



## 1S8WE\_1RP series

1W - Single/Dual Output - Wide Input - Isolated & Regulated  
DC-DC Converter

## DC-DC Converter 1 Watt

- ⊕ Wide 2:1 input voltage range
- ⊕ Efficiency up to 85%
- ⊕ Regulated output types
- ⊕ I/O Isolation 1kVDC
- ⊕ Internal SMD construction
- ⊕ Operating temperature range: -40°C to +85°C
- ⊕ Continuous short circuit protection (SCP)
- ⊕ Industry standard pinout

The 1S8WE\_1RP series is a family of cost effective 1W single output DC-DC converters, specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is wide range (voltage range  $\leq 2:1$ )
- 2) Where isolation is necessary between input and output (isolation voltage  $\leq 1000\text{VDC}$ )
- 3) Where the regulation of the output voltage and the output ripple noise are demanded



Common specifications	
Short circuit protection:	Continuous
Cooling:	Free air convection
Operation temperature range:	-40°C ~ +85°C
Operating case temperature:	100°C max.
Storage temperature range:	-40°C ~ +125°C
Storage humidity range:	< 95%
Soldering temperature:	260°C max, 1.5mm from case for 10 sec
Switching frequency:	100kHz TYP
Temperature coefficient:	0.02%/°C typ.
Case material:	Non-conductive black plastic [UL94-V0]
Potting material:	Epoxy [UL94-V0]
MTBF (MIL-HDBK-217F):	>1500000 hours
Weight:	4.5g
Dimensions:	21.8x9.2x11.1mm

Input specifications					
Item	Test condition	Min	Typ	Max	Units
Input filter	Capacitor				

### Note:

1. All specifications measured at  $T_a = 25^\circ\text{C}$ , humidity <75%, nominal input voltage and rated output load unless otherwise specified.
2. Capacitive load: test by nominal input voltage and constant resistor load.
3. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
4. In this datasheet, all the test methods of indications are based on corporate standards.

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Output voltage accuracy	Nominal $V_{in}$ and full load			$\pm 3$	%	
Line regulation	$V_{in} = \text{min to max, full load}$			$\pm 0.5$	%	
Load regulation	20% to 100% full load			$\pm 0.8$	%	
Ripple & Noise	20MHz Bandwidth • 5V-9V models • 12V-24V models			100 1% of $V_{out}$	mVp-p mVp-p	
Transient response setting time	50% load step change		350		ms	

Isolation specifications					
Item	Test condition	Min	Typ	Max	Units
Isolation voltage		1000			VDC
Isolation resistance	500VDC, input to output	1000			MΩ

### Example:

**1S8WE\_0505S1RP**

1 = 1Watt; S8 = SIP8; W = wide input (2:1); E = cost effective; 5 - 9Vin; 5Vout; S = Single output; 1 = 1000VDC; R = Regulated output  
P = Short circuit protection

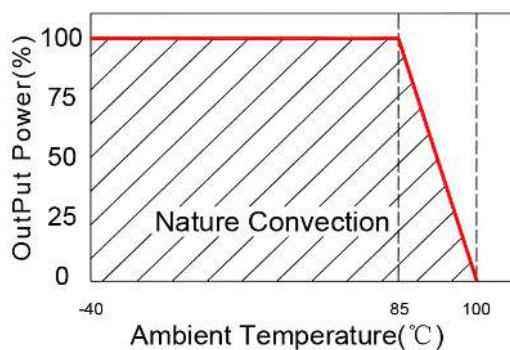
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Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, max]	Efficiency [%, typ]
1S8WE_0505S1RP	5-9	5	200	60
1S8WE_0509S1RP	5-9	9	111	70
1S8WE_0512S1RP	5-9	12	84	70
1S8WE_0515S1RP	5-9	15	67	70
1S8WE_0524S1RP	5-9	24	42	70
1S8WE_1205S1RP	9-18	5	200	70
1S8WE_1209S1RP	9-18	9	111	80
1S8WE_1212S1RP	9-18	12	84	80
1S8WE_1215S1RP	9-18	15	67	80
1S8WE_1224S1RP	9-18	24	42	80
1S8WE_2405S1RP	18-36	5	200	75
1S8WE_2409S1RP	18-36	9	111	80
1S8WE_2412S1RP	18-36	12	84	80
1S8WE_2415S1RP	18-36	15	67	80
1S8WE_2424S1RP	18-36	24	42	80
1S8WE_4805S1RP	36-72	5	200	70
1S8WE_4809S1RP	36-72	9	111	80
1S8WE_4812S1RP	36-72	12	84	80
1S8WE_4815S1RP	36-72	15	67	80
1S8WE_4824S1RP	36-72	24	42	80
1S8WE_0505D1RP	5-9	±5	±100	60
1S8WE_0509D1RP	5-9	±9	±56	70
1S8WE_0512D1RP	5-9	±12	±42	70
1S8WE_0515D1RP	5-9	±15	±34	70
1S8WE_0524D1RP	5-9	±24	±21	70
1S8WE_1205D1RP	9-18	±5	±100	70
1S8WE_1209D1RP	9-18	±9	±56	80
1S8WE_1212D1RP	9-18	±12	±42	80
1S8WE_1215D1RP	9-18	±15	±34	80
1S8WE_1224D1RP	9-18	±24	±21	80
1S8WE_2405D1RP	18-36	±5	±100	75
1S8WE_2409D1RP	18-36	±9	±56	80
1S8WE_2412D1RP	18-36	±12	±42	80
1S8WE_2415D1RP	18-36	±15	±34	80
1S8WE_2424D1RP	18-36	±24	±21	80
1S8WE_4805D1RP	36-72	±5	±100	70
1S8WE_4809D1RP	36-72	±9	±56	80
1S8WE_4812D1RP	36-72	±12	±42	80
1S8WE_4815D1RP	36-72	±15	±34	80
1S8WE_4824D1RP	36-72	±24	±21	80

## Typical characteristics

Temperature derating graph



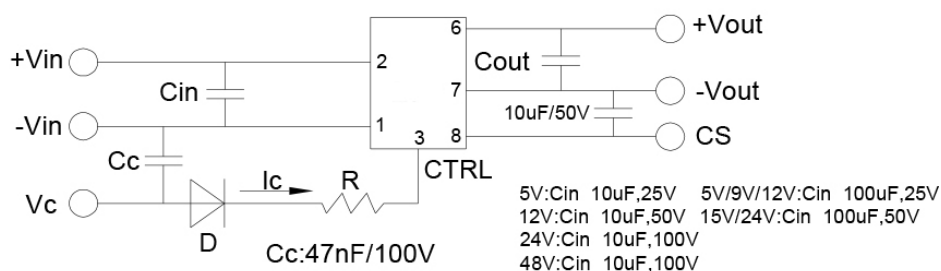
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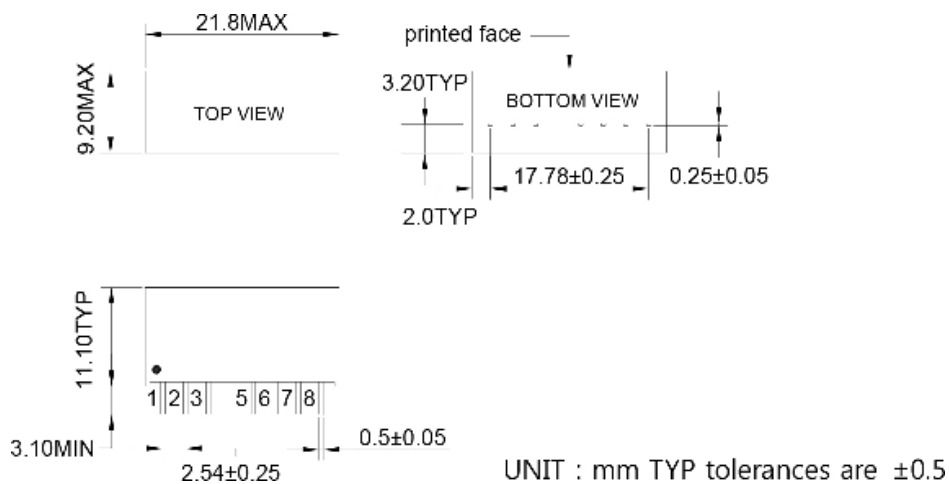
### Recommended test circuit

When open or high impedance, the converter works well; when this pin is ,high', the converter shut down. It should be note that the input current should be between 5-10mA, exceeding the maximum 20mA will cause permanent damage to the converter.

To make sure the product work at perfect operation status with full loading external capacitor is necessary and it is recommended to use high frequency low resistance electrolytic capacitor.



### Mechanical specifications



Pin number	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	Ctrl-Control input can (can be left open)	Ctrl-Control input can (can be left open)
5	NE-No external connection allowed	NE-No external connection allowed
6	+Vout	+Vout
7	-Vout	COM
8	CS Optional External capacitor	-Vout