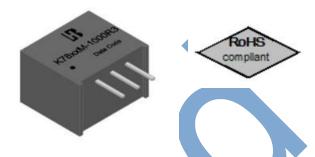


Features

- 6~36VDC wide input range
- Pin-out compatible with LM78xx linear regulators
- High Efficiency up to 97%
- Output Short Circuit Protection:
 Hiccup & Auto Recovery
- Over Temperature Protection
- Lead Free Design, RoHS Compliant
- Meet Safety Standard / Approval: IEC / EN60950-1



Description

The K78_M-1000R3 Series are non-isolated DC/DC converters suited to replace 1.0 Amp LM78xx linear regulators. Designed with highly efficiency, allow the operating temperature range of these units to be -40°C to +85°C in a 11.6x7.5x10.2mm non-conducted black plastic case. Further features include wide 6~36VDC input voltage range, short-circuits protection and over temperature protection.

Technical Specification All specifications are typical at nominal input, full load and 25°C unless otherwise stated.

Model Number	Input Voltage Range	Output Voltage (V)	Output Current (mA)		Eff .(2) (%)		Capacitive Load,
Model Number			Min. Load (1)	Full. Load	Vin_max	Vin_min	max. (3) (uF)
K7803M-1000R3	6-36V Nominal:24V	3.3	0	1000	90	80	2200
K7805M-1000R3	7-36V Nominal:24V	5	0	1000	94	85	2200
K7809M-1000R3	12-36V Nominal:24V	9	0	1000	95	90	1000
K7812M-1000R3	15-36V Nominal:24V	12	0	1000	96	92	1000
K7815M-1000R3	18-36V Nominal:24V	15	0	1000	97	93	1000

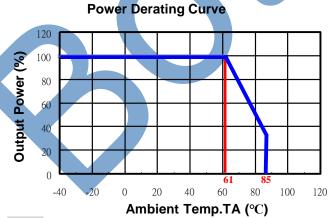
Input Specifications			
	K7803M-1000R3	24V nominal input	6~36V
	K7805M-1000R3	24V nominal input	7~36V
Input voltage	K7809M-1000R3	24V nominal input	12~36V
	K7812M-1000R3	24V nominal input	15~36V
	K7815M-1000R3	24V nominal input	18~36V
Input filter			Capacitor type
Environmental Specifications			
Operating ambient temperature			-40°C to +85°C (with derating)

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Maximum case temperature		+105°C		
Storage temperature range		-50°C to +125°C		
Relative humidity		95% RH max.		
Temperature coefficient		±0.03% / °C max.		
Output Specifications		-		
Output current		1A max.		
Voltage accuracy	0 -100% load and 24Vin	±1.5% typ. 3.3V±4% max. >=5V±3% max.		
Minimum load		0mA		
Line regulation	Full load	±0.75% max.		
Load Regulation	10 -100% load	±1.5% max.		
Ripple and Noise (20MHz Bandwidth)		85mVp-p max.		
Capacitive load		See table		
Short Circuit Protection(SCP)		Hiccup, automatic recovery		
Over Temperature Protection(OTP)	The IC Thermal Shutdown Temperature	150°C typ		
General Specifications				
Efficiency		See table		
Switching frequency (Fixed)	Pulse width modulation (PWM)	520kHz		
Reliability, calculated MTBF		10 x 10 5 Hrs		
Physical Specifications				
Case material		Plastic (UL94 V-0)		
Dimensions		0.46 × 0.295 × 0.4 Inch (11.6 × 7.5 × 10.2 mm)		
Weight		1.6g (0.057oz) typ.		

Attention: Please don't use it in overload condition.



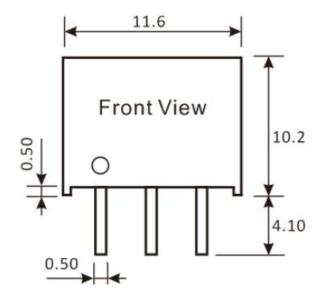
Note

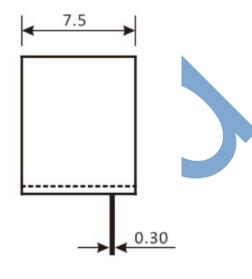
- 1. lo below this value will not damage these converters, however, they may not meet all listed specifications.
- 2. Typical value, tested at nominal input and full load.
- 3. Specifications subject to change without notice.
- 4. This power module is not internally fused. The input line fuse must always be used.

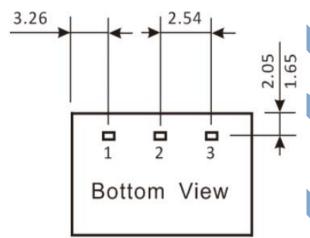
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Mechanical Dimensions







Pin Assignment				
Pin	efine			
1		Vin		
2	(GND		
3		Vout		

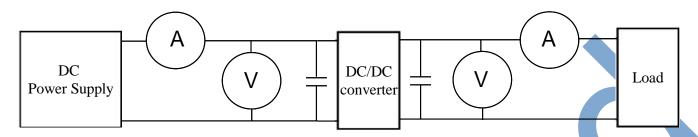
Unit: mm

Tolerance: XX.X= \pm 0.5, XX.XX= \pm 0.25



Test Configurations

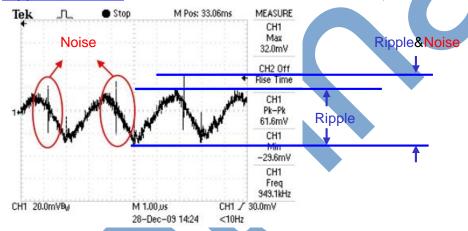
All specifications are typical at nominal input, full load and 25°C unless otherwise stated.



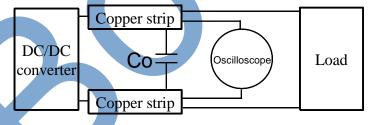
- ©DC Power Supply: It offers a wide voltage and current range precisely.
- ⊚Current meter (A): Accuracy→200μA ~ 200mA 4 ranges+(0.2% rdg + 2 digits)

2000mA ~ 20A 2 ranges+(0.3% rdg + 2 digits).

- \bigcirc Voltage meter (V): Accuracy \rightarrow ±(0.03% rdg + 4 digits).
- OLoad: At full load.
- OWires: The resistance of the wires must be small.
 - 1. Ripple and Noise: as shown below. The bandwidth is 0-20MHz.



Output Ripple&Noise measurement test circuit: as shown below.

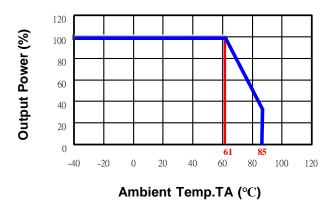


Co: usually 1uF MLCC and 10uF tantalum capacitor.

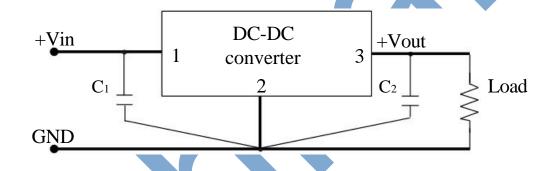
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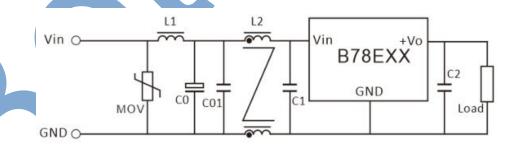
Temperature derating curve: The DC-DC converter will operate over a wider temperature range if less power
is drawn from the output and the device is already running. The temperature derating curve shows the operating
power-temperature range. As shown below.



3. Application circuit: as shown below. C1=10uF/50V MLCC, C2 =22uF/25V MLCC.



4.EMC Filter Suggestion according to EN55032 CLASSB:



MOV	L1	СО	C01	L2	C1	C2
20D470K	300uH	470uF/50V	4.7uF/50V MLCC	5mH	10uF/50V MLCC	22uF/10V MLCC

Rev: A0

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