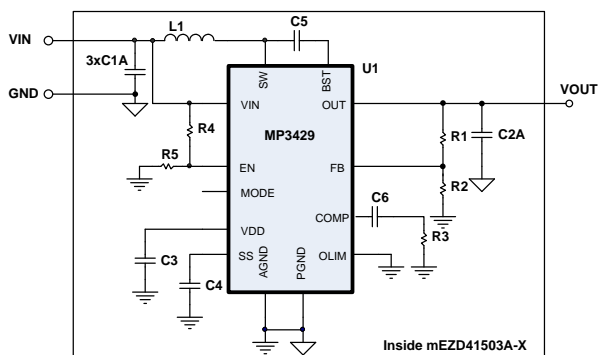




### mEZ Product Options:

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



**Block Diagram**

### FEATURES

- Up to 10V Input Voltage
- 5V, 12V Output Options
- 3A Continuous Output Current
- Open Design Files and BOM
- 600kHz Fixed Frequency
- High Efficiency
- Over-Temperature Protection

### ORDERING INFORMATION

| Part Number  | Input Voltage (V) | Output Voltage (V) | Output Current (A) |
|--------------|-------------------|--------------------|--------------------|
| MEZD41503A-A | 2.7 - 4.2         | 5                  | 3                  |
| MEZD41503A-B | 2.7 - 10          | 12                 | 3                  |

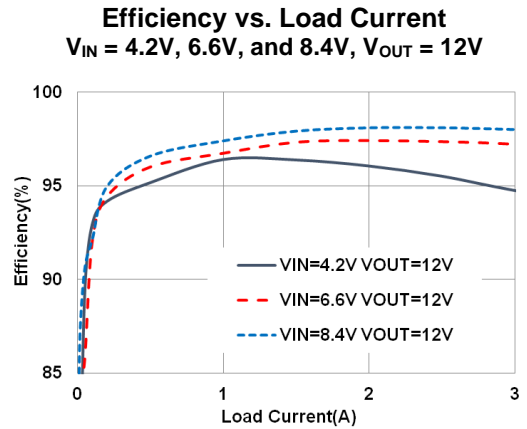
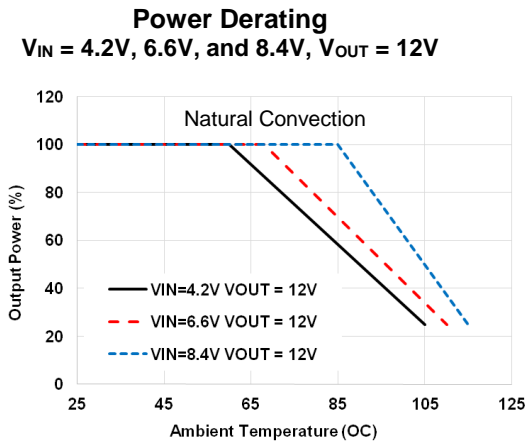
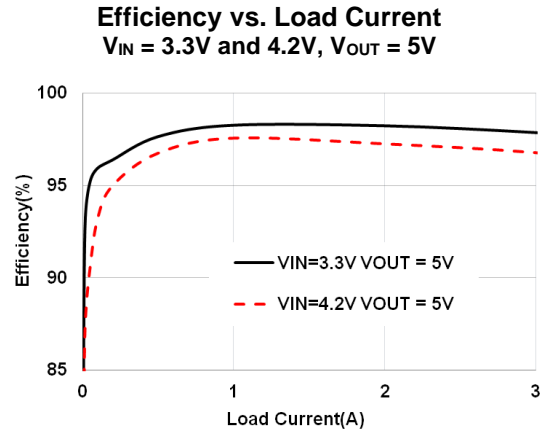
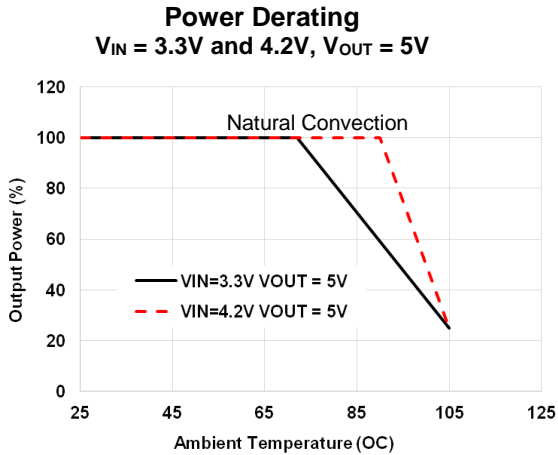
### mEZD4150x-x FAMILY PRODUCTS

| Part Number  | Input Voltage (V) | Output Voltage (V) | Output Current (A) |
|--------------|-------------------|--------------------|--------------------|
| mEZD41501A-X | 2.7 - 13          | 5, 12, 15          | 1                  |
| mEZD41502A-X | 2.7 - 13          | 5, 12, 15          | 2                  |
| mEZD41503A-X | 2.7 - 10          | 5, 12              | 3                  |

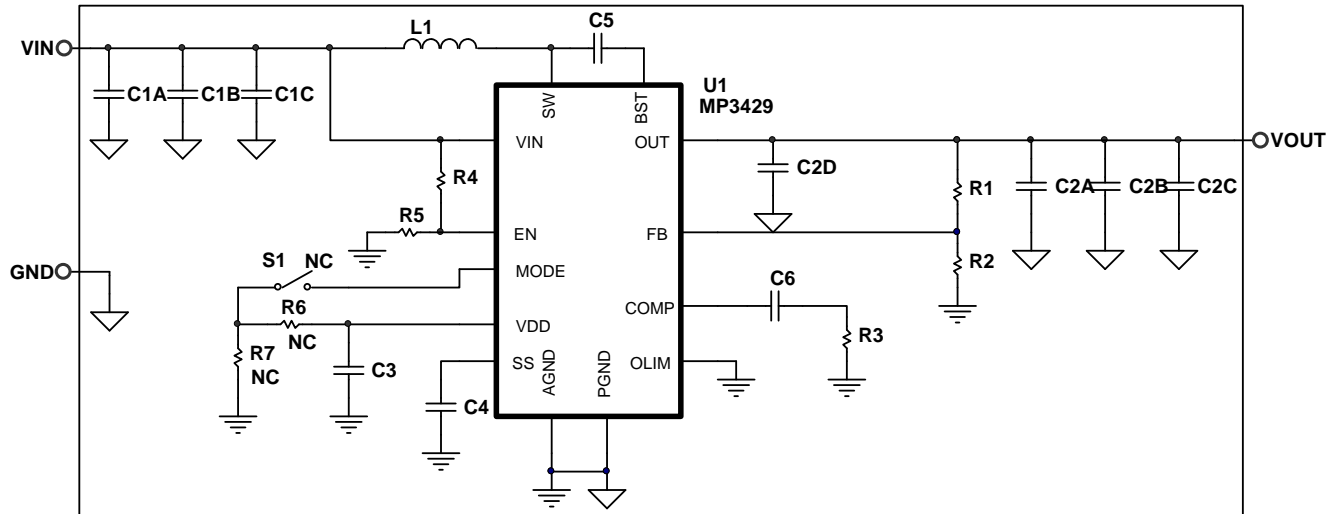
### ELECTRICAL CHARACTERISTICS

| Parameter                   | mEZD41503A-A                                               | mEZD41503A-B                                                |
|-----------------------------|------------------------------------------------------------|-------------------------------------------------------------|
| Input Voltage Range         | 2.7V to 4.2V                                               | 3.7V to 10V                                                 |
| Output Voltage Set Accuracy | ±2.2%                                                      |                                                             |
| Output Voltage Ripple       | $V_{IN} = 3.3V, V_{OUT} = 5V, I_{OUT} = 3A$<br>37mV (Typ.) | $V_{IN} = 6.6V, V_{OUT} = 12V, I_{OUT} = 3A$<br>80mV (Typ.) |
| Line Regulation             | $V_{IN}$ from MIN to MAX, $I_{OUT} = 3A$<br>±0.2%          |                                                             |
| Load Regulation             | $I_{OUT}$ from MIN to MAX, $V_{IN} = 6.6V$<br>±0.5%        |                                                             |
| Efficiency                  | $V_{IN} = 3.3V, V_{OUT} = 5V, I_{OUT} = 3A$<br>96.7%       | $V_{IN} = 6.6V, V_{OUT} = 15V, I_{OUT} = 3A$<br>97.2%       |
| Switching Frequency         | Typical switching frequency<br>600kHz                      |                                                             |
| Short-Circuit Protection    | No output short allowed<br>-                               |                                                             |
| Operating Temperature Range | 0 to 85°C                                                  |                                                             |
| Over-Temperature Protection | OTP<br>150°C                                               |                                                             |
| Calculated MTBF             | MIL-HDBK-217F<br>4185x10 <sup>3</sup> hrs                  |                                                             |

**TYPICAL PERFORMANCE CURVES**



### DO-IT-YOURSELF SCHEMATIC



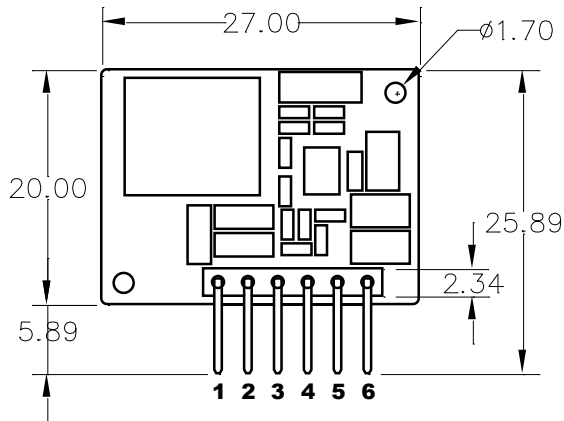
### BILL OF MATERIALS

| Item | Qty | RefDes        | Value                                 | Description                     | Package      | Manufacturer | Manufacturer P/N                         |
|------|-----|---------------|---------------------------------------|---------------------------------|--------------|--------------|------------------------------------------|
| 1    | 3   | C1A, C1B, C1C | 22 $\mu$ F                            | Ceramic Cap., 10V, X7R (A)      | 1206         | Murata       | GRM31CR71A226ME15L                       |
|      |     |               |                                       | Ceramic Cap., 25V, X7R (B)      | 1206         | Murata       | GRM31ER71E226KE15L                       |
| 2    | 3   | C2A, C2B, C2C | 22 $\mu$ F                            | Ceramic Cap., 10V, X7R (A)      | 1210         | Murata       | GRM32ER71A226KE20L                       |
|      |     |               |                                       | Ceramic Cap., 25V, X7R (B)      | 1210         | Murata       | GRM32ER71E226KE15L                       |
| 3    | 2   | C2D, C5       | 100nF                                 | Ceramic Cap., 25V, X7R          | 0603         | Murata       | GRM188R71E104KA01D                       |
| 6    | 1   | C3            | 4.7 $\mu$ F                           | Ceramic Cap., 6.3V, X5R         | 0603         | Murata       | GRM188R60J475KE19D                       |
| 5    | 1   | C4            | 22nF                                  | Ceramic Cap., 25V, X7R          | 0603         | Murata       | GRM188R71E223JA01D                       |
| 7    | 1   | C6            | 8.2nF(A)<br>6.8nF(B)                  | Ceramic Cap., 50V, X7R          | 0603         | Murata       | GRM188R71H822KA01D<br>GRM188R71H682KA01D |
| 8    | 1   | R1            | 750k $\Omega$                         | Film Res, 1%                    | 0603         | YAGEO        | RC0603FR-07750KL                         |
| 9    | 1   | R2            | 187k $\Omega$ (A)<br>68k $\Omega$ (B) | Film Res, 1%                    | 0603         | YAGEO        | RC0603FR-07187KL<br>RC0603FR-0768KL      |
| 10   | 1   | R3            | 3k $\Omega$ (A)<br>10k $\Omega$ (B)   | Film Res, 1%                    | 0603         | YAGEO        | RC0603FR-073KL<br>RC0603FR-0710KL        |
| 11   | 1   | R4            | 30k $\Omega$                          | Film Res, 1%                    | 0603         | YAGEO        | RC0603FR-0730KL                          |
| 12   | 1   | R5            | 34.8k $\Omega$                        | Film Res, 1%                    | 0603         | YAGEO        | RC0603FR-0734K8L                         |
| 13   | 0   | R6, R7        | NC                                    |                                 |              |              |                                          |
| 14   | 1   | L1*           | 1.5 $\mu$ H                           | Irms = 19A, RDC = 3.3m $\Omega$ | 11.5x10mm    | Sumida       | 104CDMCCDS-1R5MC-ND                      |
| 15   | 0   | S1            | NC                                    |                                 |              |              |                                          |
| 16   | 1   | U1            | MP3429                                | Boost Converter                 | QFN<br>3x4mm | MPS          | MP3429GL                                 |
| 17   | 1   | VIN,VOUT,GND  | Connector                             | 6-Pin Connector                 | 2.54mm       | Würth        |                                          |

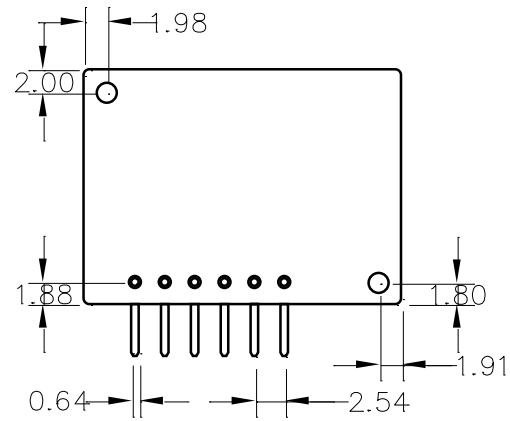
**NOTE:** A, B, C denote this value is specifically for mEZD41503A-A, mEZD41503A-B respectively.

\* Or equivalent

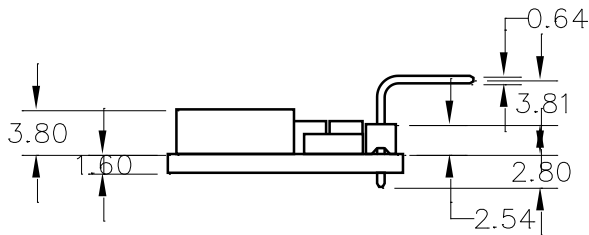
**PRODUCT PACKAGE AND DIMENSIONS**



**TOP VIEW**



**BOTTOM VIEW**



**SIDE VIEW**

| Pin  | Designation | Function       |
|------|-------------|----------------|
| 1, 2 | VIN         | Input Voltage  |
| 3, 4 | GND         | Power Ground   |
| 5, 6 | 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)