

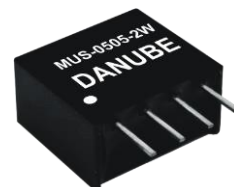
# MU-2W SERIES

2W UNREGULATED

# DANUBE

## 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
- 3 YEARS WARRANTY



## OUTPUT SPECIFICATIONS

|                                        |                  |
|----------------------------------------|------------------|
| 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        |

## ENVIRONMENTAL SPECIFICATIONS

|                       |                     |
|-----------------------|---------------------|
| Operating Temperature | -40 °C to +71 °C    |
| Case Temperature      | +105 °C max.        |
| Storage Temperature   | -55 °C to +125 °C   |
| Humidity              | 95% max.            |
| Cooling               | Free-Air Convection |

## INPUT SPECIFICATIONS

|                     |                  |
|---------------------|------------------|
| Input Voltage Range | +/-10% max.      |
| Input Filter        | Capacitor Type   |
| Protection          | Fuse Recommended |

## GENERAL SPECIFICATIONS

|                                |                           |
|--------------------------------|---------------------------|
| Efficiency                     | 82% max.                  |
| Isolation Voltage <sup>4</sup> | 1500VDC min.              |
| Isolation Resistance           | 10 <sup>9</sup> ohms min. |
| Isolation Capacitance          | 80pF max.                 |
| Switching Frequency            | 100KHz max.               |
| 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             | EN55032 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

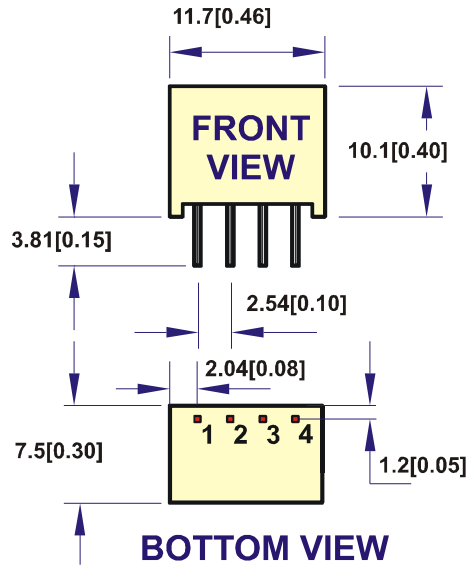
| MODEL NUMBER | INPUT VOLTAGE (VDC) | OUTPUT VOLTAGE (VDC) | OUTPUT CURRENT (mA) | INPUT <sup>6</sup> CURRENT(mA) |         | EFF (%) <sup>7</sup> | ISOLATION (VDC) |
|--------------|---------------------|----------------------|---------------------|--------------------------------|---------|----------------------|-----------------|
|              |                     |                      |                     | FULL LOAD                      | NO LOAD |                      |                 |
| MUS-0505-2W  | 5                   | 5                    | 400                 | 520                            | 55      | 77                   | 1500            |
| MUS-0512-2W  | 5                   | 12                   | 167                 | 500                            | 55      | 80                   | 1500            |
| MUS-0515-2W  | 5                   | 15                   | 133                 | 488                            | 55      | 82                   | 1500            |
| MUS-1205-2W  | 12                  | 5                    | 400                 | 214                            | 16      | 78                   | 1500            |
| MUS-1212-2W  | 12                  | 12                   | 167                 | 207                            | 16      | 81                   | 1500            |
| MUS-1215-2W  | 12                  | 15                   | 133                 | 203                            | 16      | 82                   | 1500            |
| MUS-2405-2W  | 24                  | 5                    | 400                 | 107                            | 15      | 78                   | 1500            |
| MUS-2412-2W  | 24                  | 12                   | 167                 | 103                            | 15      | 81                   | 1500            |
| MUS-2415-2W  | 24                  | 15                   | 133                 | 101                            | 15      | 82                   | 1500            |

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

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

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

## ● MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS



| PIN | SINGLE |
|-----|--------|
| 1   | -Vin   |
| 2   | +Vin   |
| 3   | -Vout  |
| 4   | +Vout  |

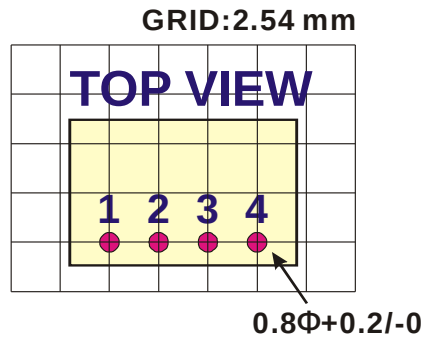
NOTE : All dimensions are in mm [inches]

1. Pin Size is 0.50x0.30mm[0.02x0.01"]

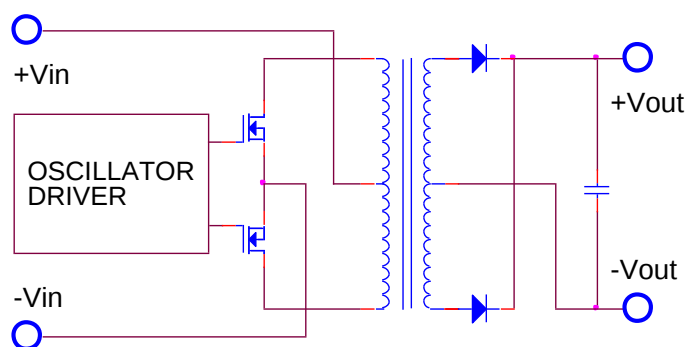
2. Pin is Tolerance .XX=  $\pm 0.05$ mm

3. Tolerance .X or .XX=  $\pm 0.5$ mm

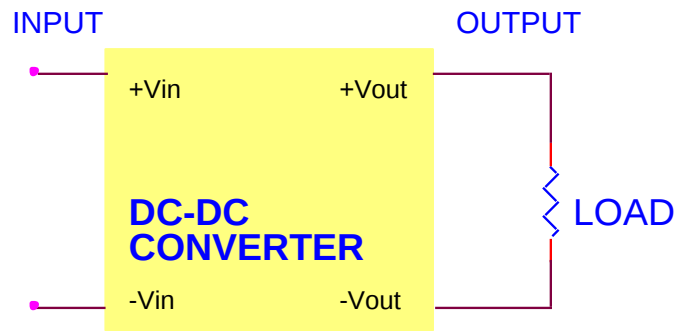
All dimensions are in mm[inches]



## ● SIMPLIFIED SCHEMATIC



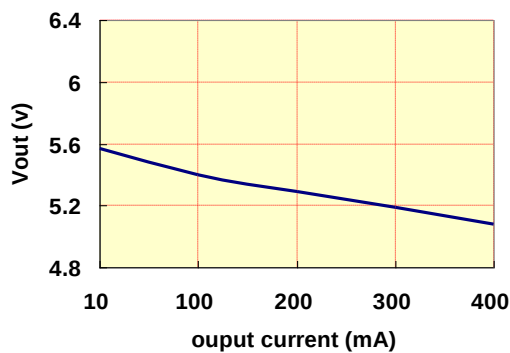
## ● TYPICAL APPLICATIONS



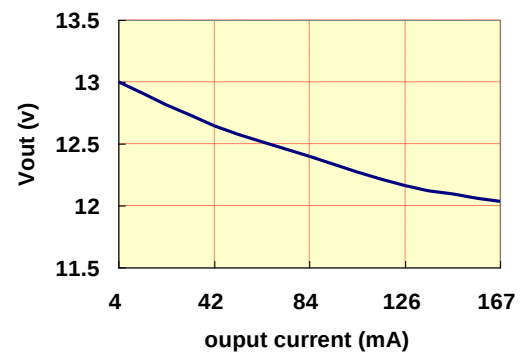
## ● TYPICAL PERFORMANCE CURVES

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

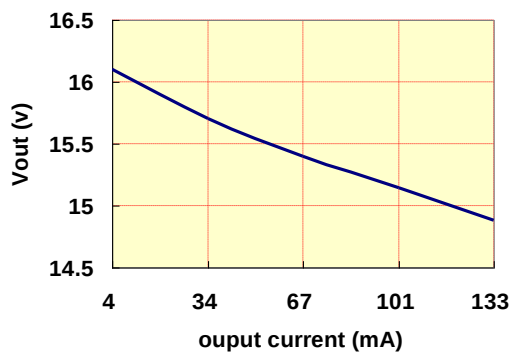
**VOUT VS LOAD (5Vout Models)**



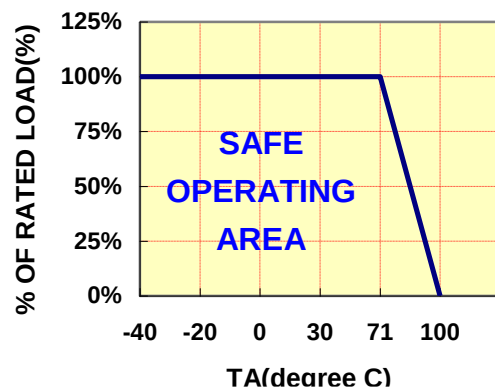
**VOUT VS LOAD (12Vout Models)**



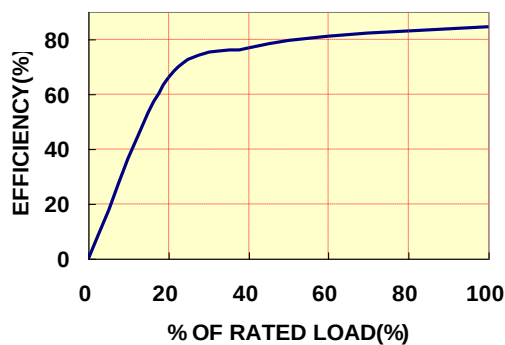
**VOUT VS LOAD (15Vout Models)**



**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             |

The diagram shows a yellow rectangular block labeled "DC-DC CONVERTER". On the left side, there are two input terminals labeled "+Vin" (top) and "-Vin" (bottom). On the right side, there are two output terminals labeled "+Vout" (top) and "-Vout" (bottom). A blue line labeled "INPUT" enters from the left, passes through a "Fuse" symbol (a circle with a diagonal line), and then splits to connect to the "+Vin" and "-Vin" terminals. A blue line labeled "OUTPUT" exits from the right, splitting to connect from the "+Vout" and "-Vout" terminals.

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

## MU-2W 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 EN55032 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.

---

---

## FOR MORE INFORMATION CALL:

**Danube Enterprise Co., Ltd.**

Tel: 886-7-3755165

Fax: 886-7-3755330

E-mail: [danube@ms10.hinet.net](mailto:danube@ms10.hinet.net)

Home Page

<http://www.danube.com.tw>

---

---