mEZD71201A Series

4.5V - 24V Input, 1A, DC/DC Power Supply

FEATURES

- 4.5V to 24V Wide Operating Input
- 1A Load Current
- Hiccup Short-Circuit Protection
- Over-/Under-Voltage Protection

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>MEZD71201A-X</td>
<td>A: 4.5 - 24</td>
<td>1, 1.2, 1.5, 1.8, 2.5, 3.3, 5</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>G: 6.5 - 24</td>
<td>1, 2.5</td>
<td>1</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

mEZD712xx 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>mEZD71201A-X</td>
<td>4.5 – 24</td>
<td>1, 1.2, 1.5, 1.8, 2.5, 3.3, 5</td>
<td>1</td>
</tr>
<tr>
<td>mEZD71202A-X</td>
<td>4.5 – 24</td>
<td>1, 1.2, 1.5, 1.8, 2.5, 3.3, 5</td>
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<tr>
<td>mEZD71203A-X</td>
<td>4.5 - 16</td>
<td>1, 1.2, 1.5, 1.8, 2.5, 3.3</td>
<td>3</td>
</tr>
<tr>
<td>mEZD71210A-A</td>
<td>4.5 – 17</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

ELECTRICAL CHARACTERISTICS

- Efficiency vs. Load Current

Efficiency vs. Load Current

V_IN=12V, V_OUT = 1V - 5V

Input Voltage Range

V_IN_MIN higher than V_OUT by 1V

Output Voltage Set Accuracy

±2.5% (Typ.)

Output Voltage Ripple

V_IN= 12V, V_OUT= 3.3V, Full Load

Line Regulation

V_IN from MIN to MAX, V_OUT= 3.3V

Load Regulation

I_OUT from MIN to MAX, V_OUT= 3.3V

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

4185x10³hrs

NOTE: All electrical characteristics are tested under 25°C ambient temperature, V_IN=12V unless otherwise noted.
mEZD71201A Series
4.5V - 24V Input, 1A, DC/DC Power Supply

DO-IT-YOURSELF SCHEMATIC

Power Derating

Vin=12V, Vout=3.3V and 5V

Output Power (%) vs. Ambient Temperature (°C)

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>4.7µH</td>
<td>Ind 3.1A, DCR 45.6mΩ</td>
<td>5.5x5x3mm</td>
<td>Panasonic</td>
<td>ETQP3M4R7KVP</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>R1</td>
<td>499kΩ</td>
<td>Film Res., 1%</td>
<td>0402</td>
<td>Yageo</td>
<td>RC0402FR-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>Synchronous Step-Down Converter</td>
<td>FCQFN3x3-16</td>
<td>MPS</td>
<td>DIY71201-AX**</td>
<td></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)

PRODUCT PACKAGE AND DIMENSIONS

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

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