

Isolated single proportional adjustable high-voltage output DC-DC module power supply.



Patent Protection RoHS

## FEATURES

- Output voltage is continuously adjustable in linear proportion to the input voltage
- Low ripple noise
- 3500VDC isolation voltage
- Operating ambient temperature range: -40°C to +85°C
- EMI meet CISPR32/EN55032 CLASS B

HO1-P(N)602-0.25C Series offer 1.5W of output, with operating ambient temperature range -40°C to +85°C, isolation voltage 3500VDC, and output voltage follows input voltage linearly proportional continuously adjustable, which are specifically designed for applications in board power systems where high voltages are required and output voltage accuracy is critical. They are widely used in fields such as light spectrum, mass spectrum, electron beam, ion beam, avalanche diodes, electrophoresis, capacitor charging.

## Selection Guide

Certification	Part No.	Input Voltage (VDC)	Input Current (mA) <sup>①</sup> Full load/No-load		Output Voltage (VDC)		Output Current (mA) Max./Min.
		Nominal (Range)	Typ.	Max.	Nominal	Range	
--	HO1-P602-0.25C	12	220/60	250/80	6000	0 ~ 6000	0.25/0
	HO1-N602-0.25C	(0.7-12)			-6000	-6000 ~ 0	

Note:

① At the nominal input / output voltage.

## Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Surge Voltage (1sec. max.)	100% load	--	--	14	VDC
Input Filter Type		PI filter			
Hot Plug		Unavailable			

## Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Voltage Accuracy	Room temperature, nominal output, 100% load	--	±3	±8	%
Ripple & Noise	20MHz bandwidth, Input voltage range, 0%-100% load	--	0.5	1.5	%Vo

## General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation voltage	Electric Strength Test for 1 minute with a leakage current of 1mA max. for input/output	3500	--	--	VDC
Insulation capacitance	Input/output, 100KHz/0.1V	--	1100	--	pF
Operating Temperature	See Fig. 1	-40	--	+85	°C
Storage Temperature		-55	--	+125	
Storage Humidity	Non-condensing	5	--	85	%RH
Pin Soldering Resistance Temperature	Soldering spot is 1.5mm away from case for 10 seconds	--	--	300	°C
Vibration		10-150Hz, 5G, 0.75mm. along X, Y and Z			
Switching Frequency	Nominal input voltage, full load	--	140	--	kHz
MTBF	MIL-HDBK-217F@25°C	1000	--	--	k hours

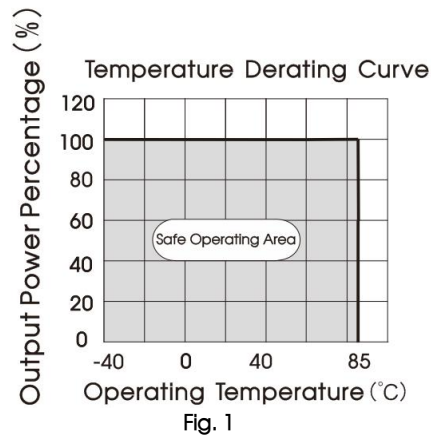
## Mechanical Specifications

Case Material	Black flame retardant heat-resistant plastic (UL94 V-0)
Dimensions	38.10 x 38.10 x 16.00 mm
Weight	30.0g (Typ.)
Cooling Method	Free air convection

## Electromagnetic Compatibility (EMC)

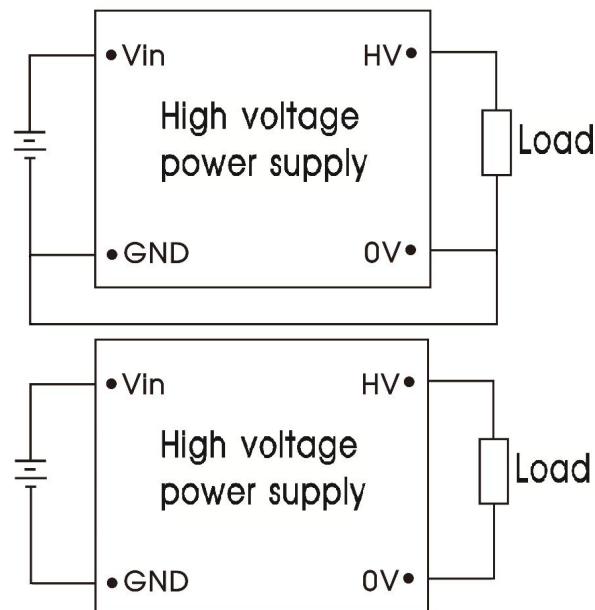
Emissions	CE	CISPR32/EN55032 CLASS B (see Fig.4 for recommended circuit)		
	RE			
Immunity	ESD	IEC/EN61000-4-2	Contact $\pm 4\text{kV}$	perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria B
	EFT	IEC/EN61000-4-4	100KHz $\pm 2\text{kV}$ (see Fig.4 for recommended circuit)	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line $\pm 2\text{kV}$ (see Fig.4 for recommended circuit)	perf. Criteria B
	CS	IEC/EN61000-4-6	3 Vr.m.s	perf. Criteria B

## Product Characteristic Curve



## Design Reference

### 1. Typical application



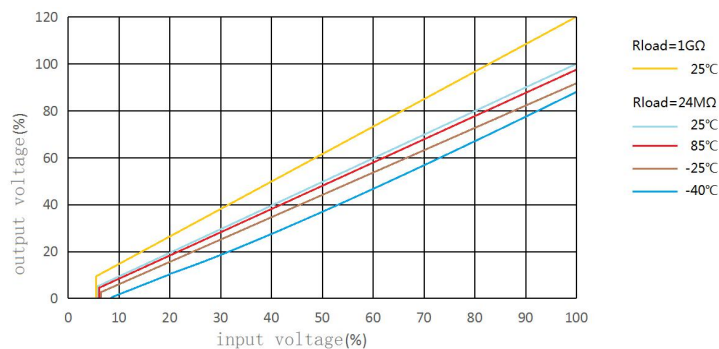


Fig. 3 Relation curve between output voltage and input voltage

## 2. EMC compliance circuit

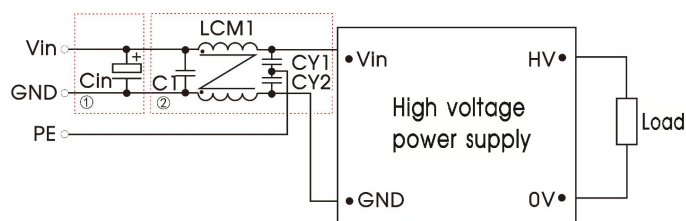


Fig. 4

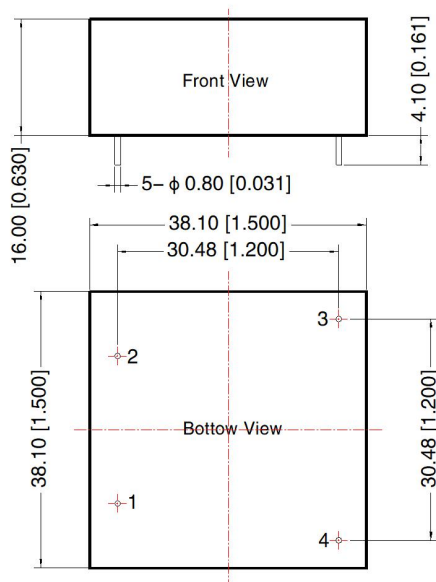
Notes: For EMS tests we use Part ① in Fig. 3 for immunity and part ② for emissions test.

Parameter description:

Cin	4700μF/50V Aluminum electrolytic capacitor
C1	22μF/25V MLCC capacitor
LCM1	22mH (MORNSUN common mode filter: FL2D-Z5-223)
CY1, CY2	2.2nF Y2 capacitor

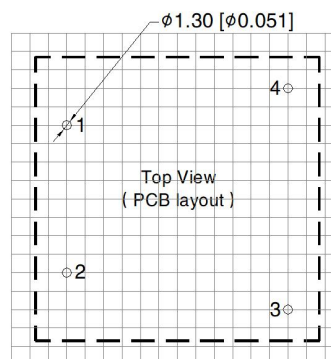
3. For additional information please refer to DC-DC converter application notes on [www.mornsun.cn](http://www.mornsun.cn)

## Dimensions and Recommended Layout



Note:  
Unit: mm[inch]  
Pin section tolerances:  $\pm 0.10 [\pm 0.004]$   
General tolerances:  $\pm 0.50 [\pm 0.020]$   
The layout of the device is for reference only, please refer to the actual product

THIRD ANGLE PROJECTION



Note: Grid 2.54\*2.54mm

Pin-Out		
Pin	Positive	Negative
1	GND	GND
2	VIN	VIN
3	HV	0V
4	0V	HV

Notes:

1. For additional information please refer to Product Packaging Information. Packaging bag number: 58200037;
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 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;
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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