

# MORNSUN®

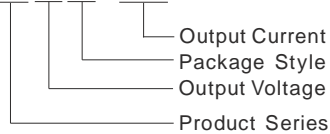
## K78\_YMD-2000 Series WIDE INPUT NON-ISOLATED REGULATED SINGLE OUTPUT



Patent Protection RoHS

### MODEL SELECTION

K7805YMD-2000



Output Current  
Package Style  
Output Voltage  
Product Series

### FEATURES

- Efficiency up to 95%
- Temperature range: -40° C to +85° C
- Short circuit protection, thermal shutdown
- Low ripple and noise
- Metal case package
- No heat sink required
- Industry standard pinout

### APPLICATIONS

K78XYMD-2000 product is a high efficiency switching regulator, the efficiency of up to 95% means that very little energy is wasted as heat so there is no need for any heatsinks with their additional space and mounting costs. They are widely used in industrial control, instrumentation, and electric power applications.

### PRODUCT PROGRAM

Part Number	Input Voltage(VDC)		Output Voltage (VDC)	Output current (mA)	Efficiency (% ,Max)	
	Nominal	Range			Vin(Min)	Vin(Max)
K7805YMD-2000	24	20~28	5	2000	89	88
K7812YMD-2000	24	20~28	12	2000	95	95

### INPUT SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Units
No-load Input Power	Input voltage range	--	1	5	mA
Reverse Polarity Input		Forbidden			
Input Filter		Capacitor			

### OUTPUT SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Units
Output voltage accuracy	Input voltage range ,100% load	--	±2	±3	%
Line regulation	Input voltage range ,100% load	--	±0.4	±0.75	
Load regulation	Normal input, 10% to 100% load	--	±0.5	±1	
Ripple + Noise	20MHz Bandwidth	--	25	45	mVp-p
Short circuit protection		Continuous, auto- recovery			
Over Temperature Protection	IC inside	--	150	--	°C
Switch frequency	Input voltage range ,100% load	--	500	--	kHz
Temperature coefficient	-40°C ~+85°C	--	--	±0.015	%/°C
Dynamic load stability	Nominal input, 25%load step change	--	--	±200	mV
		--	--	1	ms
Max capacitance load		--	--	1000	µF

Note: "GND" pin can not vacant ,or it will damage the module.

### COMMON SPECIFICATIONS

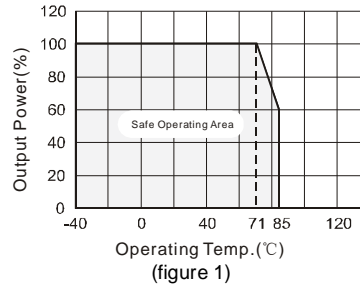
Item	Test Conditions	Min.	Typ.	Max.	Units
Case material		Aluminum			
MTBF	25°C (MIL-HDBK-217F)	1000	--	--	k hours
Weight		--	12	--	g

## ENVIRONMENTAL SPECIFICATIONS

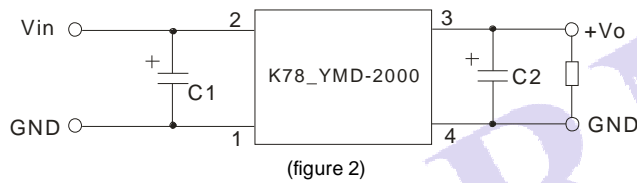
Item	Test Conditions	Min.	Typ.	Max.	Unit
Storage Humidity	Non-condensing	--	--	95	%
Operating Temperature	Power derating (above 71°C, see Figure 1)	-40	--	85	°C
Storage Temperature		-55	--	125	
Max. Case Temperature	Operating temperature curve range	--	--	100	
Lead Temperature	1.5mm from case for 10 seconds	--	--	300	
Cooling		Free air convection			

## TYPICAL CHARECTERISTICS

Temperature Derating Graph



## TYPICAL APPLICATION CIRCUIT



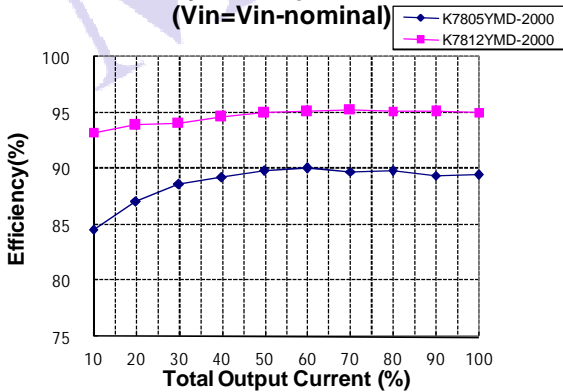
Part Number	C1 (Ceramic capacitor)	C2 (Ceramic capacitor)
K7805YMD-2000	10μF/50V	22μF/16V
K7812YMD-2000	10μF/50V	10μF/25V

Note:

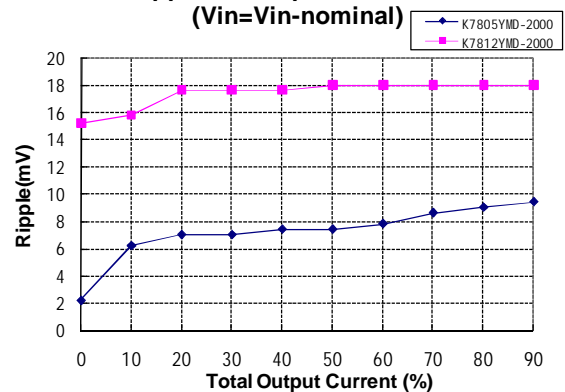
1. C1 and C2 are recommended and should be fitted close to the converter pins.
2. The capacitance of C1, C2 sees external capacitor table, it can be increased properly if required, and tantalum or low ESR electrolytic capacitors may also suffice.
3. No parallel connection or plug and play.

## CHARACTERISTIC CURVE

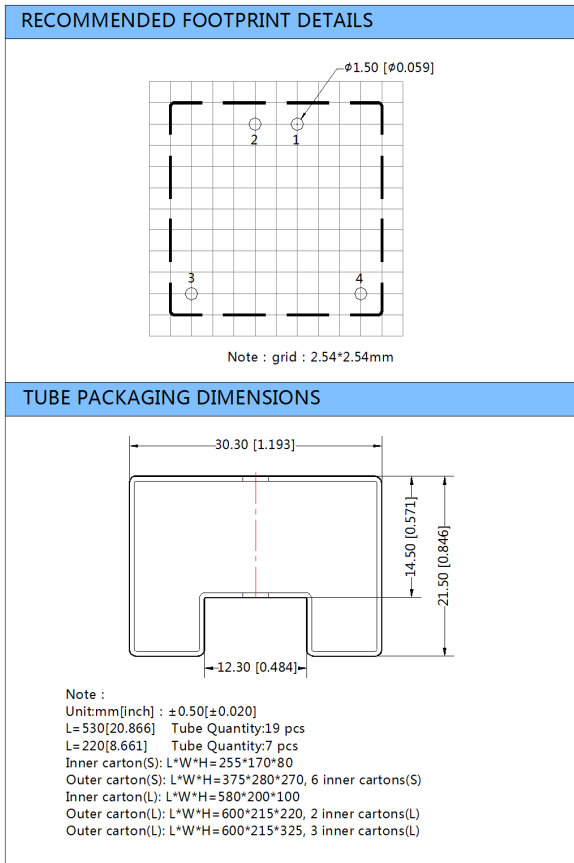
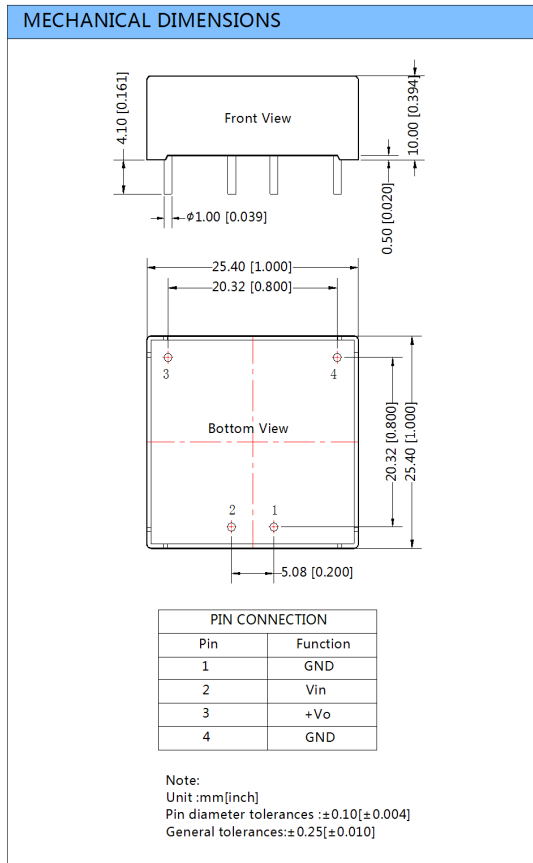
Efficiency VS Output Load curve  
(Vin=Vin-nominal)



Ripple VS Output Load curve  
(Vin=Vin-nominal)



## OUTLINE DIMENSIONS& RECOMMENDED FOOTPRINT&PACKAGING



**Note:**

1. Max. Capacitive Load is tested at input voltage range and full load.
2. All specifications are measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
3. In this datasheet, all test methods are based on our corporate standards.
4. All characteristics are for listed models, and non-standard models may perform differently. Please contact our technical support for more details.
5. Please contact our technical support for any specific requirement.
6. Specifications of this product are subject to changes without prior notice.

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