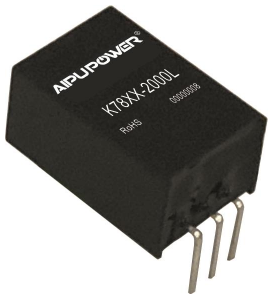
DC/DC Converter
K78XX-2000(L) Series

Typical Features

- Wide input voltage range, non-isolated & regulated output
- Efficiency up to 92% (Typ.)
- Mini size SIP package
- Short circuit & Over temperature protections
- Low Ripple & Noise
- Operating temperature from -40℃ to +85℃
- Plastic Case, flame class UL94-V0



Typical Product List

Certificate	Part No.	Input Voltage Range	Output Voltage/ Current (Vo/Io)		Max Capacitive Load	Ripple & Noise (Max)	Efficiency (%) @Full load (Typ.)	
		(VDC)	Vo (VDC)	Io(mA)	(uF)	mVp-p	Vin(Min)	Vin(Max)
-	K783V3-2000(L)	12 (4.75 - 18)	3.3	2000	1000	45	85	87
-	K7805-2000(L)	12 (7 - 18)	5	2000	1000	45	87	91
-	K7812-2000(L)	24 (16 - 32)	12	2000	1000	70	94	92

Note: Please contact Aipu sales for other output voltages requirements in this series but not in this table.

Output Specifications

Item	Operation Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	Full load	-	±2	±3	%
Line Voltage Regulation	Full input voltage range	-	±0.2	±0.5	
Load Regulation	10% ~ 100% load	-	±0.5	±0.75	
Ripple & Noise*	Nominal input voltage, full load, 20MHz	-	25	70	mV
Temp. Drift Coefficient	100% Load	-	-	±0.03	%/°C
Over Temperature Protection	Chip sensor inside	-	150	-	°C
Short Circuit Protection	-	Continuous, Self-recovery			

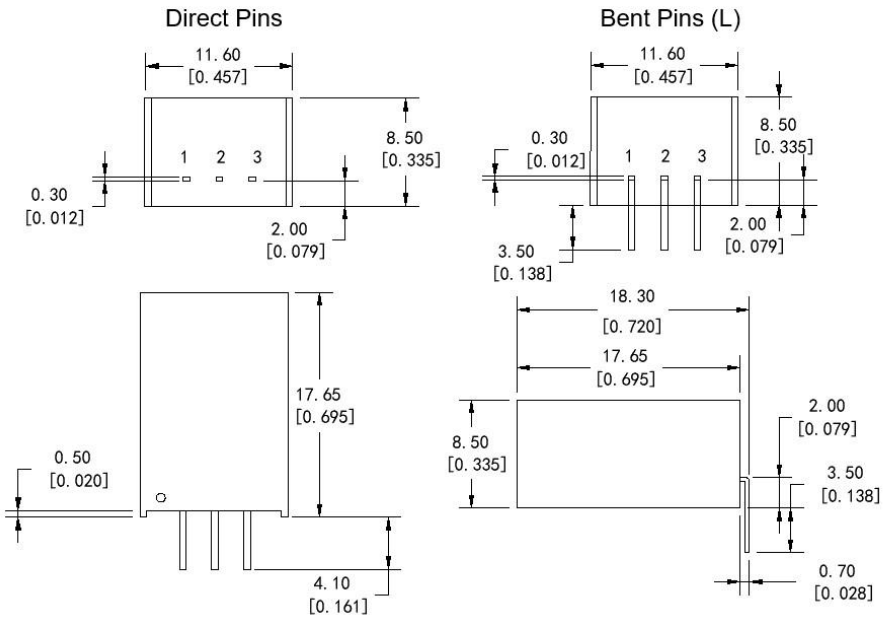
*Note: The Ripple & Noise is tested by the twisted pair method, please refer to the following test instruction.

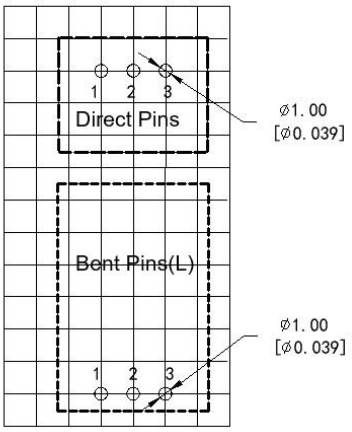
General Specifications

Item	Operation Conditions	Min.	Typ.	Max.	Unit
Switching Frequency	-	-	350	-	KHz
Operating Temperature	Refer to the Temperature Derating Graph	-40	-	+85	°C
Storage Temperature	-	-55	-	+125	
Case Temperature Rise	-	-	35°	-	°

Pin Soldering Temperature	1.5mm from the case, 10S	-	-	300	°C
Relative humidity	No condensation	5	-	95	%RH
MTBF	MIL-HDBK-217F@25℃	1000	-	-	K hours
Case Material	Plastic in Black, flame class UL94-V0				
Unit Weight	4.0 g (Typ.)				

Mechanical Dimensions





PCB layout vertical view
Grid 2.54x2.54[0.10x0.10]

Unit: mm[inch]
Pin section tolerance: ±0.10[±0.004]
General tolerance: ±0.50[±0.020]

Package Code	Dimensions L x W x H	
K78-2000	11.60x8.50x17.65 mm	0.457x0.335x0.695 inch

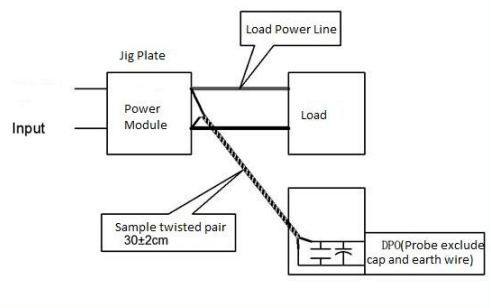
Pin-out Function Description

Pin No.	1	2	3
Function	+Vin	GND (Common)	+Vout

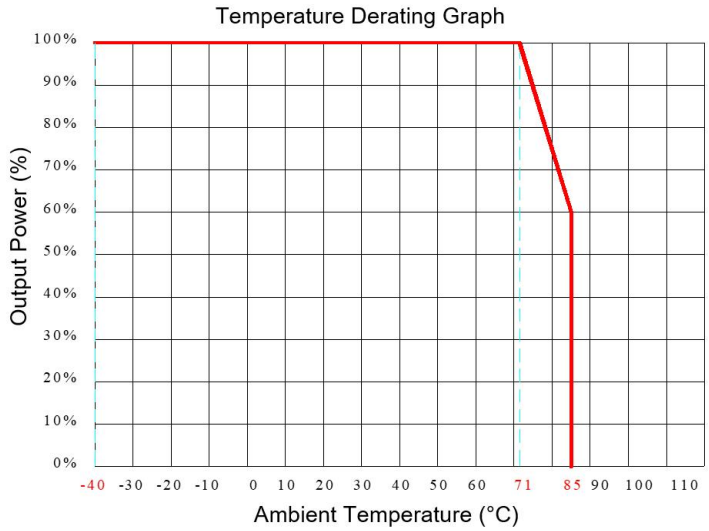
Ripple & Noise Test Instruction (Twisted Pair Method, 20MHz bandwidth)

1) The Ripple & noise test needs 12# twisted pair cables, an oscilloscope which bandwidth should be set to 20MHz, 0.1uF polypropylene capacitor and 10uF high-frequency low-resistance electrolytic capacitor are connected in parallel with the probes (100M bandwidth). The oscilloscope should be set at the Sample Mode.

2) The test diagram is shown on the right. The converter output connects to the electronic load by the jig with cables which size should be defined according to the output current value. The twisted pair (length 30cm±2 cm) should be connected in parallel with the load, the location is as close as possible to the output pins or terminals. The test can be start after input power on.



Product Characteristics Graph



Recommendation for Application

1, Output Requirements

a. To ensure the converter operates efficiently and reliably, its minimum load should not be less than 10% of the rated load. It is recommended to connect a resistor to the output when the real load is less than 10% (the sum of the power consumed should be bigger than or equal to 10% of the rated power).

b. The maximum capacitive load is tested at nominal input voltage and full load. The converter may not start or be damaged at the capacitive over-load.

2, Application Notice

a.This product cannot be used in parallel connected, and it does not support hot-plugging.

b. The product performance in this datasheet cannot be guaranteed if it works at over-load condition.

c. Unless otherwise specified, all values or indicators in this datasheet are tested at Ta=25℃, humidity<75%RH, nominal input voltage and rated load (pure resistance load).

d. All values or indicators in this datasheet had been tested based on Aipupower test specifications.

Guangzhou Aipu Electron Technology Co., Ltd
Address: Building 4, HEDY Park, No.63, Punan Road, Huangpu Dist, Guangzhou, China.
Tel: 86-20-84206763 Fax: 86-20-84206762 HOTLINE: 400-889-8821
E-mail: sales@aipu-elec.com Website: https://www.aipupower.com

