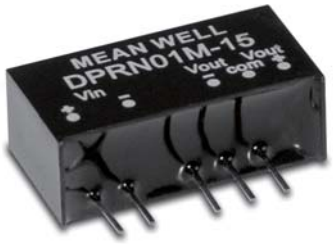
1W SIP Package DC-DC Regulated Converter SPRN01 & DPRN01 series



Automate Industrial Security Network Telecom

Features

- SIP6 package with industry standard pinout
- Operating temperature range -40 ~ +90℃
- Comply to EN55032 radiated Class B without additional components
- Protection: Short circuit
- 1.5KVDC I/O isolation
- Low cost
- 3 years warranty

Applications

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

Description

SPRN01 and DPRN01 series are 1W isolated and regulated module type DC-DC converter with SIP6 package. It features international standard pins, wide working temperature range -40~+90℃, 1.5KVDC I/P-O/P isolation voltage, compliance to EN55032 radiated Class B without additional components, short circuit protection, etc. The models account for different input voltage 5V/12V/24V/48V -5~+10%, and various output voltage, 5V/12V/15V for single output and ±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

SPRN01L–12

- 12: Output voltage (5/12/15Vdc，±12/±15Vdc)
- L: Input voltage (L: 4.75 ~ 5.5Vdc，M: 11.4 ~ 13.2Vdc，N: 22.8 ~ 26.4Vdc，O: 45.6 ~ 52.8Vdc)
- 01: Rated wattage
- SPRN: 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				
SPRN01L-05	Normal 5V (4.75 ~ 5.5V)	35mA	294mA	5V	0 ~ 200mA	68%	100μF
SPRN01L-12		38mA	285mA	12V	0 ~ 84mA	71%	100μF
SPRN01L-15		40mA	278mA	15V	0 ~ 67mA	71%	100μF
DPRN01L-12		40mA	305mA	±12V	±0 ~ 42mA	66%	*±47μF
DPRN01L-15		45mA	299mA	±15V	±0 ~ 34mA	67%	*±47μF
SPRN01M-05	Normal 12V (11.4 ~ 13.2V)	15mA	116mA	5V	0 ~ 200mA	72%	100μF
SPRN01M-12		18mA	118mA	12V	0 ~ 84mA	72%	100μF
SPRN01M-15		18mA	115mA	15V	0 ~ 67mA	73%	100μF
DPRN01M-12		18mA	124mA	±12V	±0 ~ 42mA	68%	*±47μF
DPRN01M-15		18mA	120mA	±15V	±0 ~ 34mA	69%	*±47μF
SPRN01N-05	Normal 24V (22.8 ~ 26.4V)	10mA	65mA	5V	0 ~ 200mA	67%	100μF
SPRN01N-12		10mA	60mA	12V	0 ~ 84mA	72%	100μF
SPRN01N-15		10mA	60mA	15V	0 ~ 67mA	73%	100μF
DPRN01N-12		10mA	63mA	±12V	±0 ~ 42mA	68%	*±47μF
DPRN01N-15		11mA	63mA	±15V	±0 ~ 34mA	68%	*±47μF
SPRN01O-05	Normal 48V (45.6 ~ 52.8V)	7mA	32mA	5V	0 ~ 200mA	67%	100μF
SPRN01O-12		7mA	32mA	12V	0 ~ 84mA	67%	100μF
SPRN01O-15		8mA	32mA	15V	0 ~ 67mA	67%	100μF
DPRN01O-12		8mA	35mA	±12V	±0 ~ 42mA	63%	*±47μF
DPRN01O-15		8mA	35mA	±15V	±0 ~ 34mA	63%	*±47μF

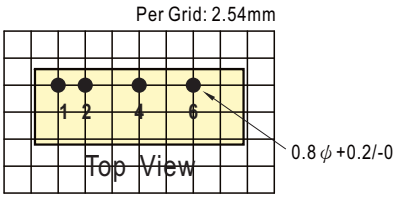
* For each output

1W SIP Package DC-DC Regulated Converter SPRN01 & DPRN01 series

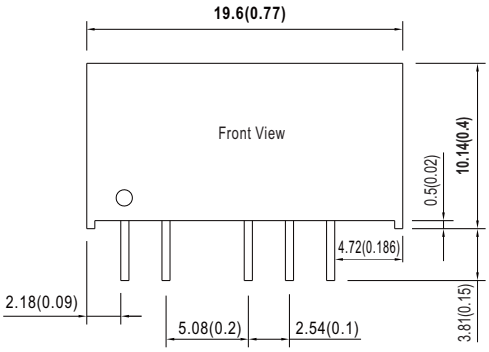
SPECIFICATION				
INPUT	VOLTAGE RANGE	L: 4.75 ~ 5.5Vdc , M: 11.4 ~ 13.2Vdc , N: 22.8 ~ 26.4Vdc , O: 45.6 ~ 52.8Vdc		
	SURGE VOLTAGE (100ms max.)	5Vin models : 9Vdc ; 12Vin models : 18Vdc ; 24Vin models : 30Vdc ; 48Vin models : 60Vdc		
	FILTER	Internal capacitor		
	PROTECTION	Fuse recommended. 5Vin models: 500mA, 12Vin models: 250mA, 24Vin models: 100mA, 48Vin models: 60mA		
	INTERNAL POWER DISSIPATION	600mW		
OUTPUT	VOLTAGE ACCURACY	±3.0%		
	RATED POWER	1W		
	RIPPLE & NOISE Note.2	75mVp-p		
	LINE REGULATION Note.3	±1.0%		
	LOAD REGULATION Note.4	±1.0%		
	SWITCHING FREQUENCY (Typ.)	110KHz		
PROTECTION	SHORT CIRCUIT	SPRN01: Current limit protection 60 sec. max., DPRN01: 1 sec. max.		
ENVIRONMENT	COOLING	Free-air convection		
	WORKING TEMP.	-40 ~ +90℃ (Refer to "Derating Curve")		
	CASE TEMPERATURE	+110℃ max.		
	WORKING HUMIDITY	20% ~ 90% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-55 ~ +125℃, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	0.05% / ℃ (0 ~ 71℃)		
	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)	SAFETY STANDARDS	EAC TP TC 004 approved		
	WITHSTAND VOLTAGE	I/P-O/P:1.5KVDC		
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH		
	ISOLATION CAPACITANCE (Typ.)	80pF		
	EMC EMISSION	**Parameter**	**Standard**	**Test Level / Note**
		Conducted	EN55032(CISPR32)	N/A
		Radiated	EN55032(CISPR32)	Class B
	EMC IMMUNITY	**Parameter**	**Standard**	**Test Level / Note**
		ESD	EN61000-4-2	Level 3, ±8KV air, Level 2, ±4KV contact
		Radiated Susceptibility	EN61000-4-3	Level 2, 3V/m
		EFT/Burest	EN61000-4-4	Level 1, 0.5KV at power, Level 2, 0.5KV at signal
		Surge	EN61000-4-5	Level 2, 0.5KV Line-Line, Level 2, 1KV Line ground
		Conducted	EN61000-4-6	Level 2, 3V(e.m.f.)
		Magnetic Field	EN61000-4-8	Level 1,1A/m
OTHERS	MTBF	1000Khrs MIL-HDBK-217F(25℃)		
	DIMENSION (L*W*H)	19.6*7.1*10.14mm (0.77*0.28*0.40 inch)		
	CASE MATERIAL	Non-Conductive black plastic (UL 94V-0 rated)		
	PACKING	2.5g		
NOTE	1.All parameters are specified at normal input(L:5Vdc, M:12Vdc, N:24Vdc, O: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)			

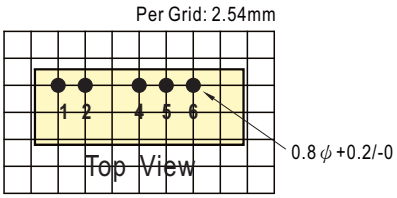
■ Mechanical Specification

- All dimensions in mm(inch)
- Tolerance:x.x±0.5mm(x.xx±0.02")
  x.xx±0.25mm(x.xxx±0.010")
- Pin pitch tolerance:±0.05mm (±0.002")

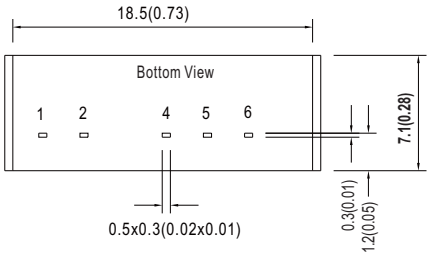


SPRN01
(Single Output)





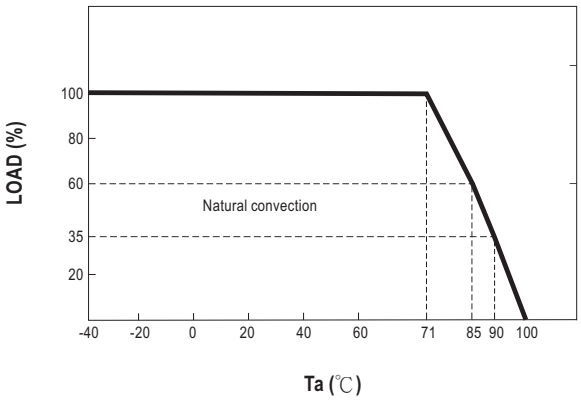
DPRN01
(Dual Output)



■ Pin Configuration

Pin-Out		
Pin No.	SPRN01 (Single output)	DPRN01 (Dual output)
1	+Vin	+Vin
2	-Vin	-Vin
4	-Vout	-Vout
5	No pin	Common
6	+Vout	+Vout

■ Derating Curve



■ Installation Manual

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