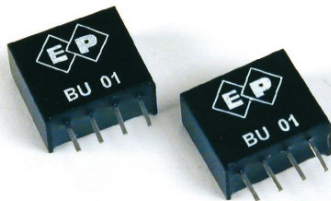


## EPM-BU Series -2W unregulated DC-DC Converter

### Features

SINGLE IN LINE PACKAGE  
UP TO 2W UNREGULATED OUTPUT  
POWER  
100% BURN IN  
HIGH EFFICIENCY  
INTERNAL SMD TECHNOLOGY  
LOW COST  
NO HEATSINK REQUIRED  
UL 94V-0 PACKAGE MATERIAL  
CUSTOM SOLUTIONS AVAILABLE  
ROHS COMPLIANT



### Specification

#### Output Specification

|  |                  |
|--|------------------|
| Voltage Set-point Accuracy             | +/-2% max.       |
| Temperature Coefficient                | +/-0.05%/°C      |
| Ripple & Noise (20MHz BW) <sup>1</sup> | 100mVp-p max.    |
| Line Regulation <sup>2</sup>           | +/-1.2% max.     |
| Load Regulation <sup>3</sup>           | +/-8% max.       |
| Minimum Load                           | 10% of Full Load |
| Short Circuit Protection               | Momentary        |

#### Input Specification

|                         |                                    |
|-------------------------|------------------------------------|
| Input Voltage Range     | +/-10% max.                        |
| Input Filter Protection | Capacitor type<br>Fuse Recommended |

#### Environmental Specifications

|                       |                     |
|-----------------------|---------------------|
| Operating Temperature | -40 °C to +71 °C    |
| Storage Temperature   | -55 °C to +125 °C   |
| Humidity              | 95% max.            |
| Cooling               | Free-Air Convection |

#### General Specifications

|                                |                        |
|--------------------------------|------------------------|
| Efficiency                     | 77%-85%                |
| Isolation Voltage <sup>4</sup> | 1500VDC min.           |
| Isolation Resistance           | 109 ohms min.          |
| Isolation Capacitance          | 80pF max.              |
| Switching Frequency            | 100KHz min.            |
| MTBF <sup>5</sup>              | >1,100,000 Hours       |
| Weight                         | 1.3g typ.              |
| Case Material                  | Non-Conductive Plastic |
| Case Size                      | 11.7mm*7.5mm*10.1mm    |
| Radiated Emissions             | EN55022 Class B        |

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD, AND 25 °C UNLESS OTHERWISE NOTED

<sup>1</sup> Measured with 1uF ceramic capacitor connects to the output pins.

<sup>2</sup> Line Regulation is for a 1.0% change in input Voltage.

<sup>3</sup> Load Regulation is for output load current change from 20% to 100%.

<sup>4</sup> 1500 For 10 seconds.

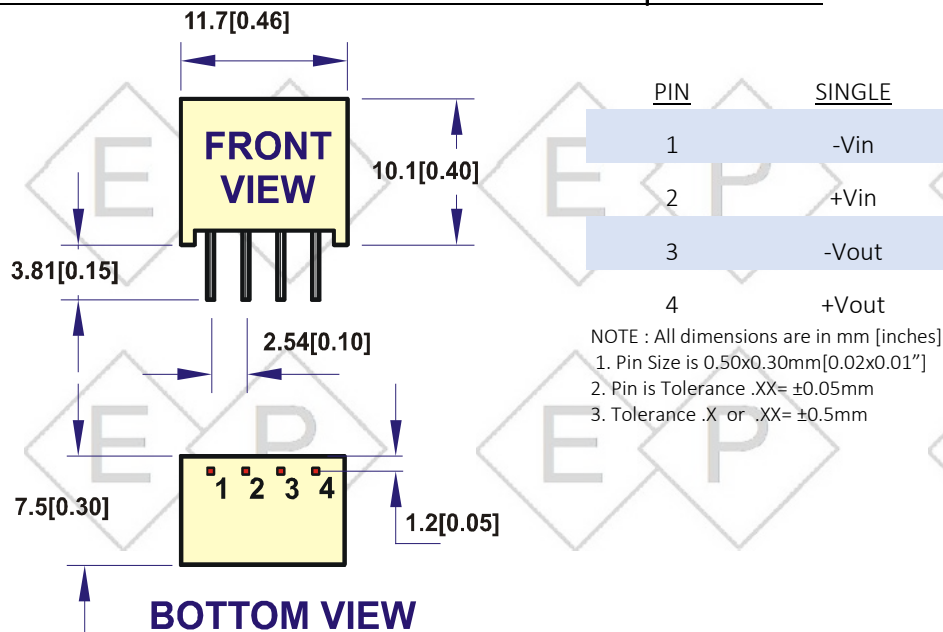
<sup>5</sup> MIL-HDBK-217F @25 °C , Ground Benign

## Selection Guide 2W Output

| MODEL NUMBER | INPUT VOLTAGE (VDC) | OUTPUT VOLTAGE (VDC) | OUTPUT CURRENT (mA) | INPUT <sup>6</sup> |         | EFF (%) <sup>7</sup> | ISOLATION (VDC) |
|--------------|---------------------|----------------------|---------------------|--------------------|---------|----------------------|-----------------|
|              |                     |                      |                     | CURRENT(mA)        |         |                      |                 |
|              |                     |                      |                     | FULL LOAD          | NO LOAD |                      |                 |
| EPM-BU-01 2W | 5                   | 5                    | 400                 | 520                | 55      | 77                   | 1500            |
| EPM-BU-03 2W | 5                   | 12                   | 167                 | 500                | 55      | 80                   | 1500            |
| EPM-BU-04 2W | 5                   | 15                   | 133                 | 488                | 55      | 82                   | 1500            |
| EPM-BU-11 2W | 12                  | 5                    | 400                 | 214                | 16      | 78                   | 1500            |
| EPM-BU-13 2W | 12                  | 12                   | 167                 | 207                | 16      | 81                   | 1500            |
| EPM-BU-14 2W | 12                  | 15                   | 133                 | 203                | 16      | 82                   | 1500            |
| EPM-BU-21 2W | 24                  | 5                    | 400                 | 107                | 15      | 78                   | 1500            |
| EPM-BU-23 2W | 24                  | 12                   | 167                 | 103                | 15      | 81                   | 1500            |
| EPM-BU-24 2W | 24                  | 15                   | 133                 | 101                | 15      | 82                   | 1500            |

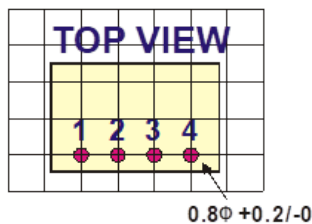
Note: Other input to output voltages may be available. Please contact factory.

## Mechanical Dimensions & Recommended Footprint Details



**All dimensions are in mm[inches]**

GRID: 2.54 mm

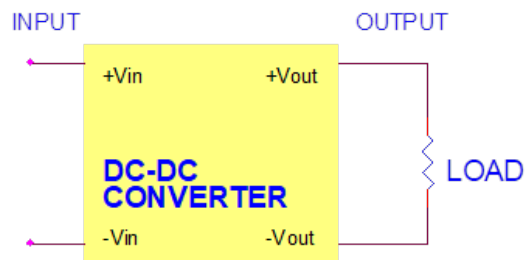
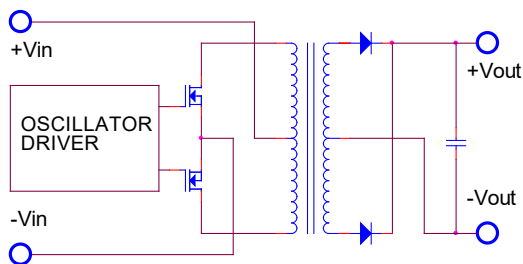


<sup>6</sup> NOMINAL INPUT VOLTAGE.

<sup>7</sup> NOMINAL INPUT VOLTAGE, FULL LOAD.

## Simplified Schematic

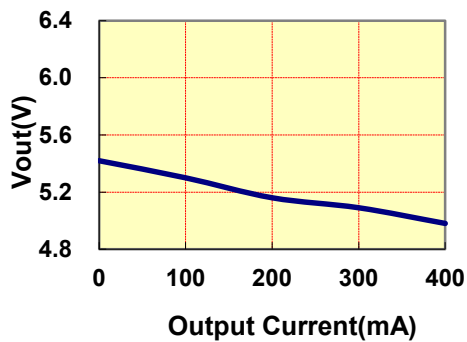
## Typical Applications



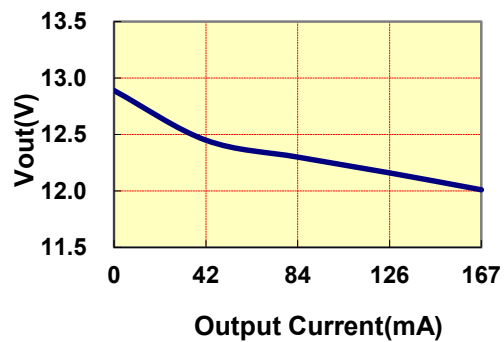
## Typical Performance Curves

Specifications typical at  $T_A=25^\circ\text{C}$ , nominal input voltage, rated output current unless otherwise specified.

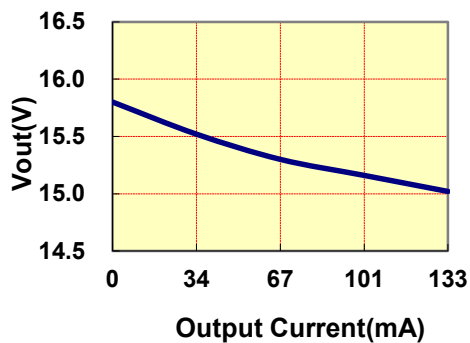
VOUT VS LOAD (5Vout Models)



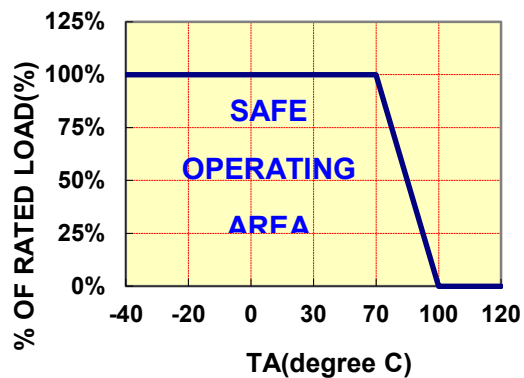
VOUT VS LOAD (12Vout Models)



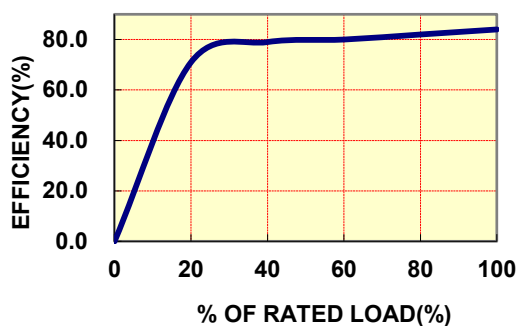
VOUT VS LOAD (15Vout Models)



DERATING CURVE

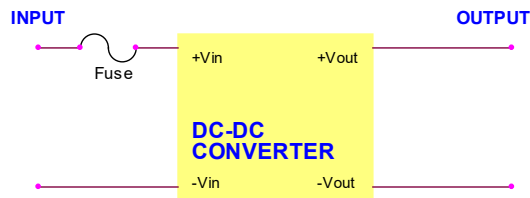


EFFICIENCY VS LOAD



## Input Fuse Selection Guide

| 4.5-5.5V<br>INPUT VOLTAGE(VDC) | 10.8-13.2V<br>INPUT VOLTAGE(VDC) | 21.6-26.4V<br>INPUT VOLTAGE(VDC) |
|--------------------------------|----------------------------------|----------------------------------|
| 1500mA Slow-Blow Type          | 600mA Slow-Blow Type             | 300mA Slow-Blow Type             |



Note: Certain applications may require the installation of external fuse in front of the input.

## EPM-BU Series Application Notes:

### EXTERNAL CAPACITANCE REQUIREMENTS:

Output filtering is required for operation. A minimum of 10uF is needed. Output capacitance may be increased for additional filtering, not to exceed 220uF.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5ohm from DC to 250KHz is required.

We Can Offer EMC-Filter According To EN55011/22 Class B.

### Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting -OUT as the negative output.

Spezifikationen können sich ohne Vorankündigung ändern.

Für etwaige fehlerhafte Angaben oder unvollständige Bezeichnungen kann keine Haftung übernommen werden.