



Наличие и актуальные цены на

**SPUN02M-05**

<https://www.mean-well.ru/store/SPUN02M-05/>



2W SIP Package DC-DC Unregulated Converter

## SPUN02 & DPUN02 series



### ■ Features

- SIP7 package with industry standard pinout
- Operating temperature range -40 ~ +105°C
- Comply to BS EN/EN55032 radiated Class A without additional components
- High efficiency up to 87%
- Protection: Short circuit(continuous)/Over load
- 3KVDC I/O isolation
- Low cost
- 3 years warranty

### ■ Applications

- Telecom/datacom system
- Wireless network
- Industrial control facility
- Instrument
- Analyzer
- Detector
- Data switch

### ■ GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

### ■ Description

SPUN02 and DPUN02 series are 2W isolated and unregulated module type DC-DC converter with SIP7 package. It features international standard pins, a high efficiency up to 87%, wide working temperature range -40~+105°C, 3KVDC I/P-O/P isolation voltage, compliance to BS EN/EN55032 radiated Class A without additional components, short circuit protection, etc. The models account for different input voltage 5V/12V/24V±10%, and various output voltage, 5V/12V/15V for single output and ±5V/±12V/±15V for dual outputs, which are suitable for all kinds of systems, Such as industrial control, telecommunication field, distributed power architecture, and so on.

### ■ Model Encoding

**S**PUN02**L**-**12**

Output voltage (5/12/15Vdc , ±5/±12/±15Vdc)

Input voltage (L: 4.5 ~ 5.5Vdc , M: 10.8 ~ 13.2Vdc , N: 21.6 ~ 26.4Vdc)

Rated wattage

Series name { S:Single output  
D: Dual output



## 2W SIP Package DC-DC Unregulated Converter **SPUN02 & DPUN02** series

| MODEL SELECTION TABLE |                          |               |           |                   |                   |                      |                          |
|-----------------------|--------------------------|---------------|-----------|-------------------|-------------------|----------------------|--------------------------|
| ORDER NO.             | INPUT                    |               |           | OUTPUT            |                   | EFFICIENCY<br>(TYP.) | CAPACITOR LOAD<br>(MAX.) |
|                       | INPUT VOLTAGE<br>(RANGE) | INPUT CURRENT |           | OUTPUT<br>VOLTAGE | OUTPUT<br>CURRENT |                      |                          |
|                       |                          | NO LOAD       | FULL LOAD |                   |                   |                      |                          |
| SPUN02L-05            | 5V<br>(4.5 ~ 5.5V)       | 40mA          | 488mA     | 5V                | 0 ~ 400mA         | 81%                  | 220μF                    |
| SPUN02L-12            |                          | 50mA          | 473mA     | 12V               | 0 ~ 167mA         | 84%                  | 220μF                    |
| SPUN02L-15            |                          | 55mA          | 478mA     | 15V               | 0 ~ 134mA         | 84%                  | 220μF                    |
| DPUN02L-05            |                          | 40mA          | 482mA     | ±5V               | ±0 ~ 200mA        | 82%                  | *100μF                   |
| DPUN02L-12            |                          | 50mA          | 469mA     | ±12V              | ±0 ~ 83mA         | 84%                  | *100μF                   |
| DPUN02L-15            |                          | 45mA          | 473mA     | ±15V              | ±0 ~ 67mA         | 86%                  | *100μF                   |
| SPUN02M-05            | 12V<br>(10.8 ~ 13.2V)    | 20mA          | 203mA     | 5V                | 0 ~ 400mA         | 81%                  | 220μF                    |
| SPUN02M-12            |                          | 20mA          | 192mA     | 12V               | 0 ~ 167mA         | 86%                  | 220μF                    |
| SPUN02M-15            |                          | 20mA          | 193mA     | 15V               | 0 ~ 134mA         | 86%                  | 220μF                    |
| DPUN02M-05            |                          | 20mA          | 198mA     | ±5V               | ±0 ~ 200mA        | 83%                  | *100μF                   |
| DPUN02M-12            |                          | 20mA          | 193mA     | ±12V              | ±0 ~ 83mA         | 87%                  | *100μF                   |
| DPUN02M-15            |                          | 20mA          | 193mA     | ±15V              | ±0 ~ 67mA         | 87%                  | *100μF                   |
| SPUN02N-05            | 24V<br>(21.6 ~ 26.4V)    | 10mA          | 102mA     | 5V                | 0 ~ 400mA         | 81%                  | 220μF                    |
| SPUN02N-12            |                          | 10mA          | 96mA      | 12V               | 0 ~ 167mA         | 85%                  | 220μF                    |
| SPUN02N-15            |                          | 10mA          | 95mA      | 15V               | 0 ~ 134mA         | 86%                  | 220μF                    |
| DPUN02N-05            |                          | 10mA          | 100mA     | ±5V               | ±0 ~ 200mA        | 81%                  | *100μF                   |
| DPUN02N-12            |                          | 10mA          | 96mA      | ±12V              | ±0 ~ 83mA         | 86%                  | *100μF                   |
| DPUN02N-15            |                          | 10mA          | 95mA      | ±15V              | ±0 ~ 67mA         | 86%                  | *100μF                   |

\* For each output

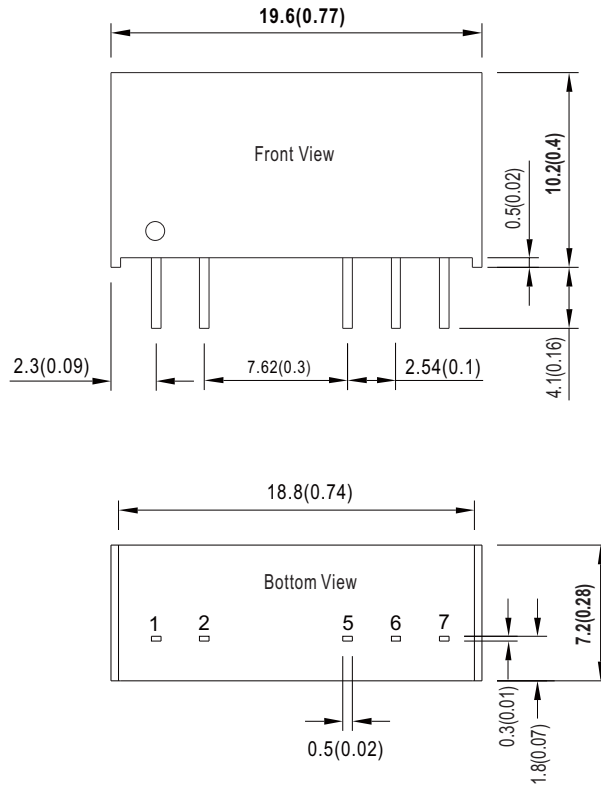


## 2W SIP Package DC-DC Unregulated Converter **SPUN02 & DPUN02** series

| SPECIFICATION             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                          |                        |                                 |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------|---------------------------------|
| INPUT                     | VOLTAGE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | L: 4.5 ~ 5.5Vdc , M: 10.8 ~ 13.2Vdc , N: 21.6 ~ 26.4Vdc                                                                  |                        |                                 |
|                           | SURGE VOLTAGE (100ms max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5Vin models : 9Vdc ; 12Vin models : 18Vdc ; 24Vin models : 30Vdc                                                         |                        |                                 |
|                           | FILTER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Internal capacitor                                                                                                       |                        |                                 |
|                           | PROTECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Fuse recommended. 5Vin models: 1A Slow-Blow Type, 12Vin models: 500mA Slow-Blow Type, 24Vin models: 250mA Slow-Blow Type |                        |                                 |
|                           | INTERNAL POWER DISSIPATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 500mW                                                                                                                    |                        |                                 |
| OUTPUT                    | VOLTAGE ACCURACY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ±3.0% max.                                                                                                               |                        |                                 |
|                           | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2W                                                                                                                       |                        |                                 |
|                           | RIPPLE & NOISE   Note.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 100mVp-p(150mV for SPUN02L-05/12)                                                                                        |                        |                                 |
|                           | LINE REGULATION   Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.2% for 1% input variation                                                                                              |                        |                                 |
|                           | LOAD REGULATION   Note.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10%                                                                                                                      |                        |                                 |
|                           | SWITCHING FREQUENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 60KHz                                                                                                                    |                        |                                 |
| PROTECTION                | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Protection type: Continuous, automatic recovery                                                                          |                        |                                 |
|                           | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Protection type : Recovers automatically after fault condition is removed                                                |                        |                                 |
| ENVIRONMENT               | COOLING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Free-air convection                                                                                                      |                        |                                 |
|                           | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -40 ~ +105℃ (Refer to "Derating Curve")                                                                                  |                        |                                 |
|                           | CASE TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | +105℃ max.                                                                                                               |                        |                                 |
|                           | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20% ~ 90% RH non-condensing                                                                                              |                        |                                 |
|                           | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -55 ~ +125℃, 10 ~ 95% RH non-condensing                                                                                  |                        |                                 |
|                           | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ±0.05% / °C (0 ~ 85℃)                                                                                                    |                        |                                 |
|                           | SOLDERING TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1.5mm from case of 1 ~ 3sec./260℃ max.                                                                                   |                        |                                 |
|                           | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes                                                  |                        |                                 |
| SAFETY & EMC<br>( Note.5) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EAC TP TC 020/2011 approved                                                                                              |                        |                                 |
|                           | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | I/P-O/P:3KVDC                                                                                                            |                        |                                 |
|                           | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH                                                                                |                        |                                 |
|                           | ISOLATION CAPACITANCE (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 18pF                                                                                                                     |                        |                                 |
|                           | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Parameter                                                                                                                | Standard               | Test Level / Note               |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Conducted                                                                                                                | BS EN/EN55032(CISPR32) | N/A                             |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Radiated                                                                                                                 | BS EN/EN55032(CISPR32) | Class A                         |
|                           | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Parameter                                                                                                                | Standard               | Test Level / Note               |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ESD                                                                                                                      | BS EN/EN61000-4-2      | Level 2, ±8KV air, ±4KV contact |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Radiated Susceptibility                                                                                                  | BS EN/EN61000-4-3      | Level 2, 3V/m                   |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | EFT/Burest                                                                                                               | BS EN/EN61000-4-4      | Level 1, 0.5KV                  |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Surge                                                                                                                    | BS EN/EN61000-4-5      | Level 1, 0.5KV Line-Line        |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Conducted                                                                                                                | BS EN/EN61000-4-6      | Level 2, 3V(e.m.f.)             |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Magnetic Field                                                                                                           | BS EN/EN61000-4-8      | Level 2, 3A/m                   |
| OTHERS                    | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3.3Mhrs   MIL-HDBK-217F(25℃)                                                                                             |                        |                                 |
|                           | DIMENSION (L*W*H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 19.6*7.2*10.2mm (0.77*0.28*0.40 inch)                                                                                    |                        |                                 |
|                           | CASE MATERIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Non-Conductive black plastic (UL 94V-0 rated)                                                                            |                        |                                 |
|                           | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2.7g ; 14pcs/per tube, 2058pcs/147 tube/per carton                                                                       |                        |                                 |
| NOTE                      | 1.All parameters are specified at normal input(L:5Vdc, M:12Vdc, N:24Vdc), rated load, 25℃ 70% RH ambient.<br>2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf & 47µf capacitor.<br>3.Line regulation is measured from low line to high line at rated load.<br>4.Load regulation is measured from 20% to 100% rated load.<br>5.The final equipment must be re-confirm that it still meet EMC directives. For guidance on how to perform these EMC tests, please refer to “EMI testing of component power supplies.”(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> )<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                          |                        |                                 |

## ■ Mechanical Specification

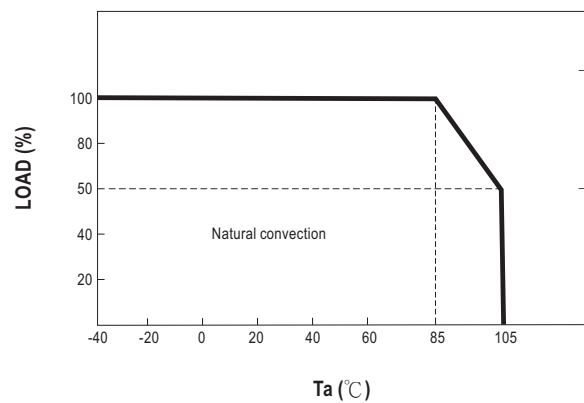
- All dimensions in mm(inch)
- Tolerance:  $x.x \pm 0.25\text{mm}$  ( $x.xx \pm 0.01"$ )  
 $x.xx \pm 0.13\text{mm}$  ( $x.xxx \pm 0.005"$ )
- Pin pitch tolerance:  $\pm 0.05\text{mm}$  ( $\pm 0.002"$ )



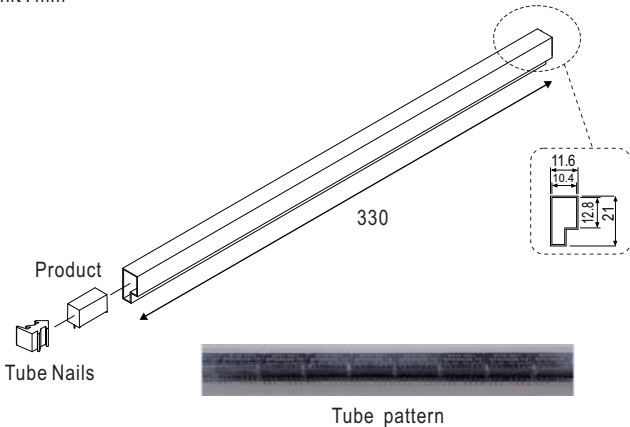
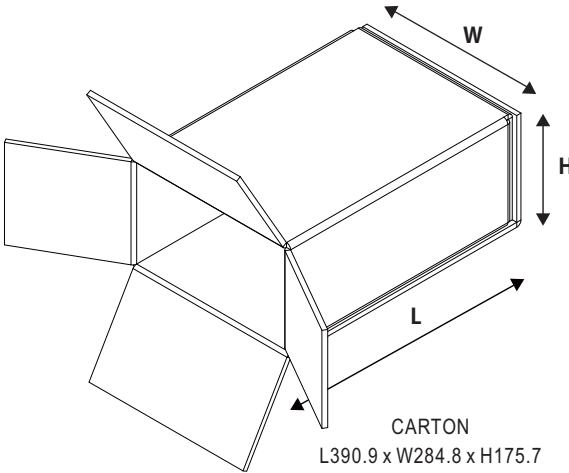
## ■ Pin Configuration

| Pin-Out |                           |                         |
|---------|---------------------------|-------------------------|
| Pin No. | SPUN02<br>(Single output) | DPUN02<br>(Dual output) |
| 1       | +Vin                      | +Vin                    |
| 2       | -Vin                      | -Vin                    |
| 5       | -Vout                     | -Vout                   |
| 6       | No pin                    | Common                  |
| 7       | +Vout                     | +Vout                   |

## ■ Derating Curve



## Packing

| Standard Tube Packing                                                                                                                                                                                                                                                                                                                           | MPQ<br>Per Tube<br>(PCS) | One Tube<br>G.W. | Max. Q'TY/<br>Carton(PCS) | One Carton<br>G.W. |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------|---------------------------|--------------------|
| <p>Unit : mm</p>  <p>Product</p> <p>Tube Nails</p> <p>330</p> <p>11.6</p> <p>10.4</p> <p>12.8</p> <p>2.1</p> <p>Tube pattern</p>  <p>CARTON<br/>L390.9 x W284.8 x H175.7</p> | 14                       | 56.3g            | 2058                      | 10.28Kg            |

## Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>