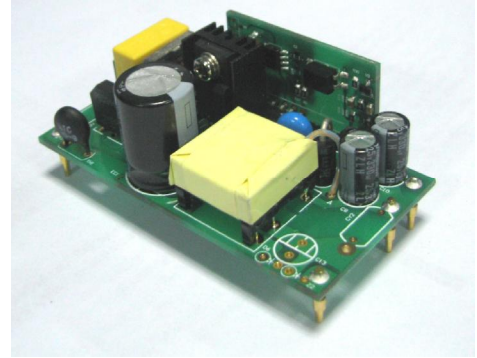


## LO10-24B13K

### Ultra wide input voltage range switched-mode power supply for electric-meter



#### FEATURES

- I Input voltage range: 30~280Vac/30~400Vdc;
- I Conduction/Radiation: Class B;
- I Burst/Surge: Class 4;
- I Multi-output protection functions: short circuit protection, over-voltage protection;
- I High efficiency, high reliability, low ripple & noise, low standby power consumption;
- I Long-life low-impedance electrolytic capacitors;
- I Gild pin, customized available.

#### Ultra wide input voltage range switched-mode power supply for electric-meter

The LO10-24B13K is designed for electric-meter application and operates over a very wide input voltage range: 30-280VAC / 40-400VDC, 13V single output. The isolation voltage is 4000VAC between input and output. The product meets IEC/EN61000 "Burst (4kV)", "Surge (2kV/4kV)" and "EN55022 Class B Conduction/ Radiation". So it supplies with the requirement of high isolation voltage and rigorous EMC.

#### INPUT SPECIFICATIONS

Input Voltage Range	30~280Vac or 30~400Vdc
Input frequency(Hz)	47~440
Input Current(A)	0.1 Typ @Vin=220V <sub>ac</sub> ,Io=100%
Standby power consumption (W)	0.2 Typ @Vin=220V <sub>ac</sub> ,Io=0

#### OUTPUT SPECIFICATIONS

Nominal output voltage(V)	13
Output current(A)	0.5
Voltage set accuracy	±1 %
Input variation	±0.5%
Load variation (10% to 100%)	±1%
Ripple & ripple(mVp-p) (0~+60℃)	130 Max
Output Short circuit protection	Continuous, and auto recovery
Output over voltage protection	(Feedback-clamp) Voltage limited≤15

#### COMMON SPECIFICATIONS

Efficiency (%)	75Typ @Vin=220V <sub>ac</sub> , Io=100%
Leakage current(Ma)	0.3Typ @Vin=220V <sub>ac</sub>
Temperature drift(%/℃)	±0.02Max
Start up time(ms)	50(Typ) @Vin=220V <sub>ac</sub> , Io=100%
Hold-up time(ms)	200 (Typ) @Vin=220V <sub>ac</sub> , Io=100%
Maximum capacitive load(μF)	470 @Vin=220V <sub>ac</sub> , Io=100%

## COMMON SPECIFICATIONS

Isolation voltage	Input/Output	4000VAC 1 min; insulation resistance>50MΩ@500VDC
MI/RFI conducted		EN55022, level B
EMC Compliance	Electrical fast transients/bursts on mains line	IEC/EN 61000-4-4 level 4 4kV
	Surge	IEC/EN 61000-4-5 level 4 2kV/4kV
Environment	Operating tem., Humidity & altitude	-25~+70℃,20-90%RH, 3000m(1000 feet)Max
	Storage tem., Humidity & altitude	-25~+85℃,20-90%RH,9000m(3000 feet)Max
	Vibration	10~55Hz,19.6m/s <sup>2</sup> (2G),3min; X,Y,Z axis 60min
	Shock	196.1m/s <sup>2</sup> (2G),11ms; X,Y,Z axis 1 time
Others	Switching frequency	60kHz Typ
	Cooling	Free air convection
	Weight	55g
	Outline size	80mm(L)×40mm(W)×30mm(H)

### Remarks:

- Unless otherwise specified, all specifications above are measured at rated input voltage and rated output load, TA=25℃, humidity < 75%;
- Ripple and Noise were measured by the method of parallel lines. See detailed operation instructions at Testing of Power Converter section.

## CHARACTERISTIC CURVE

Figure1: Input voltage VS Efficiency

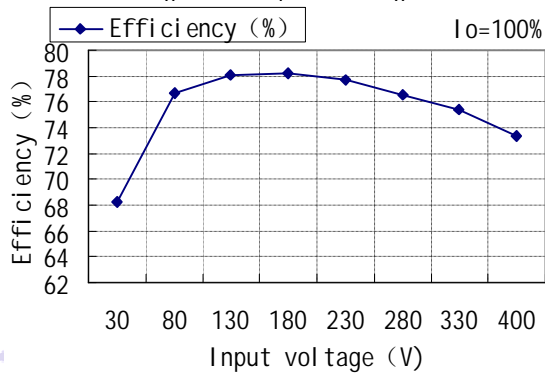
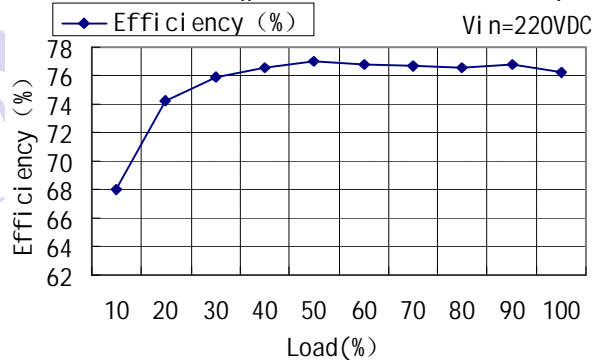
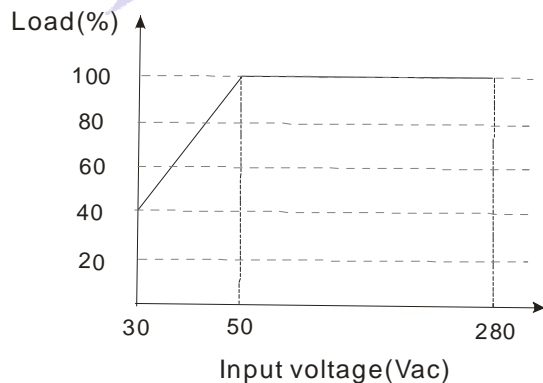


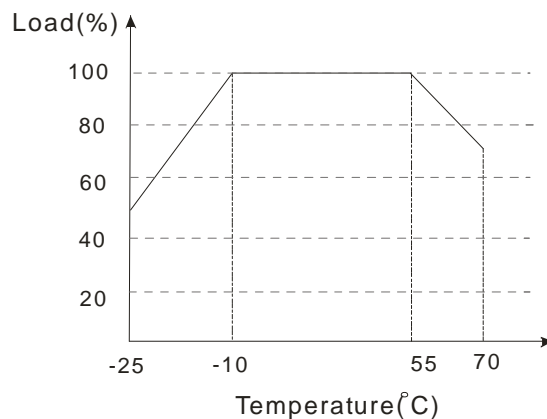
Figure2: Load VS Efficiency



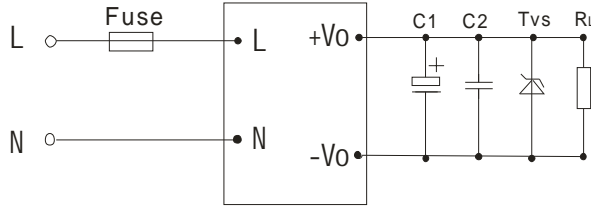
## INPUT VOLTAGE VS LOAD



## TEMPERATURE VS LOAD



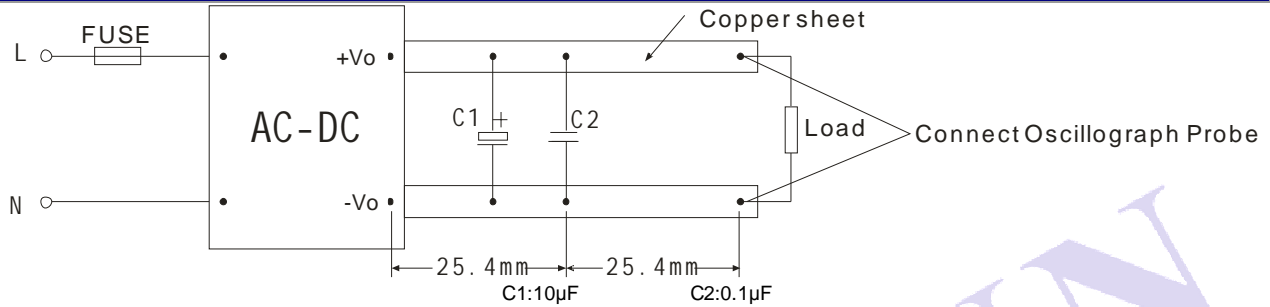
## TYPICAL APPLICATIONS



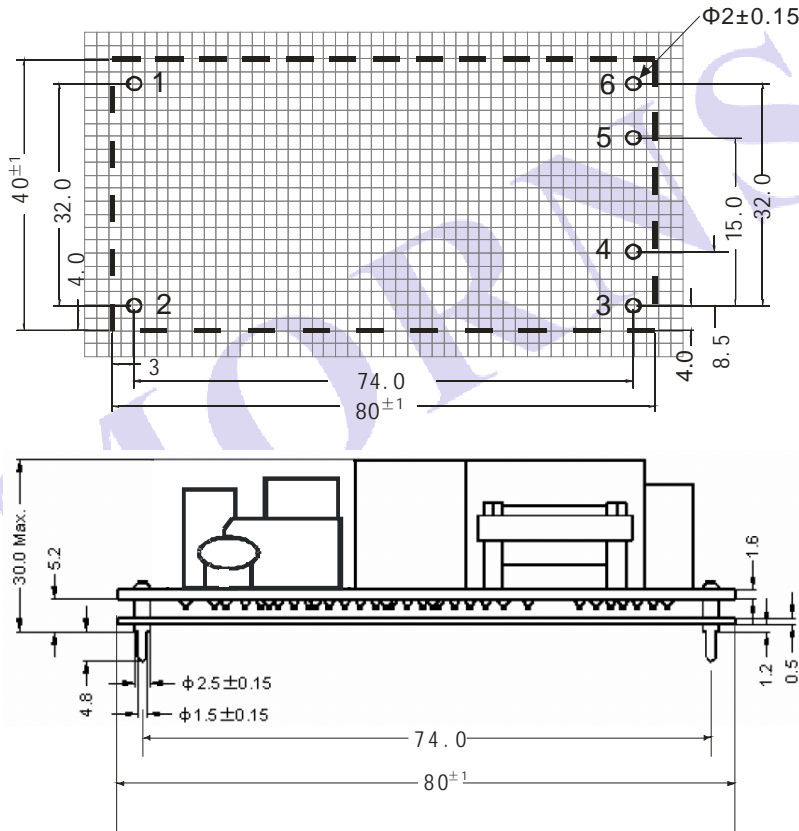
### Remark:

Output filtering capacitor C1 is electrolytic capacitors, It is recommended to use high frequency and low impedance electrolytic capacitors (value:100 $\mu$ F/25V).C2 is ceramic capacitor and it is used to filter high frequency noise(Recommend value:0.1 $\mu$ F/50V). TVS is recommended component to protect post-circuits (when converter fails).

## PARALLEL LINES MEASURE



## OUTLINE AND DIMENSIONS

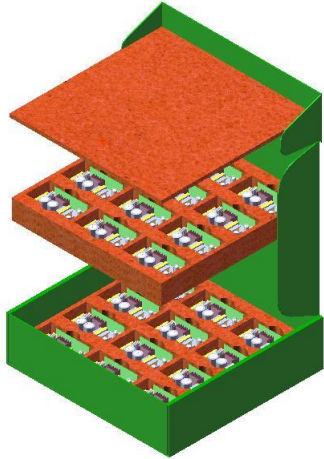


### NOTE:

1. Unit: mm
2. The other tolerances are  $\pm 0.30$ mm ,except especial explanation;
3. FR-4,1.6mm thick double sided glass fiber PCB;
4. 0.5mm black MYLAR insulating sheet material.

Pin	Name	Function
1	ACL	AC voltage line wire(L wire) or positive input voltage(DC)
2	ACN	AC voltage neutral wire(N wire) or negative input voltage(DC)
3	NC	NC
4	No Pin	No pin
5	OUT-	The second output voltage negative(-)
6	OUT+	The first output voltage positive(+)

## PACKAGE DIAGRAM



Inside package box dimensions: L\*W\*H=365\*350\*105mm

Package quantity: 24PCS

Outside package box dimensions: L\*W\*H=390\*360\*245mm

Package quantity: 48PCS

MORNSUN