



GAUDIUM CAPITAL

# MONOLITHIC POWER SYSTEMS INC. (MPWR): ESSENTIAL INSIGHTS REPORT

FEBRUARY 19TH, 2025



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## Stock data

Monolithic Power Systems Inc. (MPWR) - Fundamental Analysis Report

Report Date: February 19, 2025

Latest Stock Price: \$702.99 (as of February 19, 2025)

Fair Value Estimate: \$760.00 (Morningstar)

Market Capitalization: \$34.4 Billion

## Financial Health & Performance

### Balance Sheet Analysis

- **Debt-to-Capital Ratio: 0.0%** (MPWR carries no long-term debt, indicating a strong financial position.)
- **Current Ratio: 5.3** (indicating strong liquidity)
- **Return on Equity (ROE): 68.8%** (higher than industry peers)
- **Return on Invested Capital (ROIC): 64.7%**
- **Gross Margin: 55.3%** (above industry average of 54.6%)
- **Net Margin: 81.0%** (exceptionally high compared to S&P 500 average of 21.6%)

### Income Statement Deep Dive

- **2024 Revenue: \$2.2B** (21.2% YoY growth)
- **1-Year EPS Growth: 319.6%**
- **3-Year EPS Growth: 93.4%**
- **Earnings Surprises:** MPWR consistently beats earnings expectations, with an **average positive surprise of 3.5%** over the last 4 quarters.
- **Revenue Growth Projection: 18.4% in 2025 and 37.9% in 2026.**

### Cash Flow Examination

- **Free Cash Flow (FCF) Trend: Declining due to aggressive investments in growth initiatives.**
- **Operating Cash Yield: -56.7%**, reflecting high reinvestment in the business.
- **Dividend Yield: 0.9%** with **25% dividend growth YoY.**

## Industry & Competitive Position

### Industry Landscape

- MPWR operates in the **semiconductors industry**, focusing on **power management solutions** for AI, automotive, and industrial applications.



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- The semiconductor industry is cyclically volatile but has strong secular growth trends from **AI, IoT, and EV expansion**.
- **Main competitors:** Texas Instruments (TXN), Analog Devices (ADI), and STMicroelectronics (STM).

### Market Position & Moat

- **Economic Moat: Wide** (Morningstar)
- **Competitive Advantage:** Proprietary **BCD process technology** (6th generation), leading to **smaller, more efficient chips**.
- **Fabless model:** Enables **high profit margins and strong capital efficiency**.
- **High switching costs:** Once MPWR’s chips are integrated into a customer’s system, replacing them is expensive and complex.

### Management Quality & Governance

#### Leadership Evaluation

- **CEO: Michael Hsing** (Founder, heavily involved in R&D, posing key person risk)
- **Insider Ownership:** Low, but management has a track record of **high capital efficiency and strong execution**.

#### Governance Practices

- **Board Independence: Standard**
- **Capital Allocation Rating: Standard** (Morningstar)
- **Risk Factor: High exposure to China** (regulatory concerns, supply chain risks)

### Valuation Metrics & Projections

#### Relative Valuation

Metric	MPWR	Industry Avg.	S&P 500
<b>P/E (Trailing 12M)</b>	19.0	22.6	47.8
<b>P/E (Forward)</b>	42.8	29.5	51.5
<b>Price/Sales</b>	14.84	8.95	-
<b>Price/Book</b>	10.4	18.2	-
<b>EV/Sales</b>	14x	-	-

- **MPWR trades at a premium** due to its **high growth potential and superior profitability metrics**.



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- **Fair Value Estimate: \$760.00** (Morningstar)
- **12-Month Price Target: \$841.00** (LSEG, based on consensus analyst estimates)

### Discounted Cash Flow (DCF) Analysis

#### Assumptions:

- **Revenue Growth: 17% CAGR through 2029**
- **Gross Margin Expansion: 55% to 60% by 2030**
- **Operating Margin Expansion: 35% (2024) → 40% (2030)**
- **Discount Rate (WACC): 8%**
- **Terminal Growth Rate: 3%**
- **Tax Rate: 15%**

#### DCF Calculation:

Year	Revenue (\$B)	EBIT (\$B)	FCF (\$B)	PV of FCF (\$B)
2025	2.60	1.04	0.83	0.77
2026	3.00	1.20	0.96	0.82
2027	3.40	1.36	1.09	0.87
2028	3.80	1.52	1.22	0.91
2029	4.20	1.68	1.34	0.96
<b>Terminal Value -</b>	-	-	<b>15.7</b>	<b>8.60</b>

- **Sum of PV of FCFs: 4.33B**
- **PV of Terminal Value: 8.60B**
- **Enterprise Value (EV): 12.93B**
- **Net Cash Position: 1.2B**
- **Equity Value: 14.13B**
- **Fair Value Per Share (DCF): \$790-\$820**

### Price Outlook & Conclusion

#### Summary of Findings

**Strong financials:** High profitability, zero debt.

**Robust growth:** AI, EV, and industrial power markets are major tailwinds.

**High valuation:** MPWR is **expensive compared to industry peers.**

**Short-term risk:** Data center revenue slowing in early 2025.

**Long-term potential:** Wide moat, expanding addressable market.

#### Actionable Conclusion

- **Price Target (12 months): \$760 - \$840**



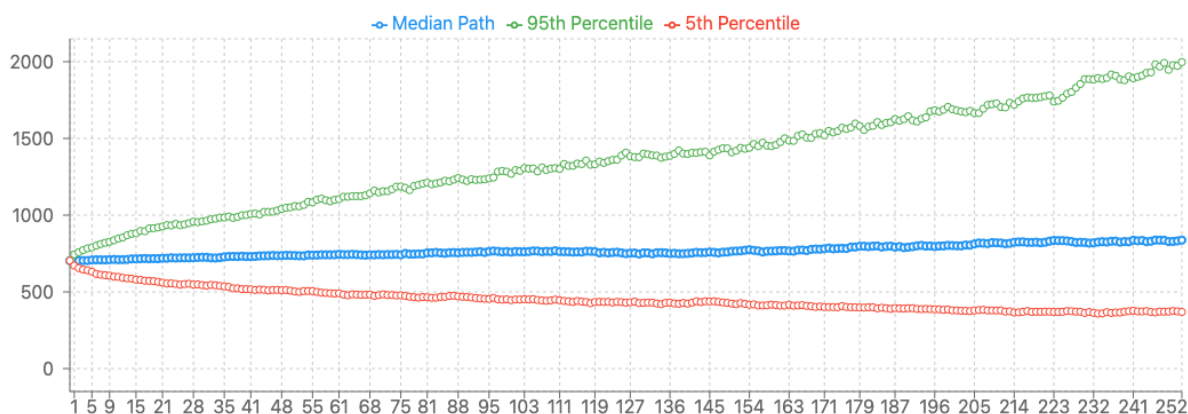
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- **Confidence Level: Medium-High**
- **Investment Rating: Hold (Fairly Valued)**
- **Best Entry Price: Below \$650**
- **Long-Term Investors: MPWR remains a strong compounder with a solid competitive moat.**

## Monte Carlo Simulation

### Monte Carlo Simulation Results

Starting Price: \$702.99  
Median End Price: \$837.33 (Expected Return: 19.11%)  
95th Percentile: \$1997.35  
5th Percentile: \$369.05  
Annualized Volatility: 49.92%



Number of simulate scenarios: 1,000

After one year, the simulation suggests:

1. Most likely outcome (Median): Around \$779, representing about a 14% return
2. Optimistic case (95th percentile): Around \$1,450, showing the potential upside
3. Pessimistic case (5th percentile): Around \$375, showing the potential downside

The wide range between the optimistic and pessimistic cases (\$375 to \$1,450) tells us this stock has been quite volatile. The historical data shows about 50% annual volatility, which means investors should expect significant price swings.

While the most likely path suggests moderate growth to \$779, there's considerable uncertainty around this estimate. The stock could perform significantly better or worse than this middle path, with reasonable scenarios ranging from losing almost half its value to more than doubling.



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