

MODELS 6270L**70 V, 200 WATT POWER AMPLIFIER CARD**

The Model 6270L Power Amplifier Card is a high performance Class D (switching mode) design which delivers 200 W into a 70 Volt line (25Ω). Class D operation combined with an integral switching mode power supply offers many advantages, and the unique IED design makes full use of these benefits. They include higher efficiency (greater than 80% at full output), increased system reliability, improved performance, and lower cost. Switching mode coupled with high voltage power MOSFET output devices make it possible to eliminate the heavy, costly, bulky transformers. The bridge configuration of the output stage of the Model 6270 provides a balanced output and at the same time reduces voltage stress on the output devices by 50% for increased reliability. Other advantages include stability under all load conditions (phase angles of 0 to 360 degrees).

Switching mode operation also simplifies the complete isolation of the output stage, virtually eliminating internal ground loop problems.

The output stage is never driven into clipping. Instead, voltage limiting (clipping) is accomplished in a low level stage. The effect is softer and less harsh than output clipping, sounding much like a good limiter. Clipping occurs only above 100 V peak. In addition, current limiting maintains the output current below the maximum capability of the amplifier (4.0 A peak).

A true differential (balanced) input stage is employed, allowing either input side (+ or -) to be grounded with no change in gain. Of course, balanced operation is preferred for its excellent common mode rejection performance.

The amplifier has a stepped attenuator which is controlled by a six pole DIP switch located on the front edge of the circuit card. Attenuation of the input signal may be adjusted over the range of 0 to 63 dB in one dB steps. Accuracy is ± 0.2 dB for the first 31 dB. Also located on the front edge of the card is the power ON/OFF switch.

Three LED indicators are provided. They are located on the upper front of the circuit card. The upper red LED indicates clipping. It lights when the signal exceeds 100 V peak or 4.0 A peak. The center yellow LED indicates signal presence, and turns on when there is sufficient input signal to produce an output of 1.5 V peak or greater. The bottom green LED indicates that the power switch is 'On' and that the amplifier is operational.

In addition to the main output, two other outputs are furnished. One is a monitor output for connecting a high impedance monitoring device. It is directly in parallel with the Main Output. The other output is a logic signal which provides fault indication. The logic output is +5 V when the amplifier card is on and operational. It is 0 V when the amplifier card is in a fault condition. The fault indicator output appears at the terminal marked LOGIC with reference to ground, and is accessible at the rear of the mainframe.

Overcurrent protection is provided by a 3 A slow blow fuse. The fuseholder is mounted near the lower front edge of the printed circuit board.

The State-of-the-art design of the IED Model 6270L Power Amplifier Card combines performance with economy. Its output-transformerless design provides initial savings in terms of transformer cost and rack space. In some applications the large savings in weight translates to reduced cost. Its high efficiency provides a continuing saving in operating cost. These savings are realized without compromising quality or performance. The Model 6270L is an excellent choice for any sound reinforcement requiring a 70 V line output.



SPECIFICATIONS

ELECTRICAL

1. Power Output, $R_L = 25 \Omega$	200 W(70.7 V)
2. Efficiency	
Power Out = 200 W	81%
Power Out = 100 W	78%
Power Out = 50 W.	69%
3. Power Input (AC)	17 W
Power Output @ 1 W	
4. Clipping Level	100 V
Peak Voltage	
5. Current limiting level	4.0 Amps
Peak Current	
6. Frequency Response	+0, -3 dB
20 Hz - 20 kHz	
7. Power Bandwidth.	20 Hz - 20 kHz
-3 dB	
8. Signal-to-Noise Ratio	>85 dB
Unweighted, 20 Hz - 20 kHz Noise Bandwidth	
9. Distortion (THD).	<0.4%
$P_o = 1 W - 200 W, f = 2 kHz$	
10. Input Sensitivity	0.9 V
$P_o = 200 W$	
11. Input Impedance.	86 k Ω
Balanced	
12. Common Mode Rejection Ratio (CMRR)	>40 dB
20 Hz - 20 kHz	
14. Output Impedance	1.5 Ω
15. Output Loading	$\geq 25 \Omega$
20 Hz - 20 kHz	
16. Output Stability	Stable under all conditions of loading, either Inductive, Capacitive, or Resistive
17. Damping Factor	>13
20 Hz - 20 kHz, $R_L = 8 \Omega$	

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OUTPUTS

- 1. Main 25 Ω
- 2. Monitor. 1 W, Max.
In parallel with Main Output, minimum load resistance = 100 kΩ
- 3. Fault Indicator Output Logic to ground
Amplifier Operational +5 VDC
Amplifier Faulted. 0 VDC

FRONT MOUNTED CONTROLS

Located at the front edge of the card

- 1. Input Stepped Attenuator 1 dB Steps, 0 - 63 dB
Accuracy
0 - 31 dB ±0.2 dB
31 - 63 dB ±0.8 dB
- 2. Power Switch Two Position Slide Switch

FRONT MOUNTED INDICATORS

Located at the front edge of the card

- 1. Clipping Level Red LED
Indicated Level 70.7 V RMS (100 V Peak)
- 2. Signal Present Yellow LED
Indicated Output >1.5 V peak
- 3. Power ON Indicator Green LED

OVERCURRENT PROTECTION

Fuseholder is located on the printed circuit board.

- 1. Fuse
6270L for 120 VAC operation 3AG 3 A Slow Blow

MECHANICAL SPECIFICATIONS

- 1. Size. 6.2" H X 2.1" W X 12.7" D
(15.5 cm H X 5.3 cm W X 32.3 cm D)
- 2. Weight 2.75 lb.
(1.25 kg)

ENVIRONMENTAL SPECIFICATIONS

- 1. Operating Temperature Range (+32 °F - +122 °F) 0 °C - +50 °C
Applicable for typical voice paging and background music applications.
- 2. Storage Temperature Range (-40 °F - +158 °F) -40 °C - +70 °C



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