

1W isolated DC-DC converter

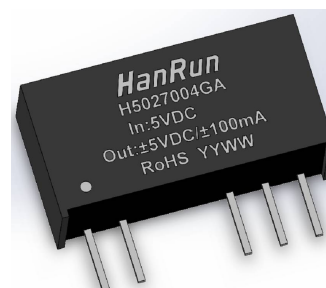
Fixed input voltage, unregulated dual output



H5027004GA

Features :

- I/O isolation test voltage: 3000VDC
- Continuous short-circuit protection
- High efficiency up to 88%
- Capacitive Load: 1200 μ F Max.
- Industry standard pin-out
- Operating ambient temperature range: -40°C to $+105^{\circ}\text{C}$
- Designed to Comply with EN 62368-1, IEC 62368-1



This model is specially designed for applications where an isolated voltage is required in a distributed power supply system. It is suitable for: pure digital circuits, low frequency analog circuits, relay-driven circuits and data switching circuits.

Input Specifications					
Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	DC Input	4.5	5	5.5	V
Input Current	Vin=5VDC, Io=0mA	—	6	9	mA
Input Current	Vin=5VDC, Io1=+100mA;Io2=-100mA	—	230	242	mA
Reflected Ripple Current		—	15	—	mA
Surge Voltage (1sec. max.)	DC Input	-0.3	—	9	V
Input Filter		Capacitance filter			
Hot Plug		Unavailable			

Output Specifications					
Item	Operating Conditions	Min.	Typ.	Max.	Unit
DC Output Current	Nominal Input Voltage	±10	—	±100	mA
DC Output Voltage	Vin=5VDC, Io1=+100mA;Io2=-100mA	—	±5	—	VDC
Ouput Voltage Accuracy	See output regulation curves (Fig. 1)				
Line Regulation	Input voltage change: ±1%	—	—	1.2	%/%
Load Regulation	5VDC input,10%–100% load	—	10	15	%
Temperature Coefficient	Full load	—	±0.02	—	%/°C
Ripple & Noise	20MHz bandwidth (parallel cable method)	—	30	75	mVp-p
Short circuit Protection	Continuous, self-recovery				
Note:* The “parallel cable” method is used for Ripple and Noise test.					

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General Specifications							
Item		Operating Conditions		Min.	Typ.	Max.	Unit
Isolation Voltage	Input to output, test for 60 second with 1 mA Max			3000	—	—	VDC
Insulation Resistance	Input to output,at 500VDC			1000	—	—	Mohm
Isolation capacitor	Input to output,100KHz 0.1V			—	20	—	pF
Operating Temperature	Derating when operating temperature≥85℃,(see Fig. 2)			−40	—	+105	℃
Storage Temperature				−55	—	+125	℃
Storage Humidity	Non—condensing			5	—	95	%
Case Temperature Rise	Ta=25℃, nominal input voltage, full load			—	25	—	℃
Switching Frequency	full load,noamal input voltage			—	360	—	KHz
Efficiency	5V Input, Full load			78	82	—	%
Pin Soldering Resistance Temperature	Soldering spot is 1.5mm away from case for 10s seconds			—	—	300	℃
Capacitive Load	5V Input, Full load			—	—	1200	μF
Safety Standard	Safety Standard			EN 62368—1,IEC 62368—1			
MTBF	MIL—HDBK—217F@25℃			3500	—	—	Khours

Physical Specifications		
Casing Material	Black plastic; flame-retardant and heat-resistant (UL94 V-0)	
Epoxy	Black ,UL94 V-0	
Dimensions	19.50 x 6.05 x 10.05 mm	
Weight	2.0g (typ.)	
Cooling Method	Free air convection	

Electromagnetic Compatibility (EMC)		
Emissions	CE	CISPR32/EN55032 CLASS B (see Fig.8 for recommended circuit)
	RE	CISPR32/EN55032 CLASS B (see Fig.8 for recommended circuit)
Immunity	ESD	IEC/EN61000-4-2 Air $\pm 8\text{kV}$, Contact $\pm 6\text{kV}$ perf. Criteria B

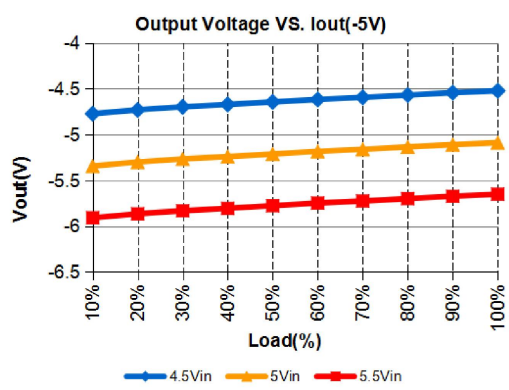
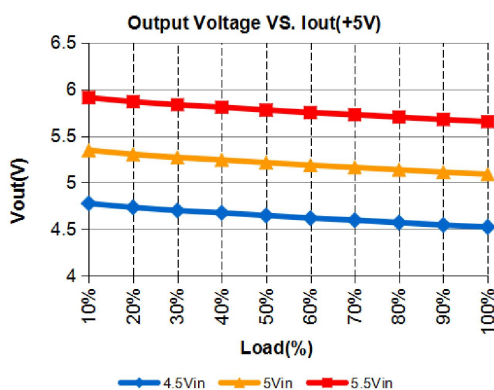
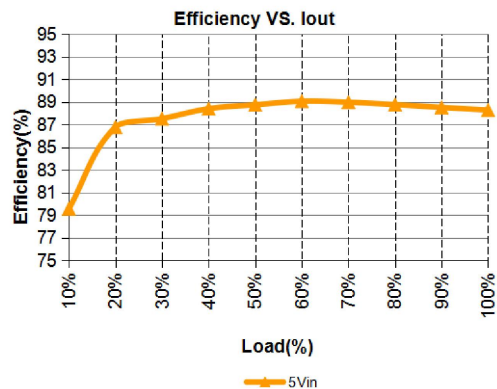
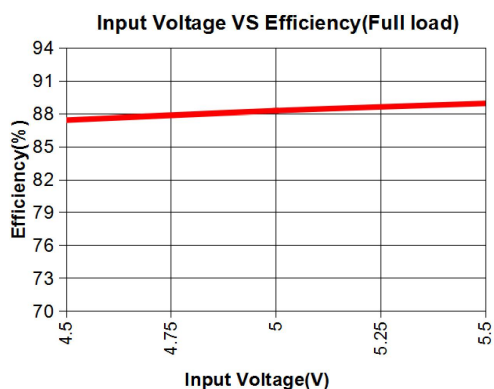
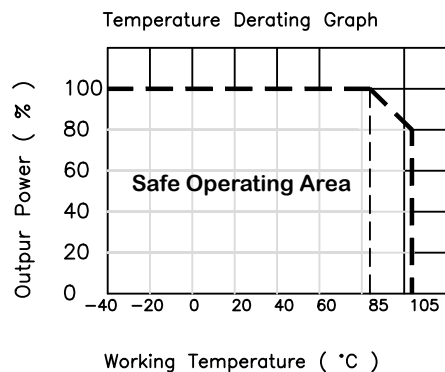
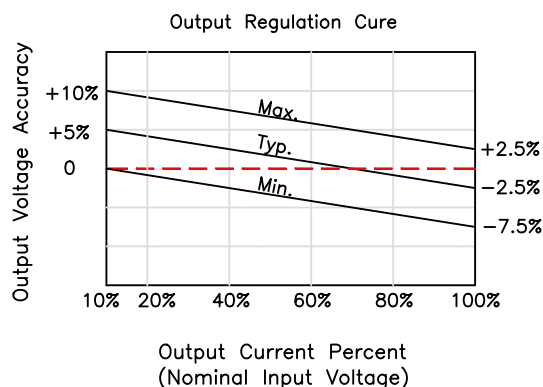
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Typical Characteristic Curve:



REV.: A0

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DRAWN:

2025-04-15

CHECKED:

2025-04-15

APPROVED: David

2025-04-15

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Design Reference:

1. Typical application

Input and/or output ripple can be further reduced, by connecting a filter capacitor from the input and/or output terminals to ground as shown in Fig.7.

Choosing suitable filter capacitor values is very important for a smooth operation of the modules, particularly to avoid start-up problems caused by capacitor values that are too high .

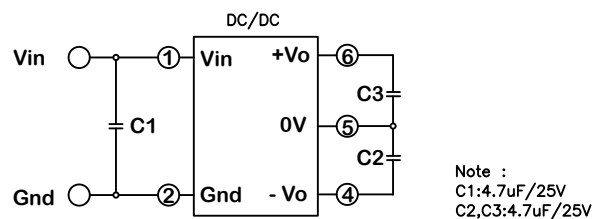


Fig. 7

2. EMC typical recommended circuit

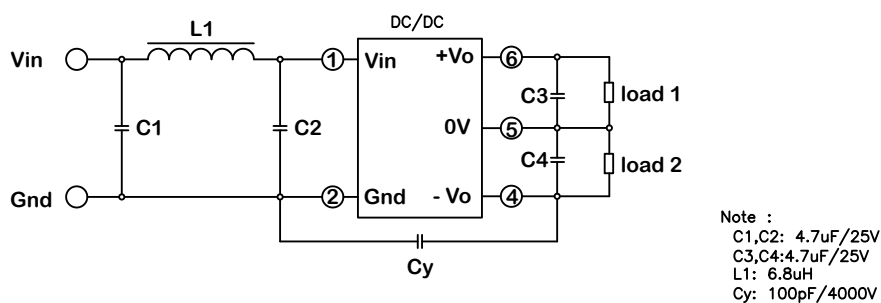
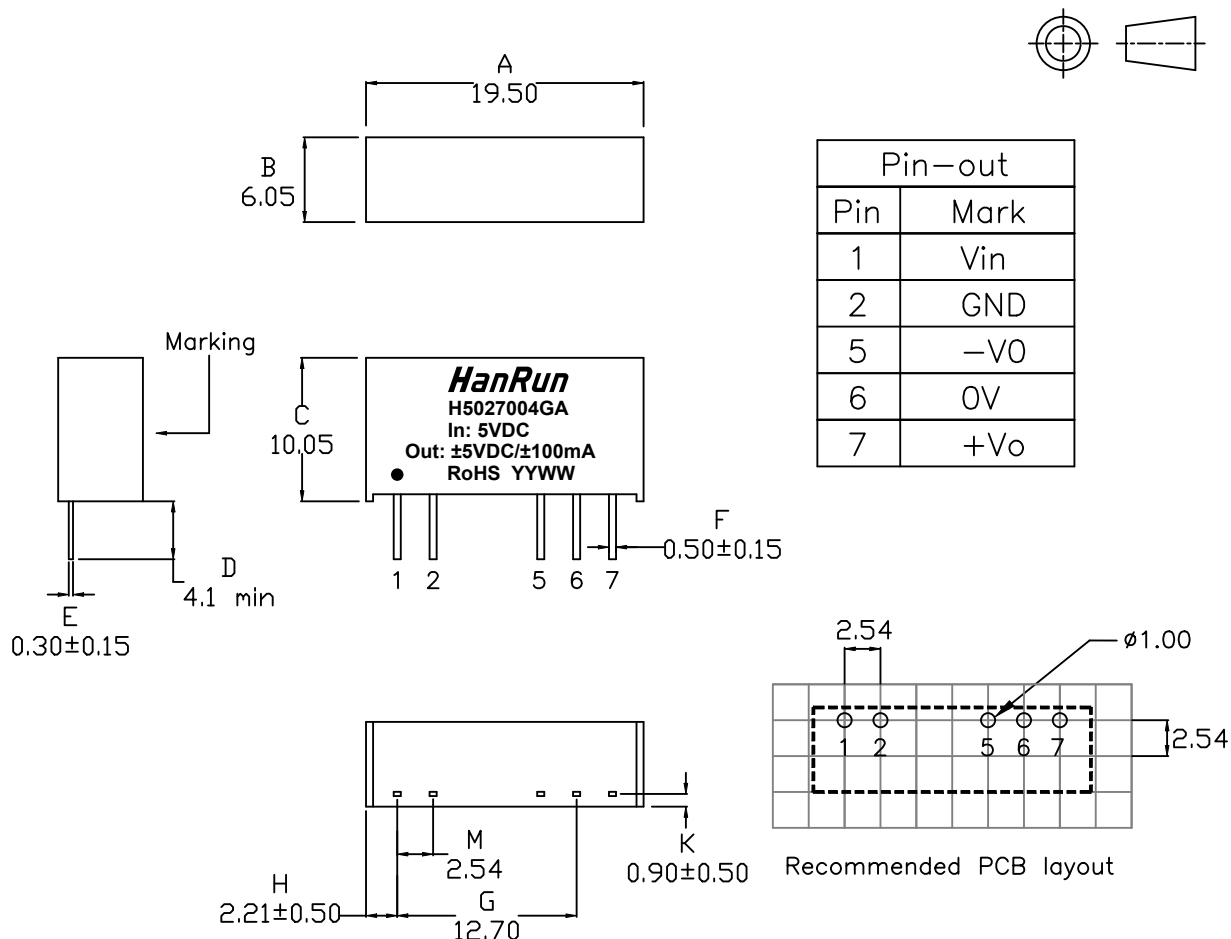


Fig.8

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Dimensions and Recommended Layout:



Unit : mm
Unless otherwise specified,
Tolerance: .xx ± 0.25