <infinite> | 13 Balanced input phase selector switch |
| 6 Speaker selector
A: ON/OFF, B: ON/OFF | 14 Mode selector
DUAL MONO, NORMAL, BRIDGE |
| 7 Power switch | 15 AC power supply connector* |
| 8 Input selector button LINE, BALANCED | |

Remarks

- ★ This product is available in versions for 120/230 V AC. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.
- ★ The shape of the AC inlet and plug of the supplied power cord depends on the voltage rating and destination country.

- Supplied accessory
 - AC power cord

Guaranteed Specifications

[based on the EIA RS-490 test standard]

● Rated Continuous Average Output Power (at 20 - 20,000 Hz)

Stereo use	700 W/ch	1-ohm load *
(both channels operating simultaneously)	440 W/ch	2-ohm load
	220 W/ch	4-ohm load
	110 W/ch	8-ohm load
Monophonic use	1,400 W	2-ohm load *
(Bridge connection)	880 W	4-ohm load
	440 W	8-ohm load

* These loads are for music signals only.

- Total Harmonic Distortion Stereo use (both channels operating simultaneously)
 - 0.05% 2-ohm load
 - 0.03% 4 to 16 ohm load
- Monophonic use (Bridge connection)
 - 0.03% 4 to 16 ohm load

- IM Distortion 0.01%
- Frequency Characteristics At rated continuous average output: 20 - 20,000 Hz +0, -0.2 dB
At 1-W output: 0.5 - 160,000 Hz +0, -3.0 dB
- Gain 28 dB (when GAIN switch set to MAX)
(Same for both stereo and monophonic use)
- GAIN switch settings MAX, -3 dB, -6 dB, -12 dB
- Load Impedance Stereo use: 2 - 16 ohms [For music signals only: 1-ohm (for stereo)]
Monophonic use: 4 - 16 ohms [and 2-ohm (mono) loads are also supported.]
- Damping Factor 500 (Same for both stereo and monophonic use)
- Input Sensitivity (at 8-ohm load, with GAIN switch set to MAX)
 - Stereo use 1.18 V at rated continuous average output
0.11 V at 1-W output
 - Monophonic use 2.36 V at rated continuous average output
0.11 V at 1-W output
- Input Impedance Balanced: 40 k ohms
Line (Unbalanced): 20 k ohms
- S/N (A-weighted) 120 dB when GAIN switch set to MAX
125 dB when GAIN switch set to -12 dB
(At rated continuous average output)
- Output Meters Logarithmic compression type; illumination turn-off capability;
-60 dB to +3 dB (indication in both dB and %);
switchable peak hold time: 3 sec, ∞
- Power Requirements AC 120 V/230 V, 50/60 Hz
(Voltage as indicated on rear panel)
- Power Consumption 170 W (with no input)
670 W in accordance with IEC 60065
- Maximum Dimensions Width 465 mm (18-5/16")
Height 221 mm (8-11/16")
Depth 499 mm (19-5/8")
- Mass 42.7 kg (94.1 lbs) net
51.0 kg (112.4 lbs) in shipping carton