

MORNSUN

K78XXM-1000 Series

**WIDE INPUT NON-ISOLATED & REGULATED
SINGLE OUTPUT**



RoHS

FEATURES

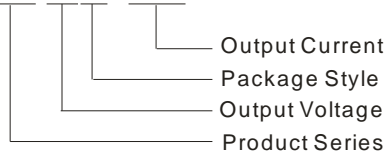
- Efficiency up to 93%
- Operating tem. range : -40°C ~ +85°C
- Pin-out compatible with LM78XX Linear
- Short circuit protection, thermal shutdown
- Low ripple and noise
- Micro miniature SIP package, meet UL94-V0 requirement
- No heatsink required
- Industry standard pinout
- MTBE>2000KHours

APPLICATIONS

The K78xxM-1000 series high efficiency switching regulators are ideally suited to replace 78xx linear regulators and are pin compatible. The efficiency of up to 93% means that very little energy is wasted as heat so there is no need for any heatsinks with their additional space and mounting costs.

MODEL SELECTION

K7805M-1000



MORNSUN America

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PRODUCT PROGRAM

Part Number	Input	Output		Efficiency (%)	
	Voltage Range (VDC)	Voltage (VDC)	Current (mA)	Vin (min.)	Vin (max.)
K7803M-1000	4.75-20	3.3	1000	90	83
	4.75-18	-3.3	-600	77	82
K7805M-1000	6.5-20	5.0	1000	93	85
	7.0-18	-5.0	-600	82	85

OUTPUT SPECIFICATIONS

Item	Test conditions	Min.	Typ.	Max.	Units
*Output voltage accuracy	100% full load, input voltage range		±2	±3	%
Line regulation	Vin=min. to max, at full load		±0.5	±0.75	
Load regulation	10% to 100% load		±0.5	±1.0	
Ripple & Noise	20MHZ bandwidth, typical application circuit		25	45	mVp-p
Short circuit protection		Continuous, auto-recovery			
Thermal shutdown	Internal IC junction		150		°C
Output current limit			3000		mA
Switching frequency	Full load	335	385	435	KHz
Dynamic load stability				±100	mV
Quiescent current	Vin from min to max and at 0% load		7	10	mA
Temperature coefficient	-40°C ~ +85°C ambient			±0.02	%/°C
Max capacitance load				1000	µF

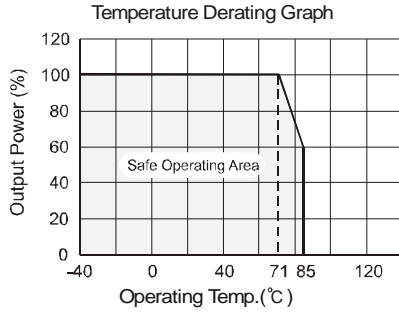
*K7803M-1000 is ±3.5%(MAX)

COMMON SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Units
Storage humidity range				95	%
Operating temp. range		-40		85	°C
Storage Temp. range		-55		125	
Operating case temp.				100	
Lead temperature	1.5mm from case for 10 seconds			300	
Cooling		Free Air Convection			
Case material		Plastic (UL94-V0)			
MTBF	+25 °C. MIL-HDBK-217F	2000			k hours
Package Weight			2.0		g

Note: 1. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. Only typical models listed, other models may be different, please contact our technical person for more details.

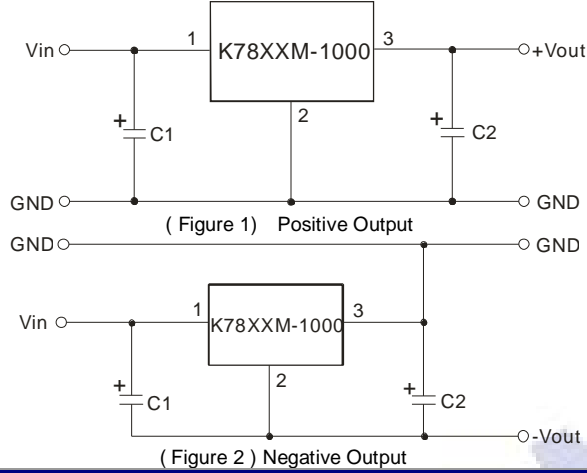
TYPICAL CHARECTERISTICS



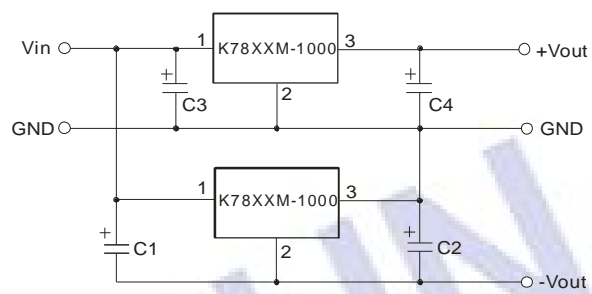
EXTERNAL CAPACITOR TABLE

Part Number	C1,C3 (Ceramic capacitor)	C2,C4 (Ceramic capacitor)
K7803M-1000	10 μ F/25V	22 μ F/16V
K7805M-1000	10 μ F/25V	22 μ F/16V

TYPICAL APPLICATION CIRCUIT



APPLICATION EXAMPLE

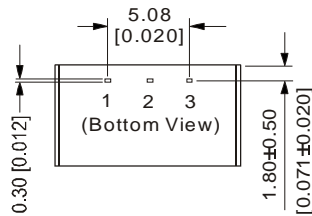
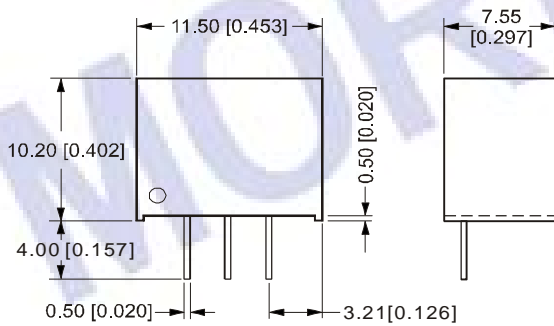


Note:

1. C1 and C2 are required and should be fitted close to the converter pins.
2. The capacitance of C1,C2,C3 and C4 sees external capacitor table, it can be increased properly if required, and tantalum or low ESR electrolytic capacitors may also suffice.
3. No parallel connection or plug and play.

OUTLINE DIMENSIONS & FOOTPRINT DETAILS

MECHANICAL DIMENSIONS



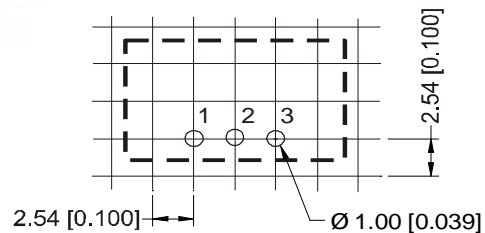
FOOTPRINT DETAILS

Pin	Positive	Negative
1	Vin	Vin
2	GND	-Vout
3	+Vout	GND

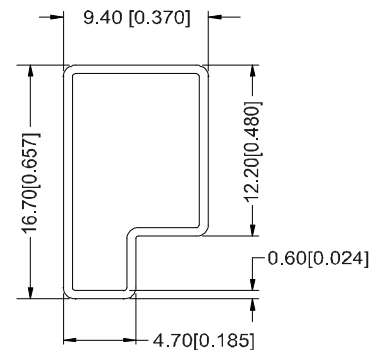
Note:

Unit:mm[inch]
Pin section tolerances: ± 0.10 mm [± 0.004 inch]
General tolerances: ± 0.25 mm [± 0.010 inch]

RECOMMENDED FOOTPRINT



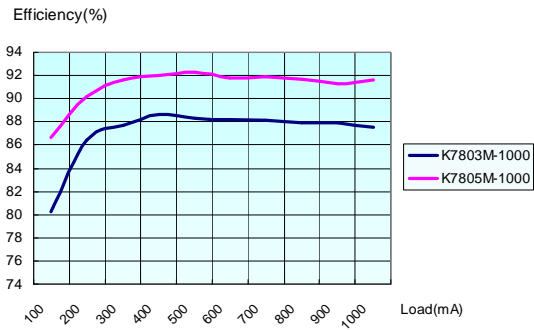
TUBE OUTLINE DIMENSIONS



Note:

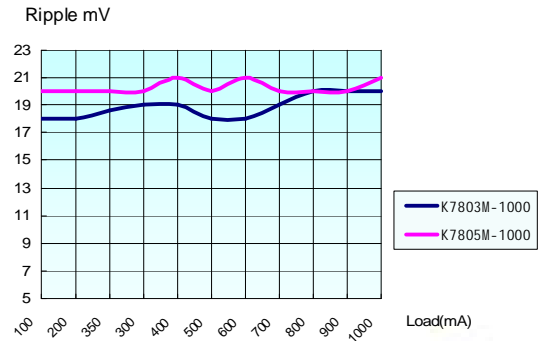
Unit :mm[inch]
General tolerances: ± 0.50 mm [± 0.020 inch]
L=530mm[20.866inch] Devices per tube quantity: 43pcs
L=220mm[8.661inch] Devices per tube quantity: 17pcs

Efficiency

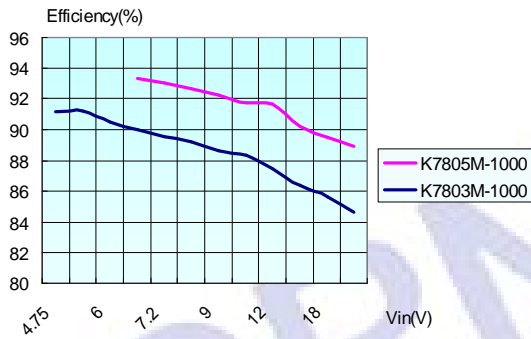


Efficiency VS Load(Vin=12V)

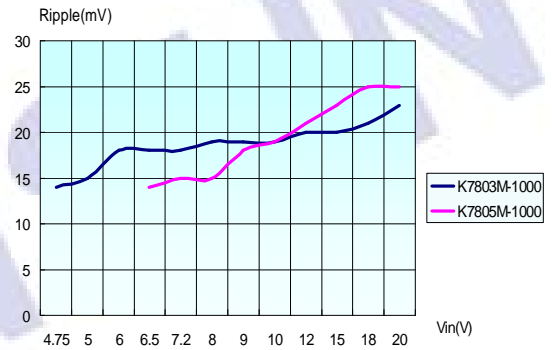
Ripple



Ripple VS Load(Vin=12V)



Efficiency VS Vin(Full Load)



Ripple VS Vin(Full Load)