## PMP4024REVB BOM

<table>
<thead>
<tr>
<th>COUNT</th>
<th>RefDes</th>
<th>Value</th>
<th>Description</th>
<th>Size</th>
<th>Part Number</th>
<th>MFR</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>1.2V and 3.3V SWIFT</strong></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td>C1, C8, C10, C11</td>
<td>10uF</td>
<td>Capacitor, Ceramic, 25V, X5R, 20%</td>
<td>1206</td>
<td>C3216X5R1E106</td>
<td>TDK</td>
</tr>
<tr>
<td>1</td>
<td>C101</td>
<td>10pF</td>
<td>Capacitor, Ceramic, 10-pF, 50-V, C0G, 5%</td>
<td>0603</td>
<td>C1608CG1H100DB</td>
<td>TDK</td>
</tr>
<tr>
<td></td>
<td>C15</td>
<td>Open</td>
<td>Capacitor, Ceramic, 10V, X5R, 20%</td>
<td>1206</td>
<td>Std</td>
<td>Std</td>
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<tr>
<td>2</td>
<td>C2, C3</td>
<td>1.0uF</td>
<td>Capacitor, Ceramic, 25V, X7R, 10%</td>
<td>0603</td>
<td>C1608X7R1E105K</td>
<td>TDK</td>
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<td>3</td>
<td>C4, C6, C7</td>
<td>22 uF</td>
<td>Capacitor, Ceramic, 10V, X5R, 20%</td>
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<td>C3216X5R1A226</td>
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<tr>
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<td>Open</td>
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<td>Std</td>
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<tr>
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<td>C9</td>
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<td>C1608CG1H100DB</td>
<td>TDK</td>
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<td>4</td>
<td>J1, J2, J3, J4</td>
<td>PTC36SAAN</td>
<td>Header, Male 6-pin, 100mil spacing, (36-pin strip)</td>
<td>0.100 inch x 6</td>
<td>PTC36SAAN</td>
<td>Sullins</td>
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<td>J5, J8</td>
<td>PTC36SAAN</td>
<td>Header, 2-pin, 100mil spacing, (36-pin strip)</td>
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<td>PTC36SAAN</td>
<td>Sullins</td>
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<td><strong>1.8V LDO</strong></td>
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<td>0603</td>
<td>Std</td>
<td>TDK</td>
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<td>2.2uF</td>
<td>Capacitor, Ceramic, 16V, X7R</td>
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<td>0.01uF</td>
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<td>TDK</td>
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<td>ED1609-ND</td>
<td>Terminal Block, 2-pin, 15-A, 5.1mm</td>
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<td>10k</td>
<td>Resistor, Chip, 1/16W, 1%</td>
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<td>Std</td>
<td>Std</td>
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<td>TP28, TP30</td>
<td>5000</td>
<td>Test Point, Red, Thru Hole Color Keyed</td>
<td>0.100 x 0.100 inch</td>
<td>5000</td>
<td>Keystone</td>
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<tr>
<td>1</td>
<td>TP29</td>
<td>5001</td>
<td>Test Point, Black, Thru Hole Color Keyed</td>
<td>0.100 x 0.100 inch</td>
<td>5001</td>
<td>Keystone</td>
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<tr>
<td>1</td>
<td>U5</td>
<td>TPS73018DBVR</td>
<td>IC, UltraLow-Noise, High PSRR, Fast RF 200 mA, LDO Regul SOT23-6</td>
<td>TPS73018DBVR</td>
<td>TI</td>
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</tr>
</tbody>
</table>
The following test report includes measurements for the following output voltage rails using a 12V input:

A. **Start Up Waveform for all outputs**

B. **1.2V @ 1.48A Using the TPS62110 Device**

1. Output Voltage Ripple (Measured Full Load)
2. Load Transient (25% to 100% Load Step)
3. Load Regulation
4. Efficiency
5. Switch Node

C. **3.3V @ 0.18A Using the TPS62110 Device**

1. Output Voltage Ripple (Measured Full Load)
2. Load Transient (25% to 100% Load Step)
3. Load Regulation
4. Efficiency
5. Switch Node

D. **1.8V @ 0.14A Using the TPS73018 Device - LDO**

1. Output Voltage Ripple (Measured Full Load)
2. Load Transient (25% to 100% Load Step)
A Start Up Waveform All Outputs – TPS62110 & TPS73018

Sequence is 3.3V, 1.8V and 1.2V, with 12Vin

Channel 2: 3.3V DC/DC – green - TPS62110 – 2V/Div
Channel 1: 1.8V LDO – orange - TPS73018 -2V/Div
Channel 3: 1.2V DC/DC – red - TPS62110 -2V/Div
B. 1.2V @ 1.48A – TPS 62110 – DCDC

1 Output Ripple Voltage for 1.2V @ 1.48A (TPS62110)

The photo below shows the output voltage ripple. The input voltage is 12V.

Channel 1: 1.2V Output - Orange (20mV/Division; AC Coupled)
Channel 2: 1.2V Output – Green (1V/Division, DC Coupled)
Channel 4: Output Current – Blue (1A/Division, DC Coupled)
2 Load Transients – 1.2V @ 1.48A (TPS62110)  
25% to 100% Load Step

The photo below shows the transient response. The current is pulsed from 0.37A to 1.48A. The input voltage is 12V. The time-base is set to 200us/Division.

Channel 1: 1.2V Output - Orange (50mV/Division; AC Coupled)  
Channel 2: 1.2V Output – Green (1V/Division, DC Coupled)  
Channel 4: Output Current - Blue (1A/Division)
3 Load Regulation (TPS62110)

The load regulation is shown in the figure below. The input voltage is 12V.

1.2V@1.48A Output Voltage vs. Load Current
4 Efficiency (TPS62110)

The efficiency is shown in the figure below. The input voltage is 12V.

1.2V@1.48A Efficiency vs. Load Current
5 Switch Node Waveforms 1.2V @ 1.48A (TPS62110)

The plot below shows the switching waveforms for the converter. The input is 12V.

Channel 1: Switch Node - Orange (10V/Division)
C. 3.3V @ 0.18A – TPS 62110 – DCDC

1 Output Ripple Voltage for 3.3V @ 0.18A (TPS62110)

The photo below shows the output voltage ripple. The input voltage is 12V.

Channel 1: 3.3V Output - Orange (20mV/Division; AC Coupled)
Channel 3: 3.3V Output – Green (2V/Division, DC Coupled)
Channel 4: Output Current – Blue (100 mA/Division. DC Coupled)
2 Load Transients – 3.3V @ 0.18A (TPS62110)

The photo below shows the transient response. The current is pulsed from 0.04A to 0.18A. The input voltage is 12V. The time-base is set to 200us/Division.

Channel 1: 1.2V Output - Orange (20mV/Division; AC Coupled)
Channel 2: 3.3V Output – Green (2V/Division, DC Coupled)
Channel 4: Output Current - Blue (100mA/ Division)
3. Load Regulation (TPS62110)

The load regulation is shown in the figure below. The input voltage is 12V.

3.3V@0.18A Output Voltage vs. Load Current
4 Efficiency (TPS62110)

The efficiency is shown in the figure below. The input voltage is 12V.

3.3V@0.18A Efficiency vs. Load Current
5  Switch Node Waveforms 3.3V @ 0.18A (TPS62110)

The plot below shows the switching waveforms for the converter. The input is 12V.

Channel 1: Switch Node - Orange (10V/Division)
D. 1.8V @ 0.14A – TPS 73018 – LDO

1. Output Ripple Voltage for 1.8V @ 0.14A LDO (TPS73018)

The photo below shows the output voltage ripple. The input voltage is 12V.

Channel 1: 1.8V Output - Orange (20mV/Division; AC Coupled)
Channel 3: 1.8V Output – Red (2V/Division, DC Coupled)
Channel 4: Current Output – Blue (100mA/Division)

1.8V@0.14A External Load; 5us/Division
2. Load Transients – 1.8V @ 0.14A TPS 73018

25% to 100% Load Step

The photo below shows the transient response. The current is pulsed from 0.035A to 0.14A. The input voltage is 12V. The time-base is set to 200us/Division.

Channel 1: 1.8V Output - Orange (20mV/Division; AC Coupled)
Channel 2: 1.8V Output - Green (1V/Division; DC Coupled)
Channel 4: Output Current - Blue (100mA/Division)