

■ Features

- SIP8 package with industry standard pinout
- 4:1 ultrawide input range
- Operating temperature range -40 ~ +85°C
- 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°C, 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 $\pm 5V/\pm 12V/\pm 15V$ 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 **P** **B** **W** **03** **F** **-** **12**

Output voltage (3.3/5/12/15Vdc, $\pm 5/\pm 12/\pm 15Vdc$)

Input voltage (F: 9~36Vdc, G: 18~75Vdc)

Rated wattage

Series name { S: Single output
D: Dual output



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

| 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% |
| 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

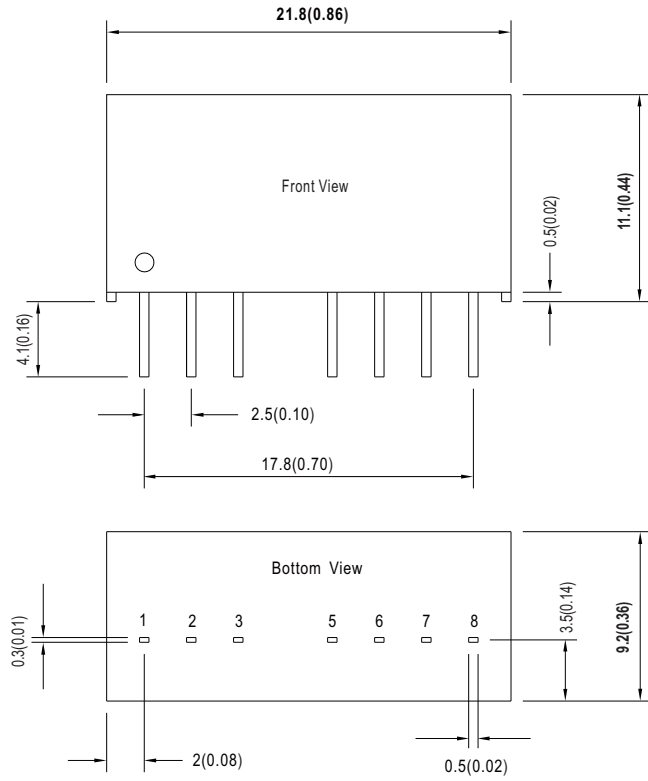


3W SIP Package DC-DC Regulated Converter **SPBW03 & DPBW03** series

| 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 <small>Note.2</small> | 50mVp-p | | |
| | LINE REGULATION <small>Note.3</small> | 0.5% | | |
| | LOAD REGULATION <small>Note.4</small> | 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°C (Refer to "Derating Curve") | | |
| | CASE TEMPERATURE | +100°C max. | | |
| | WORKING HUMIDITY | 20% ~ 90% RH non-condensing | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +125°C, 10 ~ 95% RH non-condensing | | |
| | TEMP. COEFFICIENT | 0.03% / °C (0 ~ 85°C) | | |
| | SOLDERING TEMPERATURE | 1.5mm from case of 1 ~ 3sec./260°C max. | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | |
| SAFETY & EMC (<small>Note.5</small>) | WITHSTAND VOLTAGE | I/P-O/P:1.5KVDC | | |
| | ISOLATION RESISTANCE | I/P-O/P:100M Ohms / 500VDC / 25°C / 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°C) | | |
| | 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 | <p>1.All parameters are specified at normal input(F:24Vdc, G:48Vdc), rated load, 25°C 70% RH ambient.</p> <p>2.Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf & 47µf capacitor.</p> <p>3.Line regulation is measured from low line to high line at rated load.</p> <p>4.Load regulation is measured from 10% to 100% rated load.</p> <p>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)</p> | | | |

■ Mechanical Specification

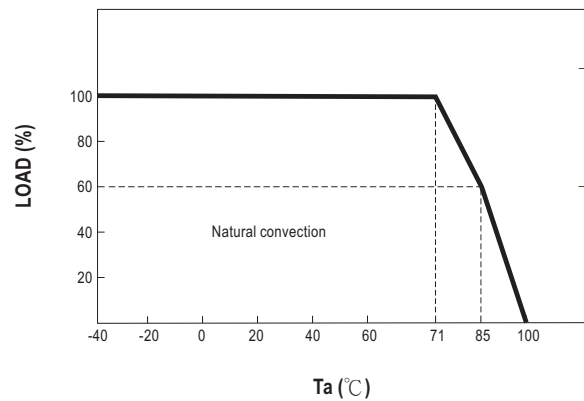
- All dimensions in mm (inch)
- Tolerance: $x.x \pm 0.5\text{mm}$ ($x.xx \pm 0.02''$)
- Pin pitch tolerance: $\pm 0.05\text{mm}$ ($\pm 0.002''$)



■ Plug Assignment

| Pin No. | Pin-Out | |
|---------|---------------------------|-------------------------|
| | 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>