Non-isolated DC-DC converter
Fixed input voltage and regulated adjustable single high-voltage output

FEATURES

- No-load input current as low as 25mA
- Operating ambient temperature range: -40℃ to +85℃
- High efficiency up to 87%
- Continuous output voltage with linear adjustable function
- With voltage and current detection signal

Patent Protection RoHS 3 years Warranty

HO1-P102-xxF series offer 10W of output. The feature efficiencies of up to 87%, operating ambient temperature range -40℃ to +85℃, which no-load input current as low as 25mA, and the output voltage 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 ①(VDC) Nominal (Range)	Output Voltage (VDC) Nominal	Output Current (mA) Max./Min.	Full Load Efficiency②(%) Min./Typ.
--	HO1-P102-4F	24 (21.6-26.4)	1000	4/0	73/75
--	HO1-P102-8F	24 (21.6-26.4)	1010	8/0	80/84
--	HO1-P102-10F	24 (21.6-26.4)	1000	10/0	84/87

Note:
①Exceeding the maximum input voltage may cause permanent damage;
②Efficiency is measured at nominal input voltage and rated output load.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Start-up Voltage			--	--	21.6	VDC
Input Current (full load/no-load)	Normal temperature, nominal input voltage	HO1-P102-4F	--	222/25	228/50	mA
		HO1-P102-8F	--	401/25	421/50	
		HO1-P102-10F	--	479/25	496/50	
Input Filter Type			PI filter			
Hot Plug			Unavailable			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Normal temperature, input voltage range, 0%-100% load	HO1-P102-4F & HO1-P102-8F	--	±2	±3	%
		HO1-P102-10F	--	±3	±5	
Linear Regulation	Full load, the input voltage is from low to high		--	±0.2	±0.5	%
Load Regulation	Normal temperature, nominal input voltage, 0%-100% load		--	±0.2	±0.5	
Ripple&Noise	20MHz bandwidth, 0%-100% load	HO1-P102-4F	--	0.2	0.3	V
		HO1-P102-8F & HO1-P102-10F	--	2	6	
Temperature Coefficient	Full load		--	--	±0.05	%/℃
Short-circuit Protection	Input voltage range	HO1-P102-4F & HO1-P102-10F	Output current-limiting protection, continuous			
		HO1-P102-8F	--	10	--	mA
			Output constant current protection			

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Operating Temperature	See Temperature Derating Curve	HO1-P102-4F & HO1-P102-8F	-40	--	+85	℃
		HO1-P102-10F	-25	--	71	
Storage Temperature	HO1-P102-4F & HO1-P102-8F		-55	--	+125	
	HO1-P102-10F		-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	℃
Altitude			Altitude: ≤5000m (Altitude ≤2000m, no derating; altitude is 5000m, derating to 60%)			
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.5)	
	RE	HO1-P102-8F & HO1-P102-10F	CISPR32/EN55032 CLASS A(without extra components)
		HO1-P102-4F	CISPR32/EN55032 CLASS A(with extra components)(See Fig.5)
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

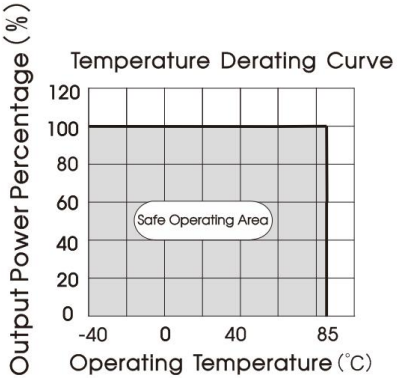


Fig.1 HO1-P102-4F & HO1-P102-8F Temperature Derating Curve

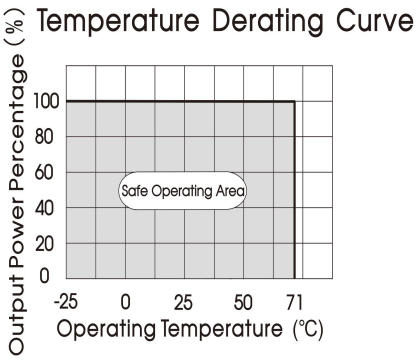


Fig.2 HO1-P102-10F Temperature Derating Curve

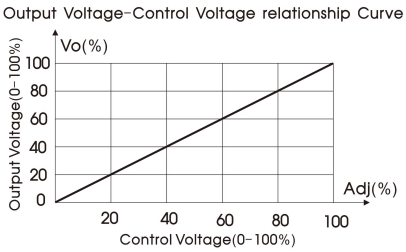


Fig.3 The relationship curve of output voltage and control voltage
(Note: 100% Adj is equal to 5.0VDC (Typ.))

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.4.

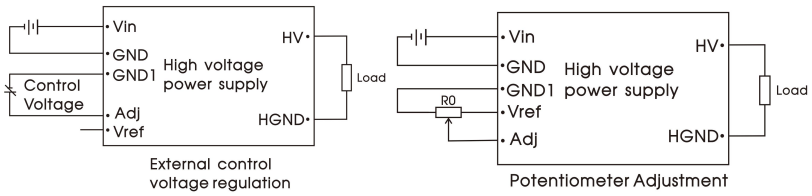


Fig.4 External adjustment method of output voltage

Parameter description:

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

2. EMC compliance circuit

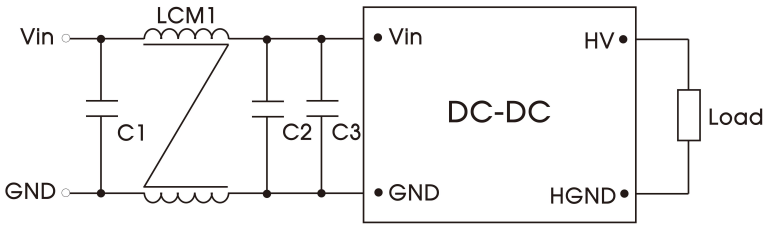


Fig.5 EMC recommended circuit

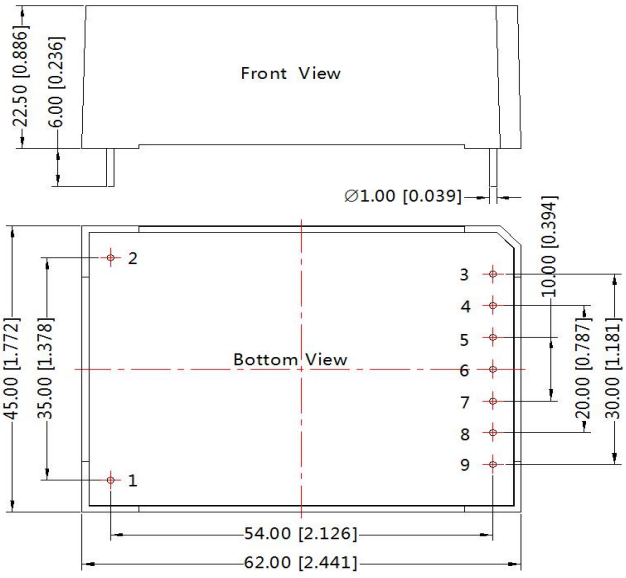
Parameter description:

C1/C2/C3	475K/50V
LCM1	4.7mH (Mornsun common mode filter recommended, FL2D-30-472)

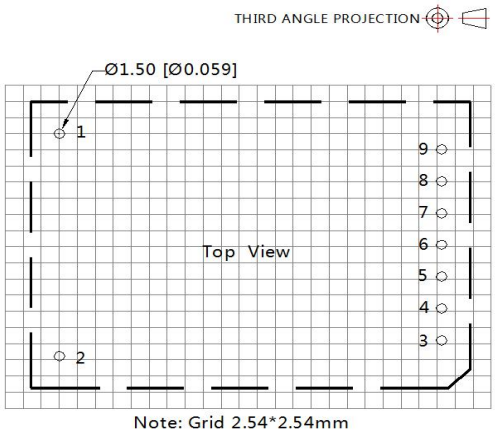
3. For additional information please refer to DC-DC converter application notes on www.mornsun-power.com

Dimensions and Recommended Layout

product dimensions and pin functions



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	Idis
9	Vdis

Notes:

1. For additional information please refer to Product Packaging Information. 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 Ta=25℃, 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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