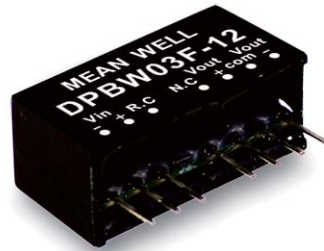
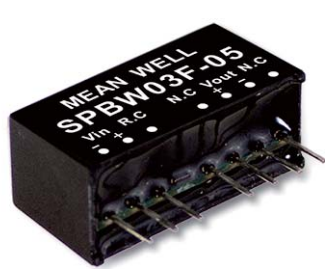




# 3W SIP Package DC-DC Regulated Converter **SPBW03 & DPBW03** series



## ■ Features

- SIP8 package with industry standard pinout
- 4:1 ultrawide input range
- Operating temperature range -40 ~ +85°C
- No minimum load required
- Comply to BS EN/EN55032 radiated Class A/B with 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

## ■ GTIN CODE

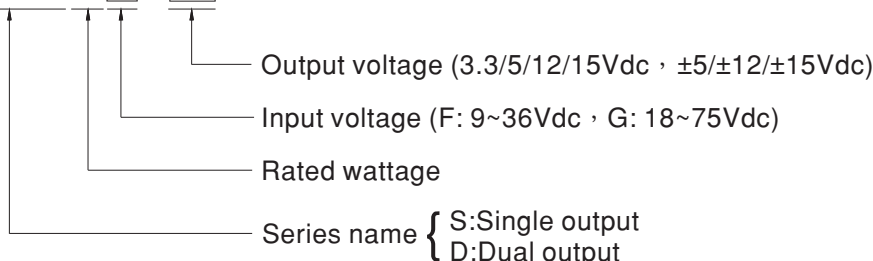
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

## ■ 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 BS EN/EN55032 radiated Class A/B with 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** **0** **3** **F** **-** **1** **2**





# 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%	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

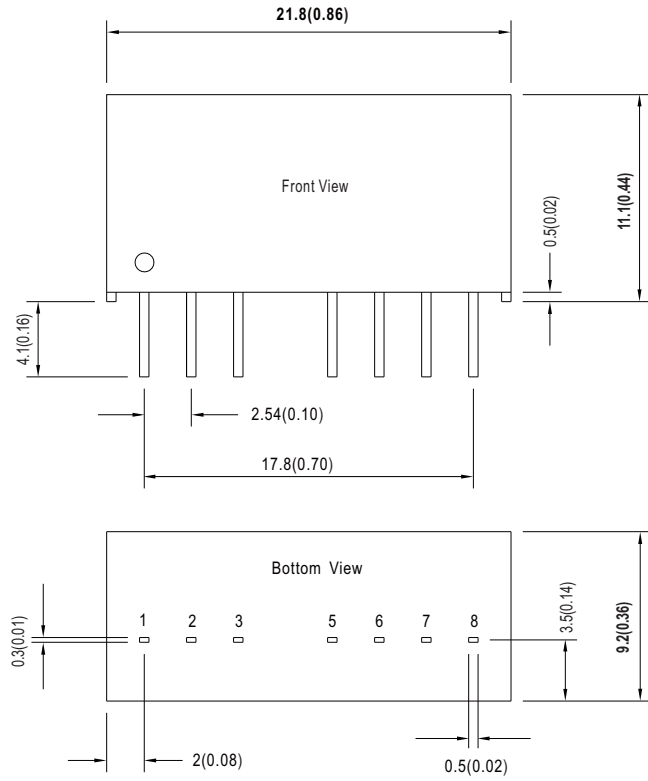


# 3W SIP Package DC-DC Regulated Converter **SPBW03 & DPBW03** series

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 (Note.5)	SAFETY STANDARDS	EAC TP TC 020/2011 (EAC TP TC 004 for 48Vin type only) approved		
	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	BS EN/EN55032(CISPR32)	Class A/B with external components
		Radiated	BS EN/EN55032(CISPR32)	Class A/B with external components
	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/Bursts	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	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	4.3g ; 14pcs/per tube, 2058pcs/147 tube/per carton		
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 &amp; noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf &amp; 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 <a href="http://www.meanwell.com">http://www.meanwell.com</a>)</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p>			

## ■ Mechanical Specification

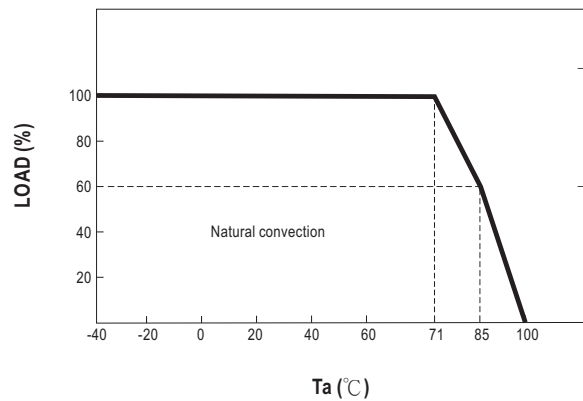
- All dimensions in mm(inch)
- Tolerance:  $x.x \pm 0.5\text{mm} (x.xx \pm 0.02")$
- Pin pitch tolerance:  $\pm 0.05\text{mm} (\pm 0.002")$



## ■ Plug Assignment

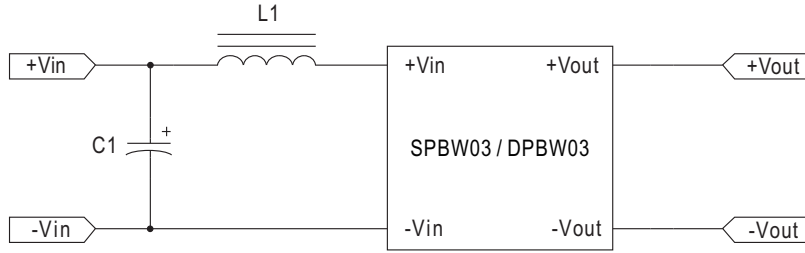
Pin-Out		
Pin No.	SPBW03 (Single output)	DPBW03 (Dual output)
1	-Vin	-Vin
2	+Vin	+Vin
3	R.C.	R.C.
5	N.C.	N.C.
6	+Vout	+Vout
7	-Vout	Common
8	N.C.	-Vout

## ■ Derating Curve



### EMC Suggestion Circuit

※ EMC Considerations EMI Test standard: EN55022 Class A and Class B Conducted Emission Test Condition:  
 Input Voltage: Nominal, Output Load: Full Load



Model No.	EN55022 class A		EN55022 class B	
	C1	L1	C1	L1
S(D)PBW03F	2.2 $\mu$ F/50V	10 $\mu$ H	6.8 $\mu$ F/50V	18 $\mu$ H
S(D)PBW03G	2.2 $\mu$ F/100V	15 $\mu$ H	2.2 $\mu$ F/100V	56 $\mu$ H

Note : All of capacitors are ceramic capacitors and 1210 size for EN55022 class A 、 1812 size for EN55022 class B

### Packing

Standard Tube Packing	MPQ Per Tube (PCS)	One Tube G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit: mm 	14	78.7g	2058	13.57Kg

### Installation Manual

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