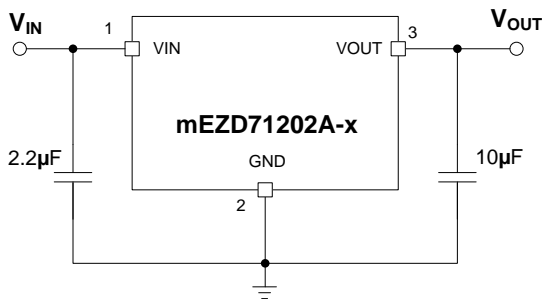


#### mEZ Product Options:

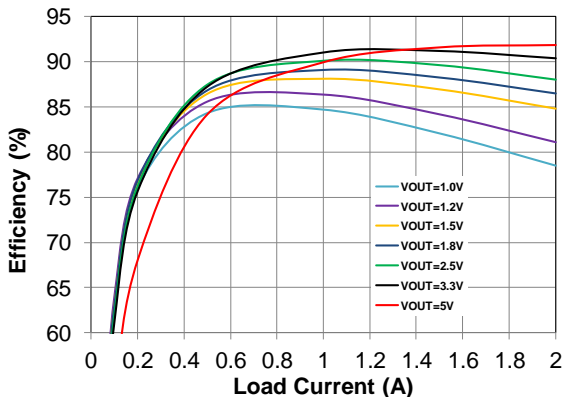
1. Ready-to-Use products
  2. Do-It-Yourself.
- Manufacture assistance is provided



Typical Application Circuit

#### Efficiency vs. Load Current

$V_{IN}=12V, V_{OUT} = 1V - 5V$



### FEATURES

- 4.5V to 24V Wide Operating Input
- 2A Load Current
- Hiccup Short-Circuit Protection
- Over-/Under-Voltage Protection
- Over-Current Protection
- Over-Temperature Protection
- Open Design Files and BOM

### ORDERING INFORMATION

| Part Number                   | Input Voltage (V)              | Output Voltage (V)               | Output Current (A) |
|-------------------------------|--------------------------------|----------------------------------|--------------------|
| MEZD71202A-X                  | A - F: 4.5 - 24<br>G: 6.5 - 24 | 1, 1.2, 1.5, 1.8,<br>2.5, 3.3, 5 | 2                  |
| <b>Output Voltage Options</b> |                                |                                  |                    |
| A = 1.0V                      | B = 1.2V                       | C = 1.5V                         | D = 1.8V           |
| E = 2.5V                      | F = 3.3V                       | G = 5.0V                         |                    |

### mEZD712xx FAMILY PRODUCTS

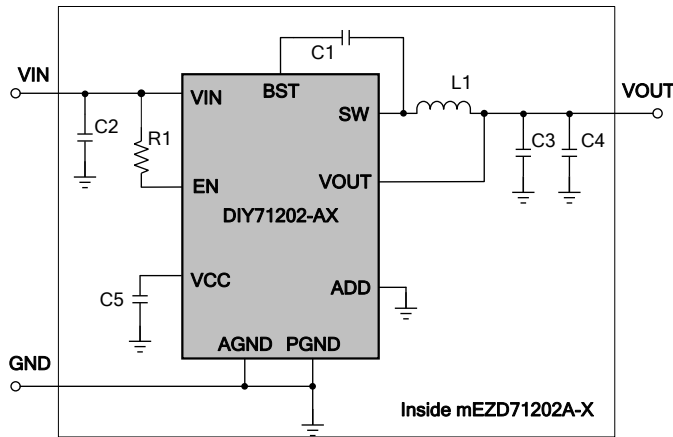
| Part Number  | Input Voltage (V) | Output Voltage (V)               | Output Current (A) |
|--------------|-------------------|----------------------------------|--------------------|
| mEZD71201A-X | 4.5 - 24          | 1, 1.2, 1.5, 1.8,<br>2.5, 3.3, 5 | 1                  |
| mEZD71202A-X | 4.5 - 24          | 1, 1.2, 1.5, 1.8,<br>2.5, 3.3, 5 | 2                  |
| mEZD71203A-X | 4.5 - 16          | 1, 1.2, 1.5, 1.8,<br>2.5, 3.3    | 3                  |
| mEZD71210A-A | 4.5 - 17          | 1                                | 10                 |

### ELECTRICAL CHARACTERISTICS

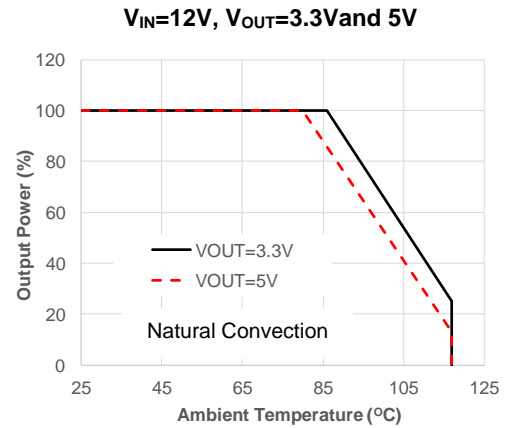
|                             |   |                          |
|-----------------------------|---|--------------------------|
| Input Voltage Range         | $V_{IN\_MIN}$ higher than $V_{OUT}$ by 1V | 4.5 or 6.5 to 24V        |
| Output Voltage Set Accuracy |   | $\pm 2.5\%$ (Typ.)       |
| Output Voltage Ripple       | $V_{IN}=12V, V_{OUT}=3.3V$ , Full Load    | 33.6mV                   |
| Line Regulation             | $V_{IN}$ from MIN to MAX, $V_{OUT}=3.3V$  | $\pm 1\%$ (Typ.)         |
| Load Regulation             | $I_{OUT}$ from MIN to MAX, $V_{OUT}=3.3V$ | $\pm 1\%$ (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 <sup>3</sup> hrs |

NOTE: All electrical characteristics are tested under 25°C ambient temperature,  $V_{IN}=12V$  unless otherwise noted.

#### DO-IT-YOURSELF SCHEMATIC



#### POWER DERATING

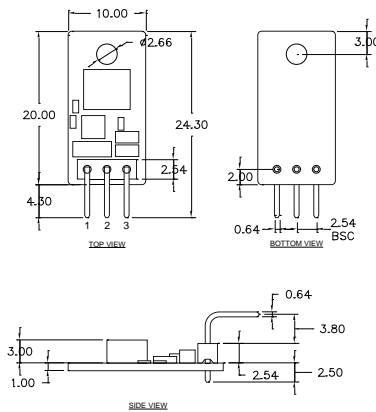


#### BILL OF MATERIALS

| Item | Qty | RefDes | Value         | Description                       | Package     | Manufacturer | Manufacturer P/N                          |
|------|-----|--------|---------------|-----------------------------------|-------------|--------------|---|
| 1    | 1   | C1     | 0.22 $\mu$ F  | Ceramic Cap., 16V, X5R            | 0402        | muRata       | GRM155R61C224KA12D                        |
| 2    | 1   | C2     | 4.7 $\mu$ F   | Ceramic Cap., 50V, X7R            | 1206        | muRata       | GRM31CR71H475KA12L                        |
| 3    | 2   | C3, C4 | 22 $\mu$ F    | Ceramic Cap., 10V, X7T/X5R        | 0805        | muRata       | GRM21BD71A226ME44L/<br>GRM21BR61A226ME51L |
| 4    | 1   | C5     | 1 $\mu$ F     | Ceramic Cap., 10V, X5R            | 0402        | muRata       | GRM155R61A105KE01D                        |
| 5    | 1   | L1*    | 3.3 $\mu$ H   | Indc 4.1A, DCR 27.3m $\Omega$     | 5.5x5x3mm   | Panasonics   | ETQP3M3R3KVP                              |
| 6    | 1   | R1     | 499k $\Omega$ | Film Res., 1%                     | 0402        | Yageo        | RC0402FR-07499KL                          |
| 7    | 1   | P1     | 3-pin         | 3-pin male connector, right angle | Bulk        | MYIC         | MPS010SRRA-3                              |
| 8    | 1   | U1     |               | Synchronous Step-Down Converter   | FCQFN3x3-16 | MPS          | DIY71202-AX**                             |

\* 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



| Pin | Designation | Function       |
|-----|-------------|----------------|
| 1   | VIN         | Input Voltage  |
| 2   | GND         | Power Ground   |
| 3   | VOUT        | Output Voltage |

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

For more information, Gerber files, and PCB layout, please contact [mEZsupport@monolithicpower.com](mailto:mEZsupport@monolithicpower.com)