mEZD72401A Series
4.5V - 36V Input, 1A, DC/DC Power Supply

FEATURES
- 4.5V to 36V Wide Operating Input
- 1A Load Current
- Hiccup Short-Circuit Protection
- Over-/Under-Voltage Protection
- Over-Current Protection
- Over-Temperature Protection
- Open Design Files and BOM

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Input Voltage (V)</th>
<th>Output Voltage (V)</th>
<th>Output Current (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEZD72401A-X</td>
<td>A: 4.5 - 36</td>
<td>1, 1.2, 1.5, 1.8, 2.5, 3.3, 5, 12</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>G: 6.5 - 36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Output Voltage Options
- A = 1.0V
- B = 1.2V
- C = 1.5V
- D = 1.8V
- E = 2.5V
- F = 3.3V
- G = 5.0V
- H = 12V

mEZ724xx FAMILY PRODUCTS

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Input Voltage (V)</th>
<th>Output Voltage (V)</th>
<th>Output Current (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEZD72401A-X</td>
<td>4.5-36</td>
<td>1, 1.2, 1.5, 1.8, 2.5, 3.3, 5, 12</td>
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</tr>
<tr>
<td>MEZD72402A-X</td>
<td>4.5-36</td>
<td>1, 1.2, 1.5, 1.8, 2.5, 3.3, 5</td>
<td>2</td>
</tr>
</tbody>
</table>

ELECTRICAL CHARACTERISTICS

- Input Voltage Range: $V_{IN, MIN}$ higher than $V_{OUT}$ by 1V
- 4.5 or 6.5 to 36V
- Output Voltage Set Accuracy: ±2.5% (Typ.)
- Output Voltage Ripple: $V_{IN}=24V$, $V_{OUT}=3.3V$, Full Load
- 20mV
- Line Regulation: $V_{IN}$ from MIN to MAX, $V_{OUT}=3.3V$
- ±1% (Typ.)
- Load Regulation: $I_{OUT}$ from MIN to MAX, $V_{OUT}=3.3V$
- ±1% (Typ.)
- Switching Frequency: Typical Switching Frequency
- 400kHz
- Short-Circuit Protection: Short Output to Ground
- Hiccup Mode
- Operating Temperature Range: -40 to 85°C
- Over-Temperature Protection: OTP
- 150°C
- Rise Time: $V_{OUT}$ from 0% to 90%
- 0.75ms (Typ.)
- Calculated MTBF: MIL-HDBK-217F
- 4185x10^3hrs

NOTE: All electrical characteristics are tested under 25°C ambient temperature, $V_{IN}=24V$ unless otherwise noted.
**mEZD72401A Series**

**4.5V - 36V Input, 1A, DC/DC Power Supply**

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**DO-IT-YOURSELF SCHEMATIC**

**POWER DERATING**

![Schematic Diagram]

\[ V_{IN}=24V, V_{OUT}=3.3V \text{ and } 5V \]

**BILL OF MATERIALS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Qty</th>
<th>RefDes</th>
<th>Value</th>
<th>Description</th>
<th>Package</th>
<th>Manufacturer</th>
<th>Manufacturer P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>C1</td>
<td>0.22µF</td>
<td>Ceramic Cap., 16V, X5R</td>
<td>0402</td>
<td>muRata</td>
<td>GRM155R61C224KA12D</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>C2</td>
<td>4.7µF</td>
<td>Ceramic Cap., 50V, X7R</td>
<td>1206</td>
<td>muRata</td>
<td>GRM31CR71H475KA12L</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>C3, C4</td>
<td>22µF</td>
<td>Ceramic Cap., 10V, X7T/X5R</td>
<td>0805</td>
<td>muRata</td>
<td>GRM21BD71A226ME44L/ GRM21BR61A226ME51L</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>C5</td>
<td>1µF</td>
<td>Ceramic Cap., 10V, X5R</td>
<td>0402</td>
<td>muRata</td>
<td>GRM155R61A105KE01D</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>L1*</td>
<td>10µH</td>
<td>Idc 2.3A, DCR 96m Ohm</td>
<td>5.5x5.2mm</td>
<td>Panasonic</td>
<td>ETQP3M100KVP</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>R1</td>
<td>499kΩ</td>
<td>Film Res., 5s%</td>
<td>0402</td>
<td>Yageo</td>
<td>RC0402JR-07499KL</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>P1</td>
<td>3-Pin</td>
<td>3-Pin Male Connector, Right Angle</td>
<td>Bulk</td>
<td>MYIC</td>
<td>MPS010SRRA-3</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>U1</td>
<td></td>
<td>Synchronous Step-Down Converter</td>
<td>QFN-16</td>
<td>MPS</td>
<td>DIY72401-AX**</td>
</tr>
</tbody>
</table>

* Or equivalent. ** -X Output voltage options (A: 1.0V, B: 1.2V, C: 1.5V, D: 1.8V, E: 2.5V, F: 3.3V, G: 5.0V, H: 12V)

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**PRODUCT PACKAGE AND DIMENSIONS**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Designation</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VIN</td>
<td>Input Voltage</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
<td>Power Ground</td>
</tr>
<tr>
<td>3</td>
<td>VOUT</td>
<td>Output Voltage</td>
</tr>
</tbody>
</table>

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**NOTE:**

Contact factory for different sizes of the boards (Quantity>2k).

For more information, Gerber files, and PCB layout, please contact mEZsupport@monolithicpower.com