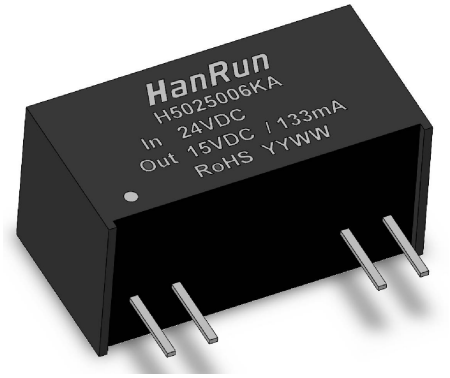
2W isolated DC-DC converter

Fixed input voltage, unregulated single output

HanRun® Electronics Company Limited

H5025006KA

Features :



- I/O isolation test voltage: 4000VAC
- Continuous short-circuit protection
- High efficiency up to 86%
- Capacitive Load: 470μF Max.
- Industry standard pin-out
- Operating ambient temperature range: -40℃ to +105℃
- Designed to Comply with EN 62368-1,IEC 62368-1
- RoHs Compliant

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	21.6	24	26.4	V
Input Current	Vin=24VDC, Io=0mA	–	10	15	mA
Input Current	Vin=24VDC, Io=133mA	–	106	111	mA
Reflected Ripple Current		–	200	–	mA
Surge Voltage (1sec. max.)		-0.3	–	30	V
Input Filter		Capacitance filter			
Hot Plug		Unavailable			

Output Specifications					
Item	Operating Conditions	Min.	Typ.	Max.	Unit
DC Output Current	Nominal Input Voltage	13	–	133	mA
DC Output Voltage	Vin=24VDC, Io=133mA		15		VDC
Ouput Voltage Accuracy	See output regulation curves (Fig. 1)				
Line Regulation	Input voltage change: ±1%	–	–	1.2	%/%
Load Regulation	24VDC input,10%-100% load	–	–	15	%
Temperature Coefficient	Full load	–	±0.03	–	%/℃
RIpple & Noise	20MHz bandwidth (parallel cable method)	–	80	120	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	4000	–	–	VAC
Insulation Resistance	Input to output,at 500VDC	1000	–	–	Mohm
Isolation capacitor	Input to output,100KHz 0.1V	–	10	–	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,nominal input voltage	–	250	–	KHz
Efficiency	24VDC Input, Full load	80	86	–	%
Pin Soldering Resistance Temperature	Soldering spot is 1.5mm away from case for 10s seconds	–	–	300	℃
Capacitive Load	24VDC Input, Full load	–	–	470	μF
Safety Standard	Safety Standard	IEC 62368−1			
MTBF	MIL−HDBK−217F@25℃	3500	–	–	Khours
Vibration	10−150Hz, 5G, 0.75mm. along X, Y and Z				

Physical Specifications	
Casing Material	Black plastic; flame−retardant and heat−resistant (UL94 V−0)
Epoxy	Black ,UL94 V−0
Dimensions	19.5*9.80*12.5mm
Weight	4.6g (typ.)
Cooling Method	Free air convection

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Typical Characteristic Curve:

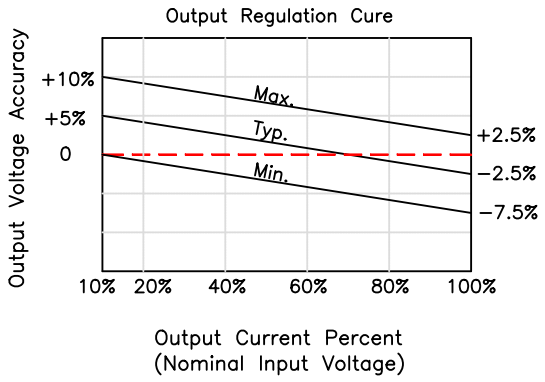

Fig. 1

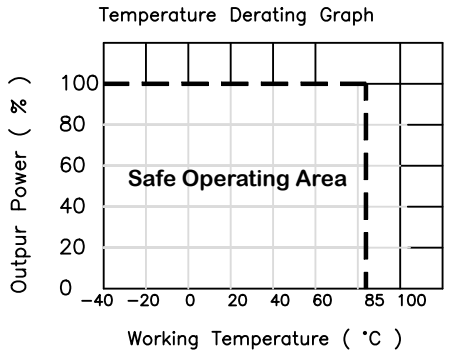

Fig.2

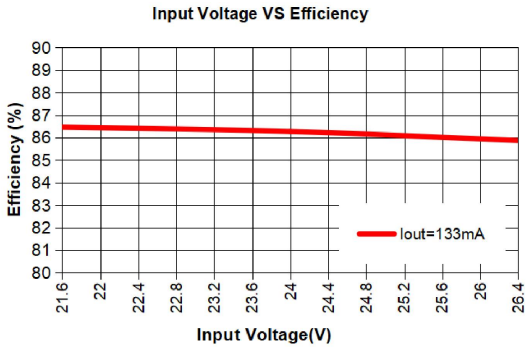

Fig. 3

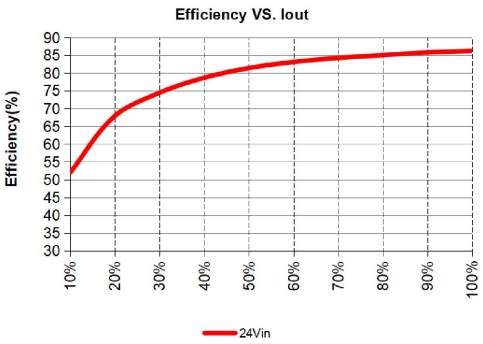

Fig. 4

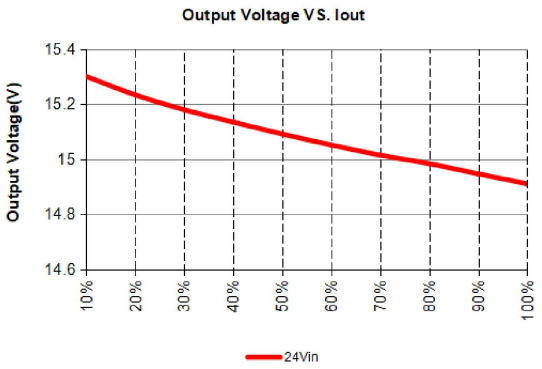

Fig. 5

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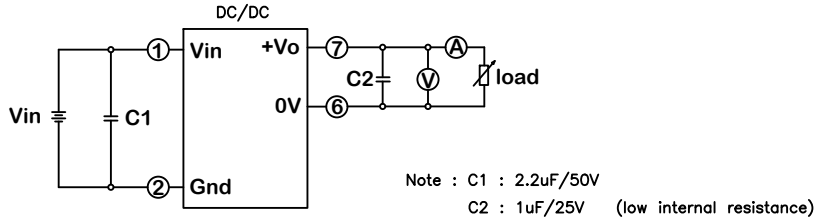
Design Reference:

1. Test configurations



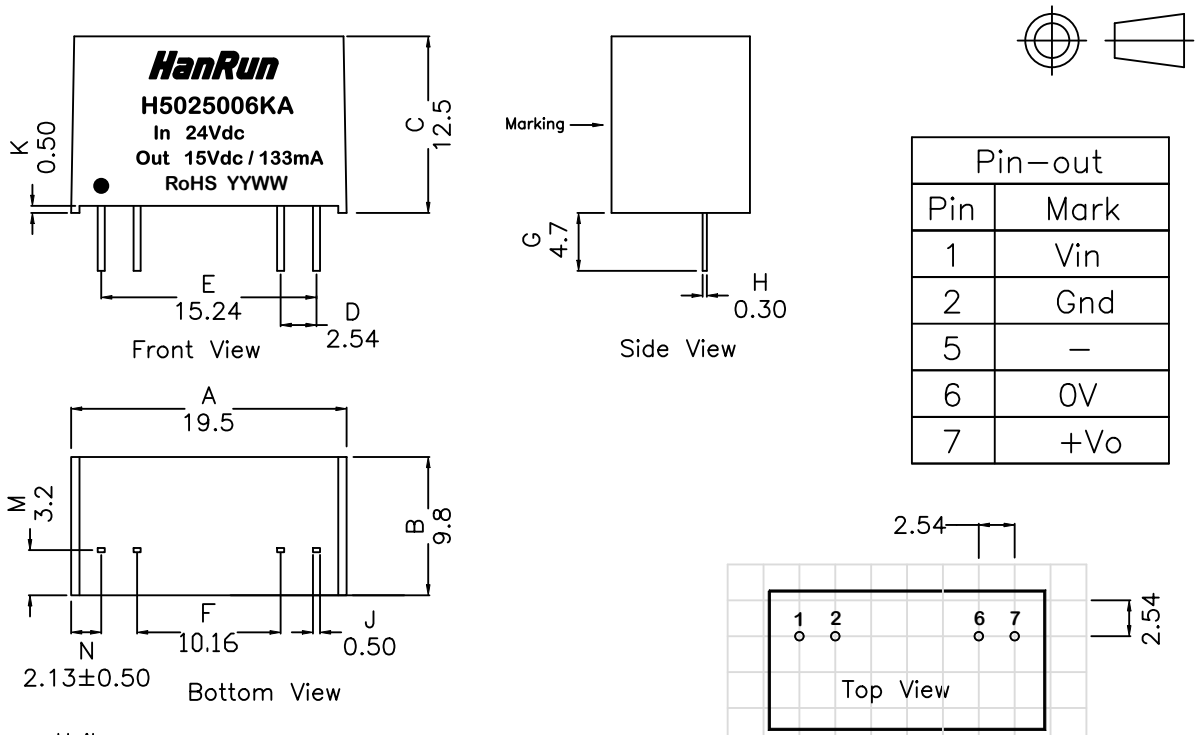
Note : C1 : 2.2uF/50V
C2 : 1uF/25V (low internal resistance)

Fig. 06

2. Electrolytic capacitors are recommended for external capacitors at the input or output of the product. Tantalum capacitors are not, otherwise there is a risk of failure.

3. The products do not support parallel connection of their output for power expansion purpose or hot-plug.

Dimensions and Recommended Layout:



Pin-out	
Pin	Mark
1	Vin
2	Gnd
5	–
6	0V
7	+Vo

Unit : mm
Unless otherwise specified,
Tolerance: .x ± 0.5 , .xx ± 0.25

Recommended PCB layout

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