

F1512S-2W-6713HV-78F2N**15V Input, 12V Output 2W Isolated Power Supply**

1. Description

F1512S-2W-6713HV-78F2N is isolated 2W DC-DC converter open-frame power module with a fixed input voltage ($15V \pm 10\%$), and a un-regulated output of 12V. Featuring a compact open-frame SIP-4 package, this high-efficiency module operates over a wide -40°C to $+85^{\circ}\text{C}$ 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 B1512S-2W-6713HV-78F2N solution featuring 1500VDC isolation withstand voltage.

VIN (V)	VO (V)	IO (mA)	Isolation voltage (kV)	Peak Efficiency (%)
15	12	166	3	92.2

1.1. Functional Block Diagram

F1512S-2W-6713HV-78F2N module employs an isolated full-bridge architecture, consisting primarily of a full-bridge driver IC, transformer, and input/output capacitors.

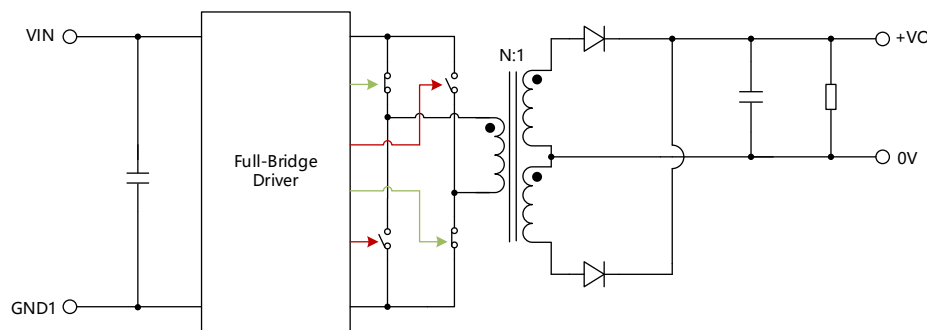


Fig. 1.1 Functional Block Diagram

During operation, the two bridge legs conduct alternately in complementary fashion. When one leg is active, input voltage V_{IN} is applied across the primary winding, producing positive magnetization; when the opposing leg conducts, V_{IN} 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

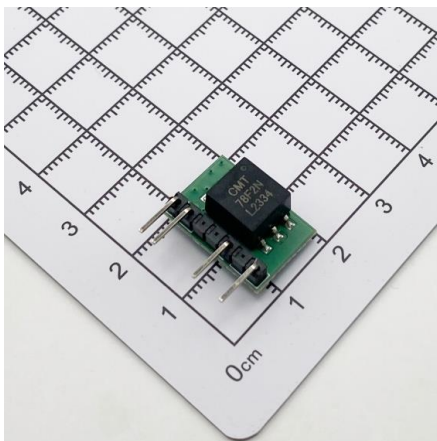


Fig. 3.1 Front side of Product

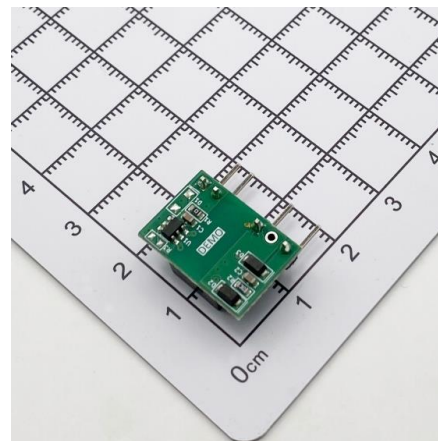


Fig. 3.2 Back side of Product

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

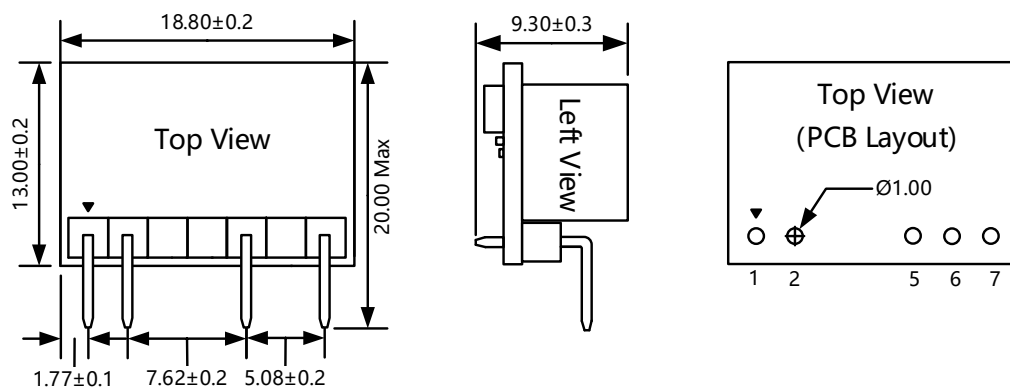


Fig. 3.3 Package Outline

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=15V, 100% Load		141		mA
	VIN=15V, No Load		4		mA
Efficiency	Nominal Input Voltage, 100% Load		92.2		%
Ripple & Noise	20MHz Bandwidth, Nominal Input Voltage		46.6		mV
Operating temperature		-40		85	°C
Short Circuit protection	VIN=15V	Continuous, Auto recovery			
Dimensions	18.8 X 13.0 X 9.3				mm

5. Typical Characteristics

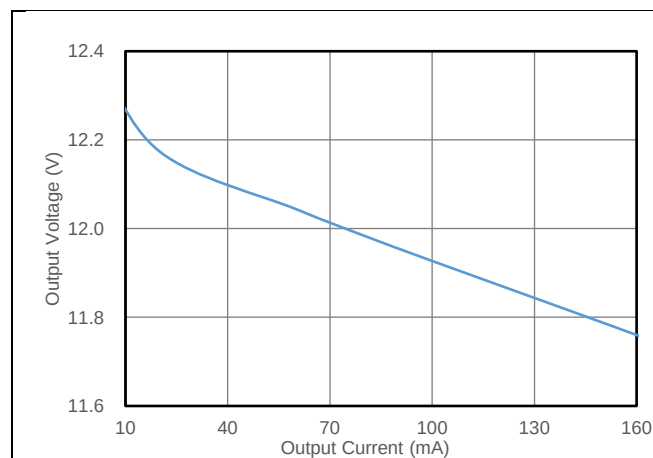


Fig. 5.1 Output Voltage vs. Output Current

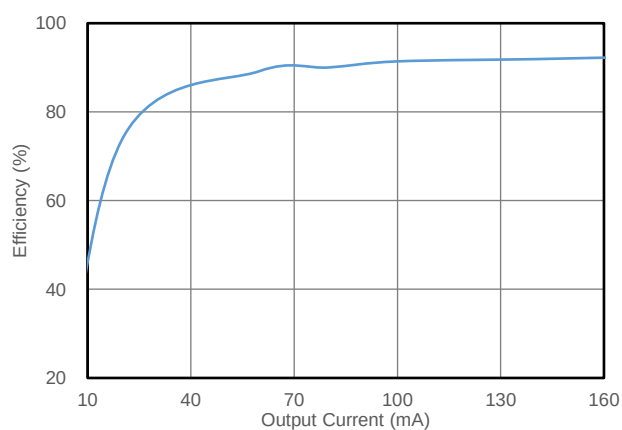


Fig. 5.2 Efficiency vs. Output Current