

## K78XX-1000 Series

### WIDE INPUT NON-ISOLATED

### VERY LOW PROFILE SIP-3 PACKAGE

### REGULATED SINGLE OUTPUT



#### FEATURES

- Efficiency Up To 93%
- No need for heatsinks
- Pin-out compatible with LM78XX Linear
- Wide input range
- Short circuit protection, Thermal Shutdown
- Low ripple and noise

#### PRODUCT PROGRAM

Part Number	Input	Output		Efficiency(%)	
SIP-3	Voltage Range (V)	Voltage (V)	Current (mA)	Vin (min.)	Vin(max.)
K7803-1000	4.75-28	3.3	1000	90	83
K7805-1000	6.5-32	5.0	1000	93	88
K78X6-1000*	9.0-32	6.5	1000	94	90
K7809-1000*	12-32	9.0	1000	95	92
K7812-1000	16-32	12	1000	96	94

\*designing

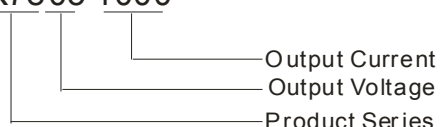
Note: If Input voltage above specified may cause permanent damage to the device

#### APPLICATIONS

The K78xx-1000 Series high efficiency switching regulators are ideally suited to replace 78xx linear regulators and are pin compatible. The efficiency of up to 96% means that very little energy is wasted as heat so there is no need for any heat sinks with their additional space and mounting costs.

#### MODEL SELECTION

##### K7805-1000



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#### OUTPUT SPECIFICATIONS

Characteristics	conditions	Min	Typ	Max	Units
Output Voltage accuracy	At 100% Load		±2	±3	%
Line regulation	Vin=min. to max. at full load		±0.2	±0.4	
Load regulation	10% to 100% load		±0.4	±0.6	
Ripple Noise	20MHZ bandwidth		20	35	mVp-p
Short Circuit Input Power			0.5	1.2	w
Short circuit protection	Continuous, automatic recovery				
Output Current Limit				2000	mA
Switching frequency		280	330	450	KHz
Dynamic Load Stability	100%<->10% load			±100	mV
Quiescent current	Vin=min. to max. at 0%l load		5	7	mA
Thermal Shutdown	Internal IC junction		150		°C
Temperature coefficient	-40 °C to +85 °C ambient			0.02	%/°C
Max capacitance load				2000	µF

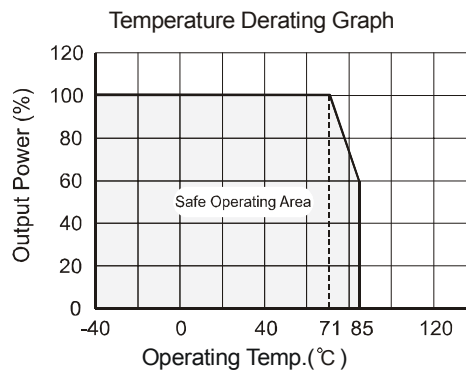
#### COMMON SPECIFICATION

Operating Temperature Range	-40 °C ~+85°C
Operating Case Temperature	+100°C (max)
Storage Temperature Range	-55 °C to +125 °C
Cooling	Free Air Convection
Lead Temperature***	300 °C (max)
Storage Humidity Range	≤ 95%
Case Material	Plastic (UL94-V0)
MTBF (+25 °C)	2,000,000 hours
Package Weigh	3.7 g
***Lead Temperature 1.5mm from case for 10 seconds.	

Note:

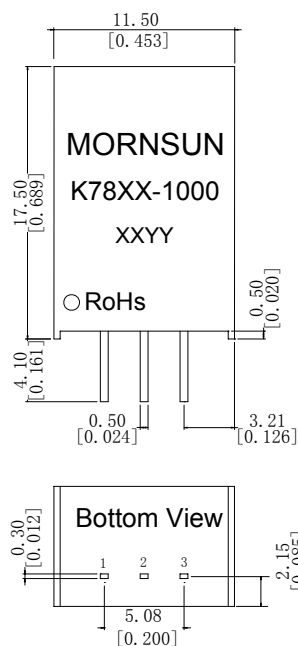
- 1.All specifications measured at T<sub>A</sub>=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. only typical models listed. If you need other model, please confirm the power, input voltage and output voltage .then phone us.

#### TYPICAL CHARECTERISTICS

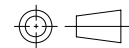


## PACKAGE STYLE AND PINNING

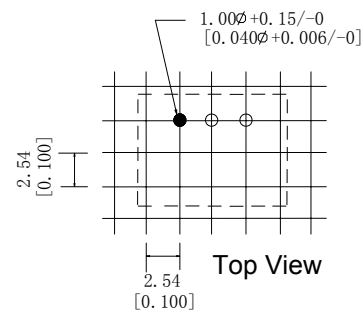
### SIP-3 Package



3rd angle projection



### Recommended Footprint Details



Note:

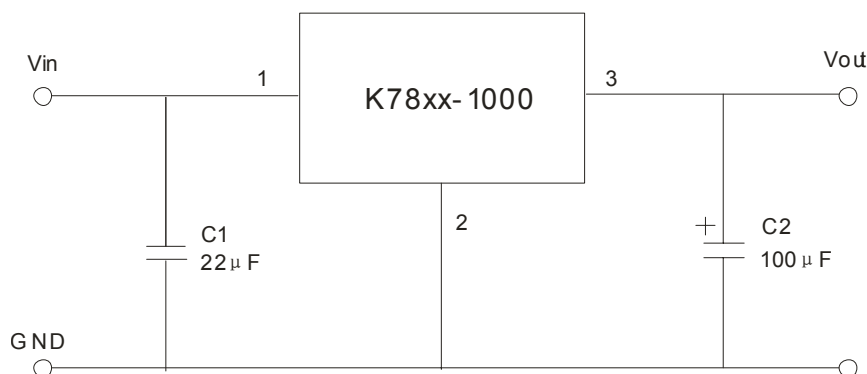
Unit: mm (inch)

Pin tolerances:  $\pm 0.10\text{mm}$  (0.004 inch)

General tolerances:

$\pm 0.25\text{mm}$  (0.01 inch)

## STANDARD APPLICATION CIRCUIT

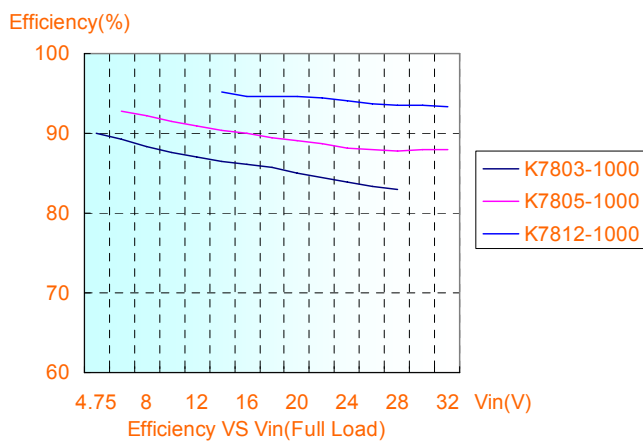


**C1:** a low ESR capacitor is required to keep the noise at the converter to a minimum. Ceramic capacitors are preferred, but tantalum or low ESR electrolytic capacitors may also suffice; General used 22 $\mu$ F/50V ceramic capacitor.

**C2:** Optional, General used 100 $\mu$ F/25V electrolytic capacitor.

**Note:** No parallel connection or plug and play.

## Efficiency



## Ripple

