

10W, Fixed input voltage, DC-DC converter



## FEATURES

- No-load input current as low as 25mA
- Operating ambient temperature range: -25°C to +71°C
- High efficiency up to 87%
- Continuous output voltage 0-1000V with linear adjustable function
- With voltage and current detection signal

### Patent Protection RoHS

*SHO1-P102-10F series offer 10W of output. The feature efficiencies of up to 87%, operating ambient temperature range -25°C to +71°C, which no-load input current as low as 25mA, and the output voltage 0-1000V is continuous and linear adjustable. They are mainly used in applications such as electricity, industrial control and instrumentation devices.*

## Selection Guide

Certification	Part No.	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA) Max./Min.	Full Load Efficiency(%) Min./Typ.
		Nominal (Range)	Nominal		
--	SHO1-P102-10F	24 (21.6-26.4)	1000	10/0	84/87

Note:  
①Unless otherwise specified, parameters in this datasheet were measured under the conditions of operating ambient temperature range with input voltage range and output load range.

## Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Start-up Voltage	Nominal input voltage	--	--	21.6	VDC
Input Current(full load/no-load)	Nomal temperature, nominal input voltage	--	479/25	496/50	mA
Input Filter Type		PI filter			

## Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Current Range	Reffer to Temperature Derating Curve	0	--	100	%Io
Output Voltage Accuracy	Normal temperature, input voltage range, 0%-100% load	--	±3	±5	%
Load Regulation		--	±0.2	±0.5	
Ripple&Noise	20MHz bandwidth, 0%-100% load	--	2	6	Vp-p
Linear Regulation	Full load, the input voltage is from low to high	--	±0.2	±0.5	%
Temperature Coefficient	Full load	--	--	±0.05	%/°C
Short-circuit Protection	Input voltage range	Output current-limiting protection, continuous			

### General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Operating Temperature	See Temperature Derating Curve	-25	--	71	°C
Storage Temperature		-45	--	85	
Storage Humidity	Non-condensing	5	--	95	%RH
Pin Soldering Resistance Temperature	Soldering spot is 1.5mm away from case for 10 seconds	--	--	300	°C
Altitude		Altitude: ≤5000m (Altitude ≤2000m, no derating; altitude is 5000m, derating to 40%)			
Switching Frequency	Nominal input voltage, full load	--	100	--	KHz
Adj Function(Output Voltage adjustment function)	Nominal input voltage	0-5V linear regulation, set the Adj pin voltage to set the output voltage of the product			
Vdis Function(Output voltage detection function)	Nominal input voltage	0-5V output voltage detection, the voltage value of Vdis reflects the output voltage value of the product in real time			
Idis Function(Output current detection function)	Nominal input voltage	0-5V output current detection, the voltage value of Idis reflects the output current value of the product in real time			

### Mechanical Specifications

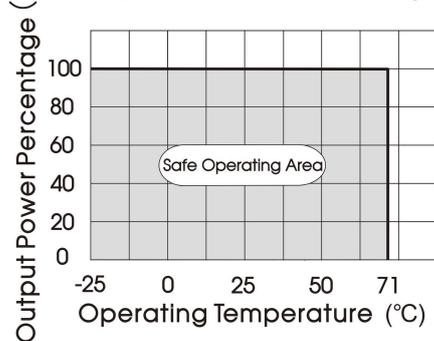
Case Material	Black plastic; flame-retardant and heat-resistant(UL94-V0)
Dimensions	62.00 x 45.00 x 22.50 mm
Weight	83g (Typ.)
Cooling Method	Free air convection

### Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS A(with extra components)(See Fig.2)		
	RE	CISPR32/EN55032 CLASS A(without extra components)		
Immunity	RS	IEC/EN61000-4-3	10V/m	perf. Criteria B
	CS	IEC/EN61000-4-6	3 Vr.m.s	perf. Criteria B

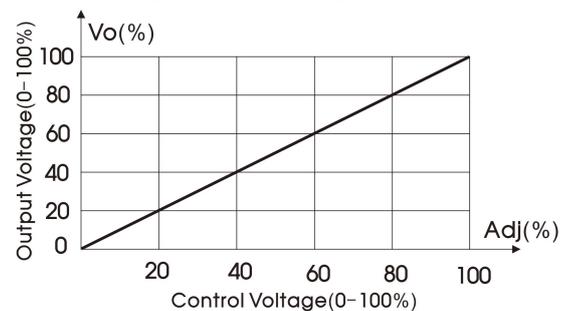
### Product Characteristic Curve

Temperature Derating Curve



Temperature Derating Curve

Output Voltage-Control Voltage relationship Curve



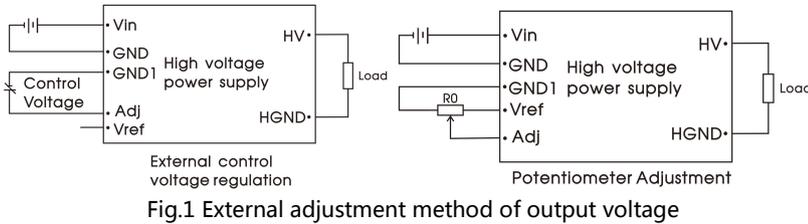
(Note: 100% Adj is equal to 5.0VDC (Typ.))

The relationship curve of output voltage and control voltage

## Design Reference

### 1. Typical application

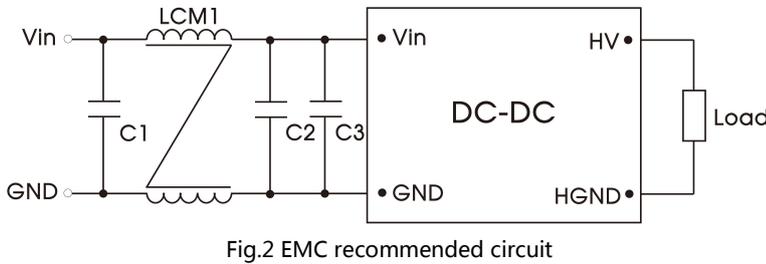
The output voltage of the product can be adjusted by an external circuit. There are two adjustment methods, as shown in Fig.1.



Parameter description:

R0	Adjustable resistance 10kΩ
Vref	5.15VDC
Control Voltage	0-5VDC

### 2. EMC compliance circuit



Parameter description:

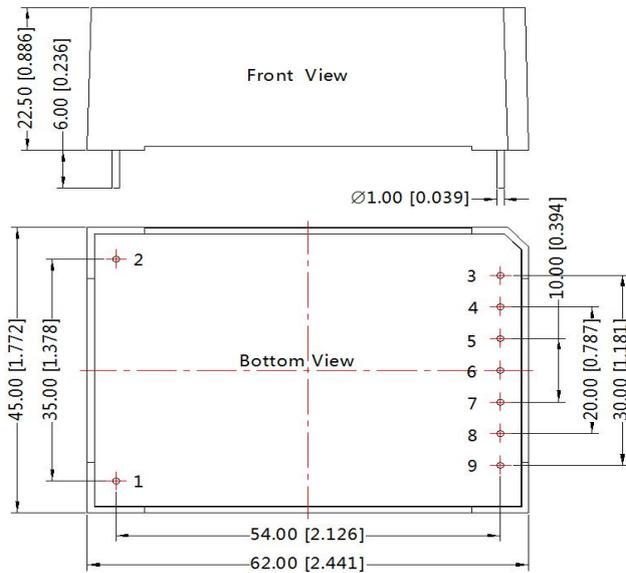
C1/C2/C3	475K/50V
LCM1	4.7mH (Optional FL2D-30-472 common mode filte)

3. For additional information please refer to DC-DC converter application notes on

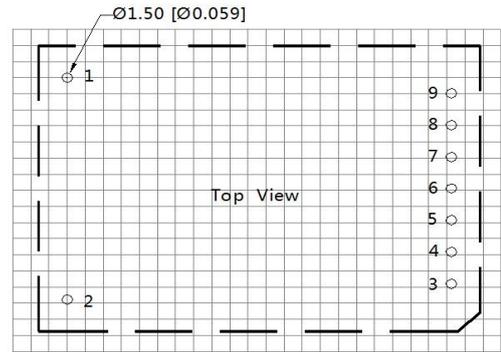
## Dimensions and Recommended Layout

SHO1-P102-10F product dimensions and pin functions

THIRD ANGLE PROJECTION



Note:  
Unit:mm[inch]  
Pin diameter tolerances:±0.10[±0.004]  
General tolerances:±0.50[±0.020]



Note: Grid 2.54\*2.54mm

Pin-Out	
Pin	Function
1	HGND
2	HV
3	Vin
4	GND
5	GND1
6	Adj
7	Vref
8	I <sub>dis</sub>
9	V <sub>dis</sub>

Notes:

1. For additional information on Product Packaging please refer to [www.schmid-m.com](http://www.schmid-m.com) . Packaging bag number: 58220091;
2. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
3. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity < 75%RH with nominal input voltage, nominal output voltage and rated output load;
4. All index testing methods in this datasheet are based on our company corporate standards;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see "Features" and "EMC";
7. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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