Kaga Electronics Inc.

PM-500A SERIES
Non Isolated & Regulated

FEATURES

- **PIN-OUT COMPATIBLE WITH LM78XX LINEAR REGULATORS**
- **SMALL SIZE AND LOW PROFILE : L X W X H = 0.46" X 0.30" X 0.40"**
- **HIGH EFFICIENCY UP TO 96%**
- **LOW STANDBY CURRENT**
- **SHORT CIRCUIT PROTECTION**
- **OVER-TEMPERATURE PROTECTION**
- **LOW OUTPUT RIPPLE AND NOISE**
- **NEGATIVE OUTPUT APPLICATION (OPTINOAL)**
- **DESIGN MEETS UL60950-1, EN60950-1 AND IEC60950-1**
- **COMPLIANT TO RoHS**

APPLICATIONS

Wireless Network
Telecom/Datacom
Industry Control System
Distributed Power Architectures
Semiconductor Equipment
Microprocessor Power Applications

DESCRIPTION

The PM-500A SERIES are high performance switching regulators are suited to replace 78xx linear regulators and pin compatible. It provides 500mA output current and high efficiency up to 96%. The PM-500 series also can be used to converter a positive voltage into negative voltage.

TECHNICAL SPECIFICATION

All specifications are typical at nominal input, full load and 25ºC otherwise noted

OUTPUT SPECIFICATIONS			
Output current	See table		500mA, max.
Voltage accuracy			±2%
Minimum load			0%
Line regulation			±0.2%
Load regulation	10% to 100% of F.L		± 0.4%
Ripple and noise 20MHz bandwidth		20mVp-p	30mVp-p
Temperature coefficient			±0.02%/℃, max.
Cooling Method			Free Air Flow
Output short-circuit			Continuous, automatics recovery

GENERAL SPECIFICATIONS		
Efficiency (Note 3)		See table
Isolation voltage		None
Switching frequency(KHz)	100%load, Typ. 330	280,min 450max
Design meet safety standard		IEC60950-1, UL60950-1, EN60950-1
Case material		Non-conductive black plastic
Base material		None
Potting material		Silicon (UL94-V0)
Dimensions		0.476X 0.30 X 0.40Inch (11.6 X 7.55 X 10.16 mm)
Weight		2.00g
MTBF (Note 1)	MIL-HDBK-217F@25 ºC	2000K hours

INPUT SPECIFICATIONS		
Input voltage range for Positive output	See table	4.75 ~ 32VDC
Maximum input current	Vin=Vin(min), Io=Io(max)	500mA
Input filter		C filter
Input reflected ripple current		100mA

ENVIRONMENTAL SPECIFICATIONS	
Operating temperature range	–40ºC ~ +85ºC(with derating)
Storage temperature range	–55ºC ~ +125ºC
Thermal shock	MIL-STD-810F
Vibration	MIL-STD-810F
Relative humidity(non-condensing)	95% RH
Over temperature protection	(Internal IC junction) 160 ºC

FEATURE SPECIFICATIONS			
Start up time	Nominal Input and constant resistive load	Power up	0.5mS
Thermal Impedance			85W

Note
1. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40ºC. (Ground fixed and controlled environment)
   MIL-HDBK-217F Notice2 @Ta=25 ºC, Full load (Ground, Benign, controlled environment)
2. Typical value at nominal input and no load.
3. Typical value at minimum input or maximum input voltage and full load.
4. Tested with minimum input and constant resistive load.

CAUTION: This power module is not internally fused. An input line fuse must always be used.

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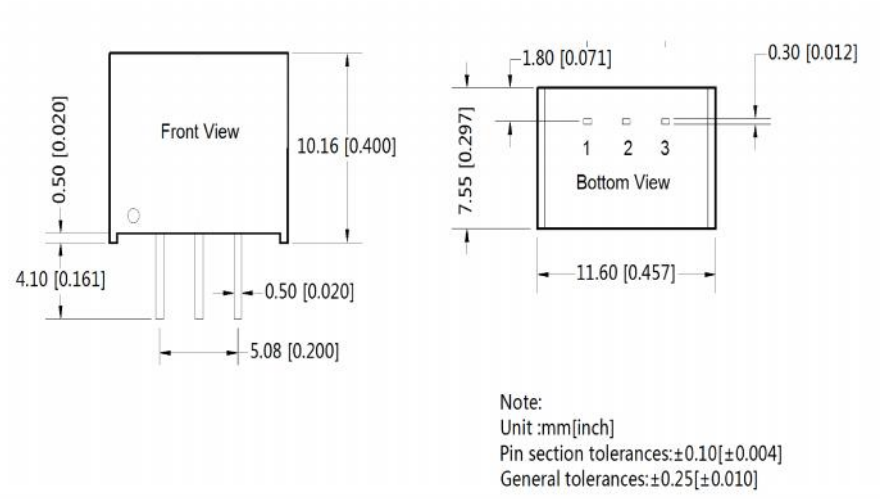
Model Name	Input Voltage	Nominal Input	Output Voltage	Output Current		Efficiency (%) (3)	
					Max. Load	Min. Vin	Max. Vin
PM-500A33	4.75 ~ 28VDC	24VDC	3.3VDC		500mA	91	81
PM-500A50	6.5~ 32VDC	24VDC	5.0VDC			94	86
PM-500A65	8 ~ 32VDC	24VDC	6.5VDC			94	87
PM-500A90	11 ~ 32VDC	24VDC	9.0VDC			95	91
PM-500A120	15 ~ 32VDC	24VDC	12.0VDC			95	92
PM-500A150	18 ~ 32VDC	24VDC	15.0VDC			96	93

Mechanical Drawing:



PIN CONNECTION	
PIN	DEFINE
1	+VIN
2	GND
3	+VOUT