# 3W SIP Package DC-DC Regulated Converter SPBW03 & DPBW03 series







CE

## Features

- SIP8 package with industry standard pinout
- 4:1 ultrawide input range
- Operating temperature range -40 ~ +85℃
- No minimum load required
- Comply to EN55032 radiated Class A without additional components
- High efficiency up to 85%
- Protections: Short circuit (Continuous) / Overload / Input under voltage
- 1.5KVDC I/O isolation
- Remote ON/OFF control
- 3 years warranty

## Applications

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

## Description

SPBW03 and DPBW03 series are 3W isolated and regulated module type DC-DC converter with SIP8 package. It features international standard pins, a high efficiency up to 85%, wide working temperature range -40~+85℃, 1.5KVDC I/P-O/P isolation voltage, compliance to EN55032 radiated Class A without additional components, continuous-mode short circuit protection, etc. The models account for different input voltage 9~36V and 18~75V 4:1 wide input range, and various output voltage, 3.3V/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 PBW03 F – 12**

- 12 — Output voltage (3.3/5/12/15Vdc ; ±5/±12/±15Vdc)
- F — Input voltage (F: 9~36Vdc ; G: 18~75Vdc)
- 03 — Rated wattage
- S PBW — Series name { S:Single output / D:Dual output

## MODEL SELECTION TABLE

| ORDER NO. | INPUT | | | OUTPUT | | EFFICIENCY (TYP.) | CAPACITOR LOAD (MAX.) |
|---|---|---|---|---|---|---|---|
| | INPUT VOLTAGE (RANGE) | INPUT CURRENT | | OUTPUT VOLTAGE | OUTPUT CURRENT | | |
| | | NO LOAD | FULL LOAD | | | | |
| SPBW03F-03 | 24V (9 ~ 36V) | 5mA | 122mA | 3.3V | 0 ~ 700mA | 79% | 180μF |
| SPBW03F-05 | | 4mA | 154mA | 5V | 0 ~ 600mA | 81% | 1000μF |
| SPBW03F-12 | | 11mA | 150mA | 12V | 0 ~ 250mA | 84% | 220μF |
| SPBW03F-15 | | 12mA | 150mA | 15V | 0 ~ 200mA | 84% | 120μF |
| DPBW03F-05 | | 8mA | 154mA | ±5V | ±0 ~ 300mA | 81% | *100μF |
| DPBW03F-12 | | 27mA | 150mA | ±12V | ±0 ~ 125mA | 83% | *470μF |
| DPBW03F-15 | | 16mA | 152mA | ±15V | ±0 ~ 100mA | 81% | *100μF |
| SPBW03G-03 | 48V (18 ~ 75V) | 3mA | 61mA | 3.3V | 0 ~ 700mA | 79% | 180μF |
| SPBW03G-05 | | 3mA | 77mA | 5V | 0 ~ 600mA | 82% | 1000μF |
| SPBW03G-12 | | 6mA | 74mA | 12V | 0 ~ 250mA | 85% | 220μF |
| SPBW03G-15 | | 7mA | 75mA | 15V | 0 ~ 200mA | 84% | 120μF |
| DPBW03G-05 | | 5mA | 76mA | ±5V | ±0 ~ 300mA | 82% | *100μF |
| DPBW03G-12 | | 13mA | 75mA | ±12V | ±0 ~ 125mA | 83% | *470μF |
| DPBW03G-15 | | 13mA | 75mA | ±15V | ±0 ~ 100mA | 83% | *100μF |

* For each output

MEAN WELL

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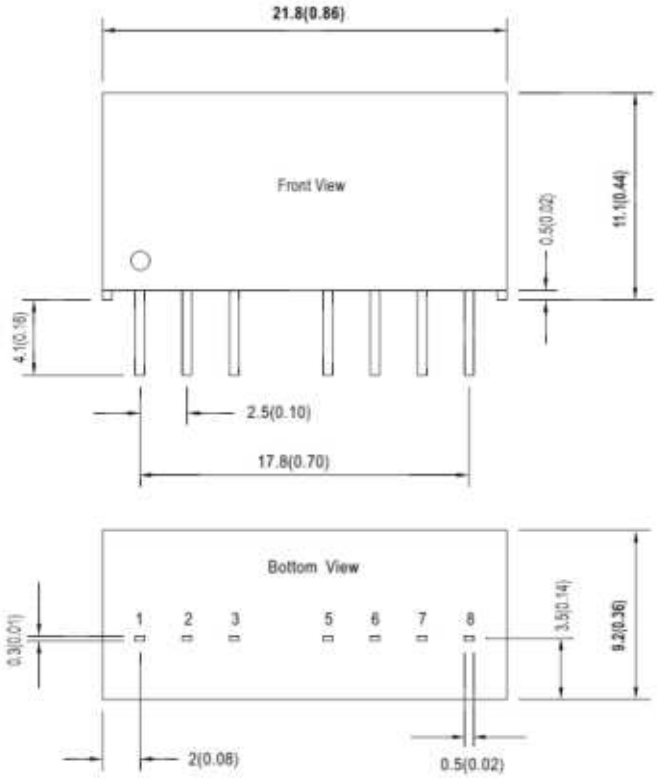
| SPECIFICATION | | | | |
|---|---|---|---|---|
| INPUT | VOLTAGE RANGE | F: 9~36Vdc , G: 18~75Vdc | | |
| | SURGE VOLTAGE (100ms max.) | 24Vin models : 50Vdc, 48Vin models : 100Vdc | | |
| | FILTER | Internal capacitor | | |
| | PROTECTION | Fuse recommended. 24Vin models: 1A Slow-Blow, 48Vin models: 500mA Slow-Blow Type | | |
| | INTERNAL POWER DISSIPATION | 500mW | | |
| OUTPUT | VOLTAGE ACCURACY | ±1.5% | | |
| | RATED POWER | 3W | | |
| | RIPPLE & NOISE Note.2 | 50mVp-p | | |
| | LINE REGULATION Note.3 | 0.5% | | |
| | LOAD REGULATION Note.4 | Single output models: ±0.5%, Dual output models: ±1% | | |
| | SWITCHING FREQUENCY (Min.) | 100KHz | | |
| PROTECTION | SHORT CIRCUIT | Protection type : Continuous, automatic recovery | | |
| | OVERLOAD | Protection type : Recovers automatically after fault condition is removed | | |
| | UNDER VOLTAGE LOCKOUT | Start-up voltage | 24Vin : 7.5Vdc ; 48Vin : 15.5Vdc | |
| | | Shutdown voltage | 24Vin : 6Vdc ; 48Vin : 12Vdc | |
| FUNCTION | REMOTE CONTROL | Power ON: R.C. ~ -Vin open circuit ; Power OFF: R.C. ~ -Vin <1.2V or short | | |
| ENVIRONMENT | COOLING | Free-air convection | | |
| | WORKING TEMP. | -40 ~ +85℃ (Refer to "Derating Curve") | | |
| | CASE TEMPERATURE | +100℃ max. | | |
| | WORKING HUMIDITY | 20% ~ 90% RH non-condensing | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +125℃, 10 ~ 95% RH non-condensing | | |
| | TEMP. COEFFICIENT | 0.03% / ℃ (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 (Note.5) | WITHSTAND VOLTAGE | I/P-O/P:1.5KVDC | | |
| | ISOLATION RESISTANCE | I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH | | |
| | ISOLATION CAPACITANCE (Typ.) | 500pF | | |
| | EMC EMISSION | **Parameter** | **Standard** | **Test Level / Note** |
| | | Conducted | EN55032(CISPR32) | N/A |
| | | Radiated | EN55032(CISPR32) | Class A |
| | EMC IMMUNITY | **Parameter** | **Standard** | **Test Level / Note** |
| | | ESD | EN61000-4-2 | Level 2, ±8KV air, ±4KV contact |
| | | Radiated Susceptibility | EN61000-4-3 | Level 2, 3V/m |
| | | EFT/Burest | EN61000-4-4 | Level 1, 0.5KV |
| | | Surge | EN61000-4-5 | Level 1, 0.5KV Line-Line |
| | | Conducted | EN61000-4-6 | Level 2, 3V(e.m.f.) |
| | | Magnetic Field | EN61000-4-8 | Level 2, 3A/m |
| OTHERS | MTBF | Single output models: 2800Khrs ; Dual output models: 2100Khrs MIL-HDBK-217F(25℃) | | |
| | DIMENSION (L*W*H) | 21.8*9.2*11.1mm (0.86*0.36*0.44 inch) | | |
| | CASE MATERIAL | Non-Conductive black plastic (UL 94V-0 rated) | | |
| | PACKING | 4.8g | | |

**NOTE**

1. All parameters are specified at normal input(F:24Vdc, G:48Vdc), rated load, 25℃ 70% RH ambient.
2. Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1μf & 47μf capacitor.
3. Line regulation is measured from low line to high line at rated load.
4. Load regulation is measured from 10% to 100% rated load.
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 http://www.meanwell.com)

## ■ Mechanical Specification

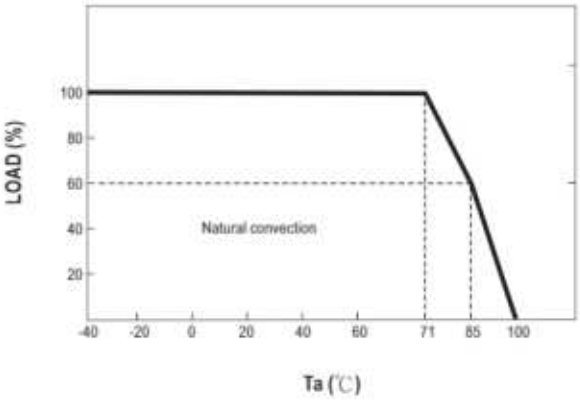
- All dimensions in mm(inch)
- Tolerance:x.x±0.5mm(x.xx±0.02")
- Pin pitch tolerance:±0.05mm (±0.002")




## ■ Plug Assignment

| Pin-Out | | |
|---|---|---|
| Pin No. | SPBW03 (Single output) | DPBW03 (Dual output) |
| 1 | -Vin | -Vin |
| 2 | +Vin | +Vin |
| 3 | R.C. | R.C. |
| 5 | N.C. | N.C. |
| 6 | +Vout | +Vout |
| 7 | -Vout | Common |
| 8 | N.C. | -Vout |

## ■ Derating Curve




## ■ Installation Manual

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