DC/DC Converter
HO1-P(N)602-0.25C Series

MORNSUN®

Isolated single proportional adjustable HV output DC-DC Converter



Patented RoHS

FEATURES

- Output voltage follows input voltage proportionally
- Low output voltage ripple and noise
- Ambient temperature range: -25℃ to +85℃
- 3500VDC isolation voltage
- EMI meets CISPR32/EN55032 CLASS B

HO1-P(N)602-0.25C series offer 1.5W of output, with operating temperature range -25℃ to +85℃, isolation voltage 3500VDC, output voltage follows input voltage with linear proportional continuous adjustment, specifically designed for applications in board power systems where high voltages are required and output voltage needs linear continuous adjustment. They are widely used in high-voltage applications such as light spectrum, mass spectrum, electron beam, ion beam, electrophoresis, capacitor charging.

Selection Guide

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

Note: ① At the nominal input voltage and nominal output voltage.

Input Specifications

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

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output 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	Input-output, test time 1 minute, leakage current less than 1mA	3500	--	--	VDC
Isolation Capacitance	Input-output, 100KHz/0.1V	--	1100	--	pF
Operating Temperature	See Fig. 1	-25	--	+85	℃
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	℃
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℃		1000	--	--	k hours

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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)

EMI	CE	CISPR32/EN55032	CLASS B (see Fig. 4 for recommended circuit)	
	RE			
EMS	ESD	IEC/EN61000-4-2	Contact ±4kV	perf. Criteria B
	RS	IEC/EN61000-4-3	10V/m	perf. Criteria B
	EFT	IEC/EN61000-4-4	100KHz ±2kV (see Fig. 4 for recommended circuit)	perf. Criteria B
	Surge	IEC/EN61000-4-5	line to line ±2kV (see Fig. 4 for recommended circuit)	perf. Criteria B
	CS	IEC/EN61000-4-6	3Vr.m.s	perf. Criteria B

Product Characteristic Curve

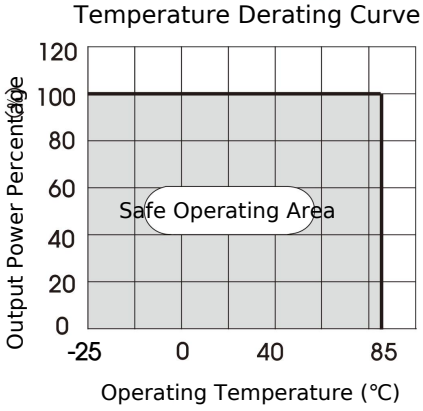


Fig. 1

Design Reference

1. Typical application

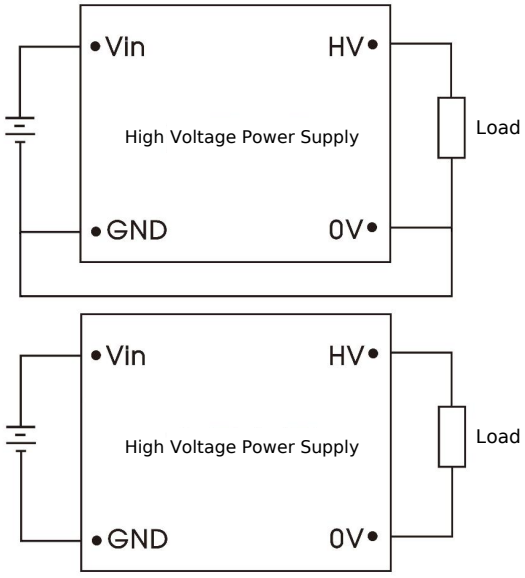


Fig. 2

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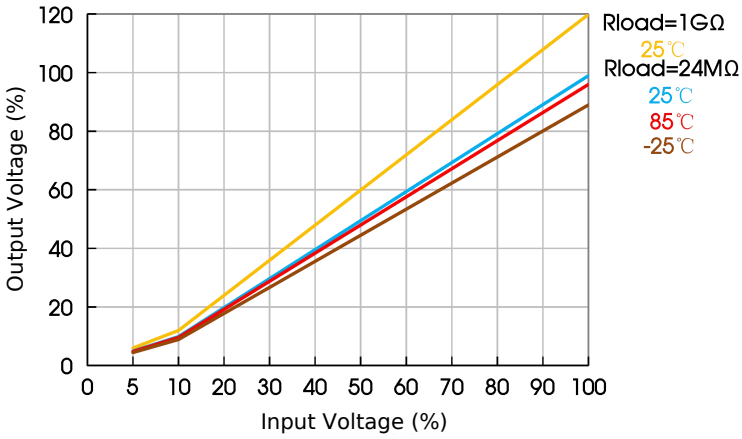


Fig. 3 The relationship curve of output voltage and input voltage

2. EMC compliance circuit

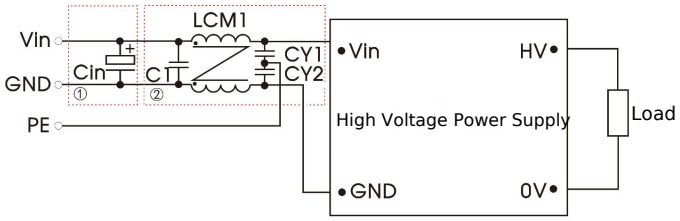


Fig. 4

Parameter description:

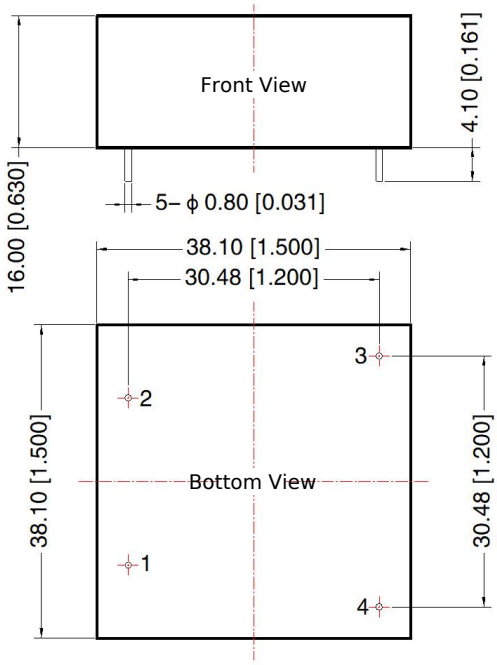
Cin	4700μF/50V Aluminum electrolytic capacitor
C1	22μF/25V MLCC capacitor
LCM1	22mH (FL2D-Z5-223 common-mode filter can be selected from our company)
CY1, CY2	2.2nF Y2 capacitor

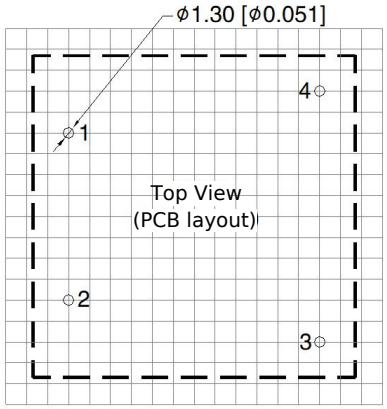
Note: Part ① in Fig. 3 is used for EMS test; part ② is used for EMI filtering.

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

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION





Note: Grid distance is 2.54*2.54mm

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

Note:
Unit: mm[inch]
Terminal diameter tolerance: ±0.10[±0.004]
General tolerances: ±0.50[±0.020]
Device layout is for reference only, subject to the actual product

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Note: 1. For additional information on Product Packaging, 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 this 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 and stored according to ISO14001 and related environmental laws and regulations after being scrapped, and shall be handled by qualified units.

MORNSUN Guangzhou Science & Technology Co., Ltd.

Address: No. 8 Nanyun 4th Road, Huangpu District, Guangzhou, China

Tel: 86-20-38601850 Fax: 86-20-38601272 E-mail: sales@mornsun.cn

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