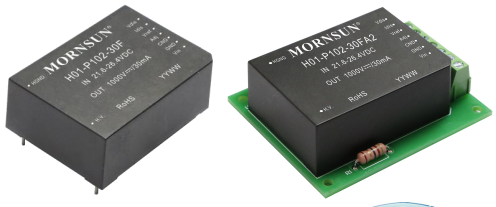
30W, Fixed input voltage, DC-DC converter



Patent Protection RoHS

FEATURES

- No-load input current as low as 14mA
- Operating ambient temperature range: -25℃ to +65℃
- High efficiency up to 90%
- Continuous output voltage 0-1000V with linear adjustable function
- With voltage and current detection signal

HO1-P102-30F(A2) series offer 30W of output. The feature efficiencies of up to 90%, operating ambient temperature range -25℃ to +65℃, which no-load input current as low as 14mA, 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		
--	HO1-P102-30F(A2)	24 (21.6-26.4)	1000	30/0	86/90

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	--	1389/14	1453/30	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		--	±0.5	±1	
Ripple&Noise	20MHz bandwidth, 0%-100% load	--	3	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	%/℃
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	--	65	℃
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	℃
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			

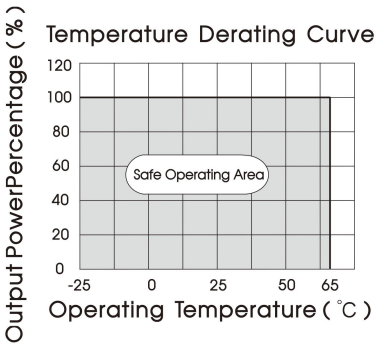
Mechanical Specifications

Case Material	Black plastic; flame-retardant and heat-resistant(UL94-V0)	
Dimensions	HO1-P102-30F	62.00 x 45.00 x 22.50 mm
	HO1-P102-30F(A2)	76.00 x 64.50 x 26.50 mm
Weight	HO1-P102-30F	83g（Typ.）
	HO1-P102-30F(A2)	116g（Typ.）
Cooling Method	Free air convection	

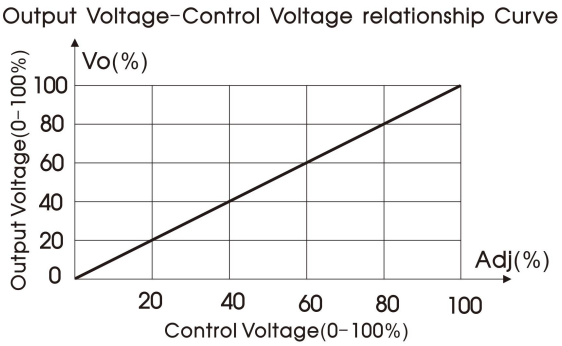
Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS A(with extra components)(See Fig.2)	
	RE	CISPR32/EN55032 CLASS A(without extra components)	
	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



(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.

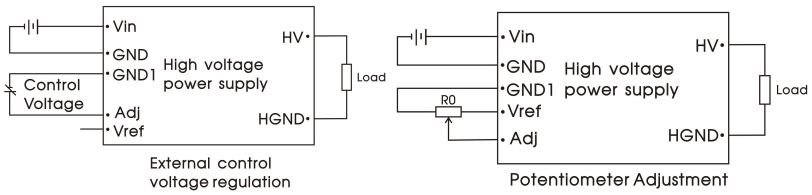


Fig.1 External adjustment method of output voltage

Parameter description:

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

2. EMC compliance circuit

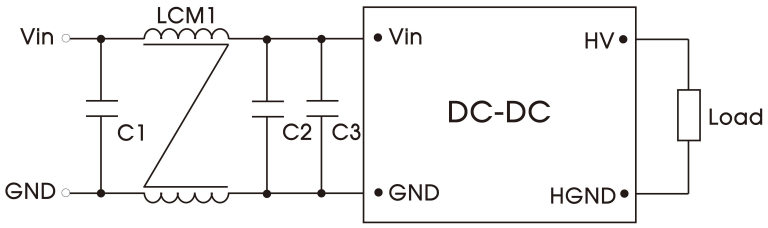


Fig.2 EMC recommended circuit

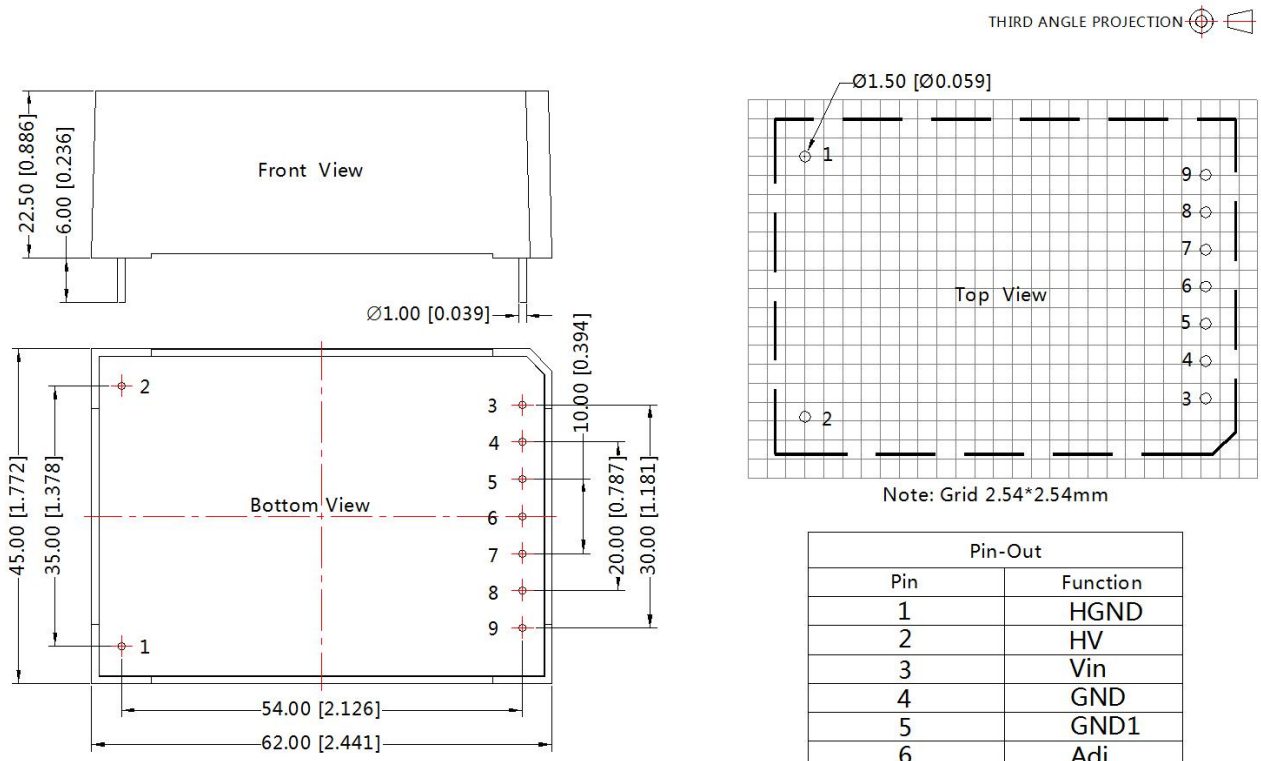
Parameter description:

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 www.mornsun.cn

Dimensions and Recommended Layout

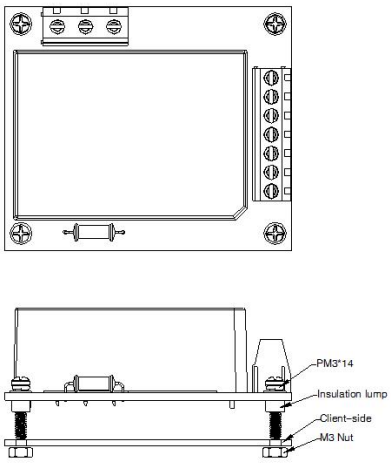
HO1-P102-30F product dimensions and pin functions



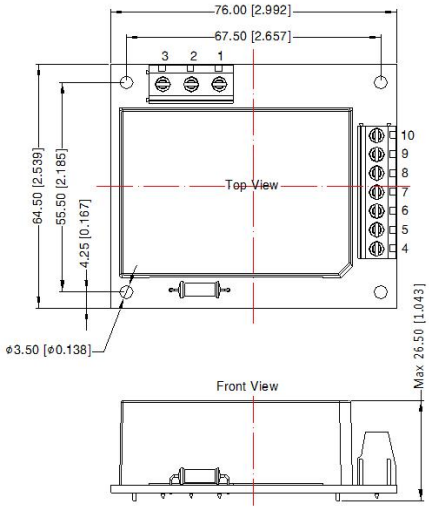
Note:
Unit:mm[inch]
Pin diameter tolerances:±0.10[±0.004]
General tolerances:±0.50[±0.020]

Pin-Out	
Pin	Function
1	HGND
2	HV
3	Vin
4	GND
5	GND1
6	Adj
7	Vref
8	Idis
9	Vdis

HO1-P102-30FA2 product dimensions and pin functions



Assemble sketch map



THIRD ANGLE PROJECTION

Pin-Out	
Pin	Function
1	HV
2	NC
3	HGND
4	Vin
5	GND
6	GND1
7	Adj
8	Vref
9	Idis
10	Vdis

Note :
Unit: mm[inch]
Pin diameter tolerances: ±0.10[±0.004]
General tolerances: ±1.0[±0.040]
The layout of the device is for reference only, please refer to the actual product

Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58220091, 58200079 (A2 expanded packaging);
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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