

TPTC020



## ■ Features

- SIP6 package with industry standard pinout
- 8:1(9~75Vdc) ultra-wide input range
- Operating temperature range -40 ~ +95°C
- No minimum load required
- Comply to BS EN/EN55032 radiated Class A without additional components
- High efficiency up to 80%
- Protections: Short circuit (Continuous) / Overload / UVLO
- 1.5KVdc I/O isolation
- 3 years warranty

## ■ Applications

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

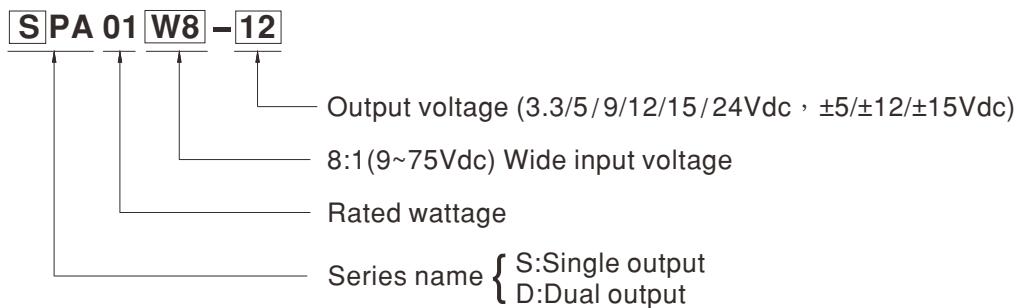
## ■ GTIN CODE

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

## ■ Description

SPA01W8 and DPA01W8 series are 1W isolated and regulated module type DC-DC converter with SIP6 package. It features international standard pins, a high efficiency up to 80%, wide working temperature range -40~+95°C, 1.5KVdc I/P-O/P isolation voltage, compliance to BS EN/EN55032 radiated class A without additional components, overload and continuous-mode short circuit protection, etc. The models account for 9~75Vdc 8:1 ultra-wide input range, and various output voltage, 3.3V/5V/9V/12V/15V/24V 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





1W SIP Package 8:1 Ultra-Wide Input DC-DC Regulated Converter

**SPA01W8 & DPA01W8** 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						
SPA01W8-03	Nominal 12V, 24V, 36V, 48V, 72V (9 ~ 75V)	3mA	54mA	3.3V	0 ~ 300mA	77%	220µF		
SPA01W8-05		4mA	53mA	5V	0 ~ 200mA	78%	220µF		
SPA01W8-09		5mA	53mA	9V	0 ~ 111mA	80%	47µF		
SPA01W8-12		5mA	53mA	12V	0 ~ 83mA	78%	47µF		
SPA01W8-15		5mA	53mA	15V	0 ~ 67mA	80%	47µF		
SPA01W8-24		7mA	55mA	24V	0 ~ 42mA	76%	47µF		
DPA01W8-05		5mA	53mA	±5V	±0 ~ 100mA	78%	*47µF		
DPA01W8-12		7mA	56mA	±12V	±0 ~ 42mA	76%	*47µF		
DPA01W8-15		8mA	54mA	±15V	±0 ~ 33mA	77%	*47µF		

\* For each output

## SPECIFICATION

### INPUT

VOLTAGE RANGE	9~75Vdc
SURGE VOLTAGE (100ms max.)	100Vdc
FILTER	Capacitor Network
PROTECTION	Fuse recommended. 400mA Slow-Blow Type.
INTERNAL POWER DISSIPATION	315mW

### OUTPUT

VOLTAGE ACCURACY	±2%
RATED POWER	1W
RIPPLE & NOISE Note.2	3.3~9V: 100mV Vp-p max. 12~24V: 1% Output Vp-p max.
LINE REGULATION Note.3	±0.5%
LOAD REGULATION Note.4	±1% for 3.3Vdc output ±0.5% for others output
CROSS REGULATION	±5% @ 25%~100% Load only dual output
SWITCHING FREQUENCY (Typ.)	330KHz

### PROTECTION

SHORT CIRCUIT	Protection type : Continuous, automatic recovery	
OVERLOAD	110 ~ 350% rated output power	
UNDER VOLTAGE LOCKOUT	Start-up voltage	8.8Vdc
	Shutdown voltage	8Vdc (Typ.)

### ENVIRONMENT

COOLING	Free-air convection		
WORKING TEMP.	-40 ~ +95°C (Refer to "Derating Curve")		
CASE TEMPERATURE	+110°C max.		
WORKING HUMIDITY	5% ~ 95% RH non-condensing		
STORAGE TEMP., HUMIDITY	-55 ~ +125°C, 10 ~ 95% RH non-condensing		
TEMP. COEFFICIENT	0.05% / °C (0 ~ 95°C)		
SOLDERING TEMPERATURE	1.5mm from case of 3 ~ 5sec./265°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 approved		
WITHSTAND VOLTAGE	I/P-O/P:1.5KVdc		
ISOLATION RESISTANCE	I/P-O/P:1000M Ohms / 500Vdc / 25°C / 70% RH		
ISOLATION CAPACITANCE (Typ.)	60pF		
EMC EMISSION	Parameter	Standard	Test Level / Note
	Conducted	BS EN/EN55032(CISPR32)	N/A
	Radiated	BS EN/EN55032(CISPR32)	Class A without additional components
EMC IMMUNITY	Parameter	Standard	Test Level / Note
	ESD	BS EN/EN61000-4-2	Level 3, ±8KV Air
	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 2, 0.5KV Line-Line
	Conducted	BS EN/EN61000-4-6	Level 2, 3V(e.m.f.)
	Magnetic Field	BS EN/EN61000-4-8	Level 1, 1A/m

### OTHERS

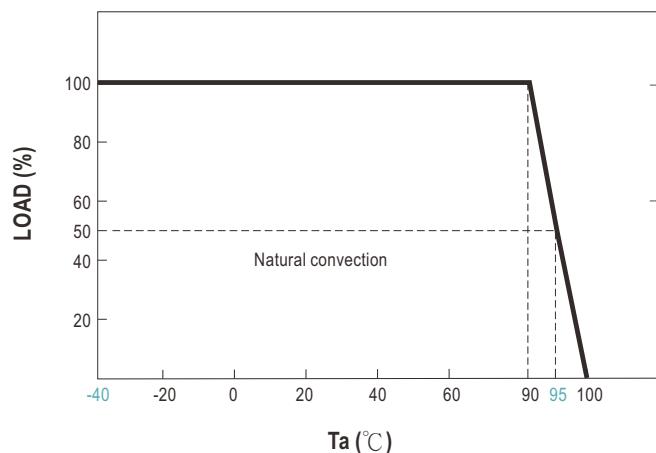
MTBF	>500Khrs MIL-HDBK-217F(25°C)		
DIMENSION (L*W*H)	17.4*7.75*11.1mm (0.69*0.3*0.44 inch)		
CASE MATERIAL	Non-Conductive black plastic (UL 94V-0 rated)		
PACKING	3g ; 28pcs/per tube, 2800pcs/100 tube/per carton		

### NOTE

- All parameters are specified at normal input(24Vdc), rated load, 25°C 70% RH ambient.
- Ripple & noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µF & 47µF capacitor.
- Line regulation is measured from low line to high line at rated load.
- Load regulation is measured from 0% to 100% rated load.
- The final equipment must be re-confirmed that it still meets 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>)

※ Product Liability Disclaimer : For detailed information, please refer to <https://www.meanwell.com/serviceDisclaimer.aspx>

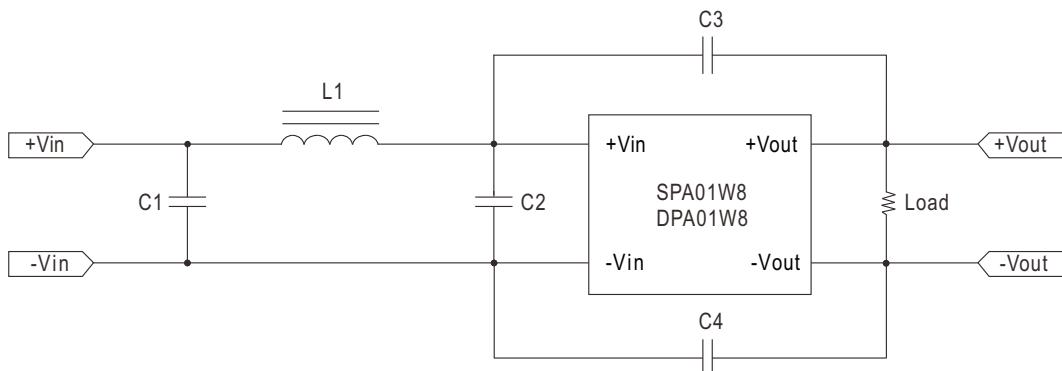
### ■ Derating Curve



### ■ EMC Suggestion Circuit

※ EMC Considerations EMI Test standard: BS EN/EN55032 Class B radiated test conditions recommendations:

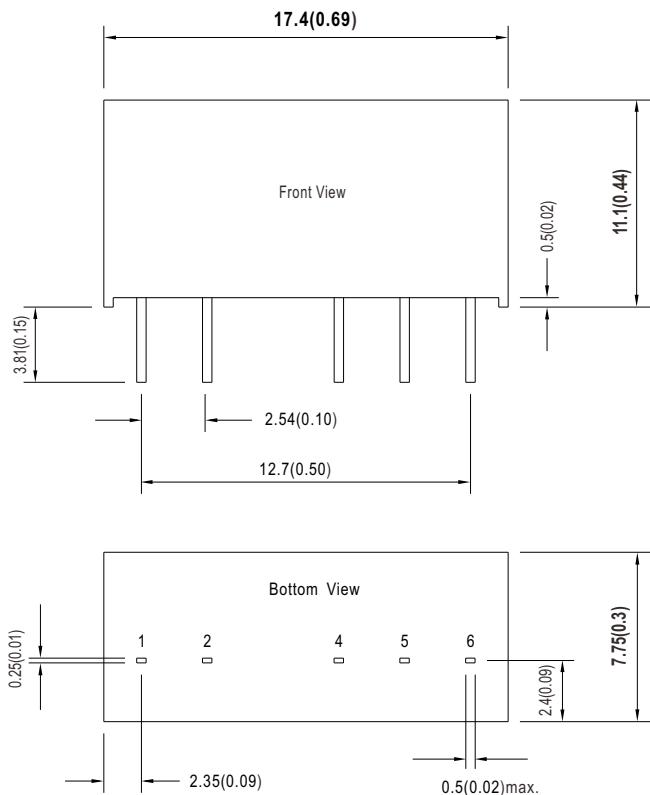
Input Voltage: Nominal, Output Load: Full Load



Model No.	BS EN/EN55032 Class B				
	C1	C2	C3	C4	L1
SPA01W8 DPA01W8	2.2μF/100V	2.2μF/100V	152/5KV	152/5KV	10μH

### ■ Mechanical Specification

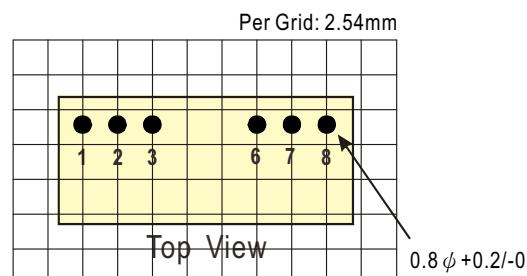
- All dimensions in mm(inch)
- Tolerance:  $x \pm 0.5\text{mm}(x.\text{xx} \pm 0.02")$   
 $x.\text{xx} \pm 0.25\text{mm}(x.\text{xxx} \pm 0.010")$
- Pin pitch tolerance:  $\pm 0.05\text{mm} (\pm 0.002")$



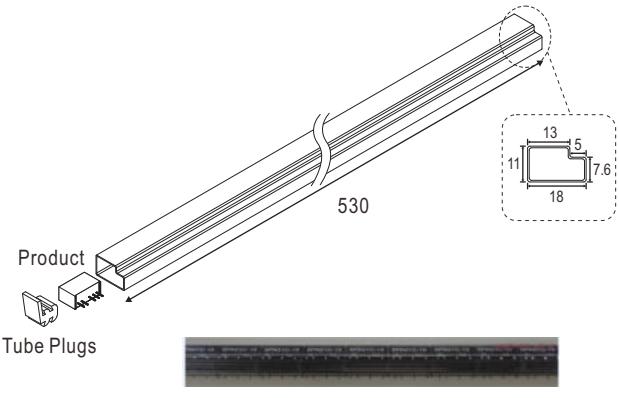
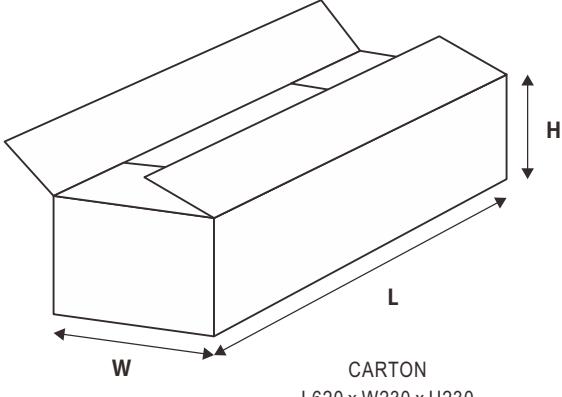
### ■ Plug Assignment

Pin-Out		
Pin No.	SPA01W8 (Single output)	DPA01W8 (Dual output)
1	-Vin	-Vin
2	+Vin	+Vin
4	+Vout	+Vout
5	N.P.	Common
6	-Vout	+Vout

\* N.P.: No PIN



## ■ Packing

Standard Tube Packing	MPQ Per Tube (PCS)	One Tube G.W.	Max. Q'TY/ Carton(PCS)	One Carton G.W.
Unit : mm   Tube pattern	28	140g	2800	14.8Kg
 CARTON L620 x W230 x H230				

## ■ Installation Manual

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