F2405S-2W-6713HV-78HAN

24V Input, 5V Output 2W Isolated Power Supply

1. Description

F2405S-2W-6713HV-78HAN is isolated 2W DC-DC converter open-frame power module with a fixed input voltage (24V±10%), and a un-regulated output of 5V. Featuring a compact open-frame SIP-4 package, this high-efficiency module operates over a wide -40°C to +85°C temperature range with comprehensive protection including short-circuit auto-recovery, over-current, and over-temperature detection. Its ultra-small PCB footprint makes it ideal for space-constrained applications such as isolated RS-485, CAN, and ADC power supplies. Also compatible with the B2405S-2W-6713HV-78HAN solution featuring 1500VDC isolation withstand voltage.

VIN (V)	VO (V)	IO (mA)	Isolation voltage (kV)	Peak Efficiency (%)
24	5	400	3	87.6

1.1. Functional Block Diagram

F2405S-2W-6713HV-78HAN module employs an isolated full-bridge architecture, consisting primarily of a full-bridge driver IC, transformer, and input/output capacitors.

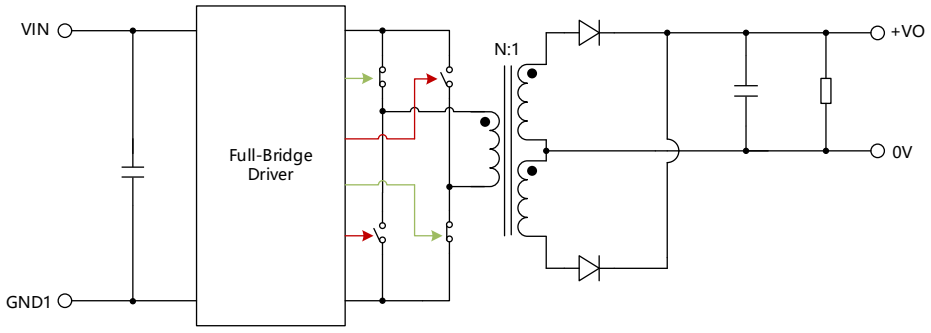

Fig. 1.1 Functional Block Diagram

During operation, the two bridge legs conduct alternately in complementary fashion. When one leg is active, input voltage VIN is applied across the primary winding, producing positive magnetization; when the opposing leg conducts, VIN is reversely applied, generating negative magnetization. This alternating excitation transfers energy from primary to secondary through transformer magnetic coupling. The

induced voltage is then rectified by secondary-side diodes and filtered by the output capacitor to power the load.

2. Features

- Ultra compact SIP package
- Cost-effective open-frame solution
- Isolation test voltage: 3.0 kVDC
- Short circuit protection (Auto-recovery)
- Integrated over-current and over-temperature protection

3. Pin Configuration and Functions

3.1. Product

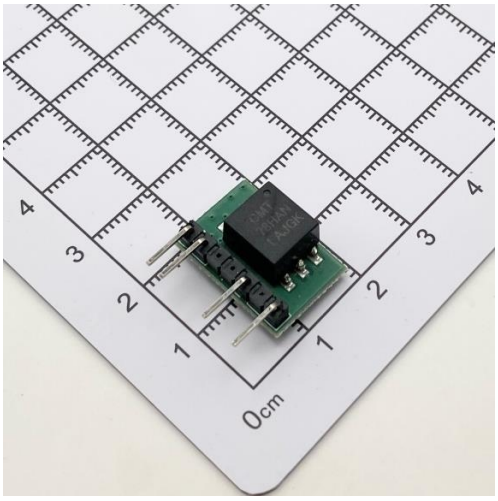

Fig. 3.1 Front side of Product

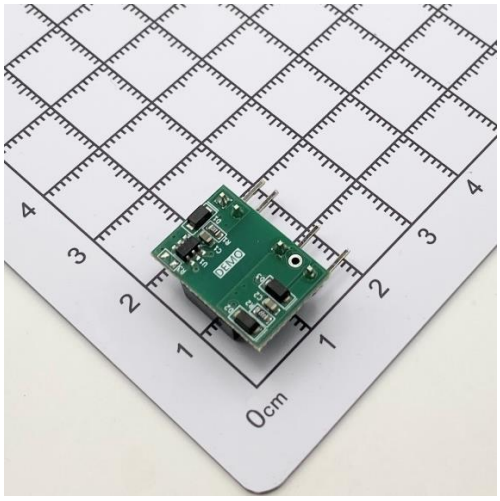

Fig. 3.2 Back side of Product

3.2. Package Outline and Functional Pin Description (Unit：mm)

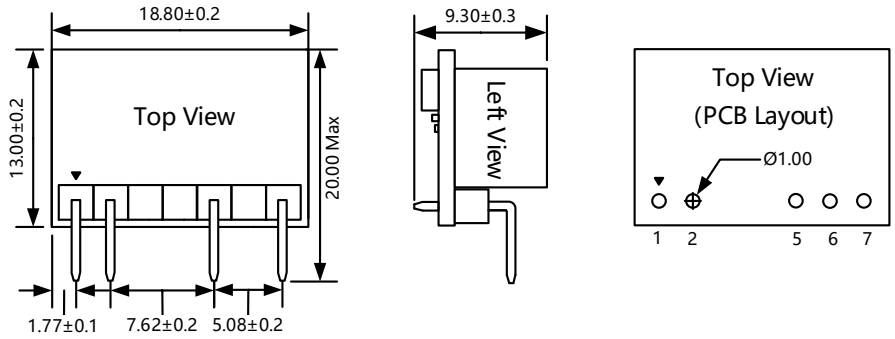

Fig. 3.3 Package Outline

Pin		Description
Name	No.	
GND	1	Negative Power Input
VIN	2	Positive Power Input
0V	5	Negative Power Output
+VO	7	Positive Power Output

4. Electrical Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Current	VIN=24V, 100% Load		98		mA
	VIN=24V, No Load		3.7		mA
Efficiency	Nominal Input Voltage, 100% Load		87.6		%
Ripple & Noise	20MHz Bandwidth， Nominal Input Voltage		47.3		mV
Operating temperature		-40		85	°C
Short Circuit protection	VIN=24V	Continuous, Auto recovery			
Dimensions	18.8 X 13.0 X 9.3				mm

5. Typical Characteristics

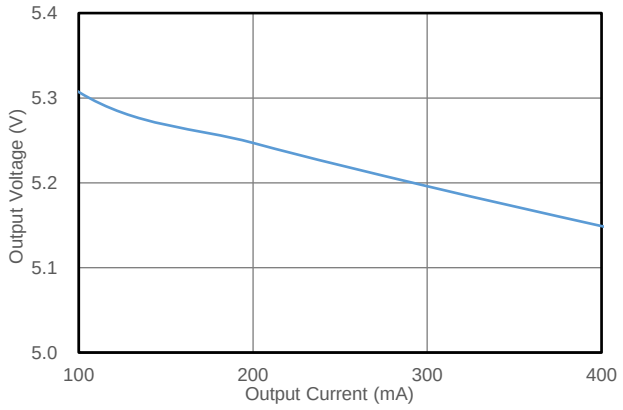

Fig. 5.1 Output Voltage vs. Output Current

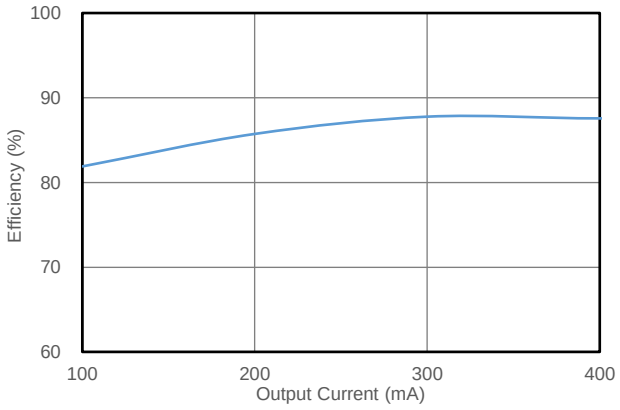

Fig. 5.2 Efficiency vs. Output Current