MEGA ELECTRONICS INC.

M78xx05 Series

WIDE INPUT NON-ISOLATED SWITCHING REGULATOR
VERY LOW PROFILE SIP-3 PACKAGE
REGULATED SINGLE OUTPUT

FEATURES

- Efficiency Up To 96%
- No need for heat sinks
- Pin-out compatible with LM78XX Linear
- Wide input range
- Short circuit protection, Thermal Shutdown
- Low ripple and noise

APPLICATIONS

The M78xx05 Series high efficiency switching regulators are ideally suited to replace LM78xx linear regulators and are pin compatible. The efficiency of up to 96% means that very little energy is wasted as heat, eliminating the need for heat sinks and conserving board space.

PRODUCT PROGRAM

Part Number	Input	Output		Efficiency(%)	
SIP-3	Voltage Range (V)	Voltage (V)	Current (mA)	Min.Vin	Max.Vin
M783305	4.75-28	3.3	500	90	80
M785005	6.5-32	5.0	500	93	84
M786505	8-32	6.5	500	94	87
M789005	11-32	9.0	500	95	91
M781205	15-32	12	500	95	92
M781505	18-32	15	500	96	93

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

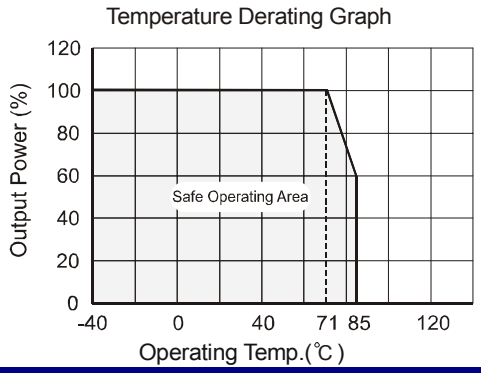
OUTPUT SPECIFICATIONS

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 bandwith		20	35	mVp-p
Short Circuit Input Power			0.53	1.20.8	w
Short circuit protection	Continuous, automatic recovery				
Output Current Limit				2000	mA
Switching frequency		280	330	380	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 ~+85 °C ambient			0.02	%/°C
Max. Capacitance Load				1000	µF

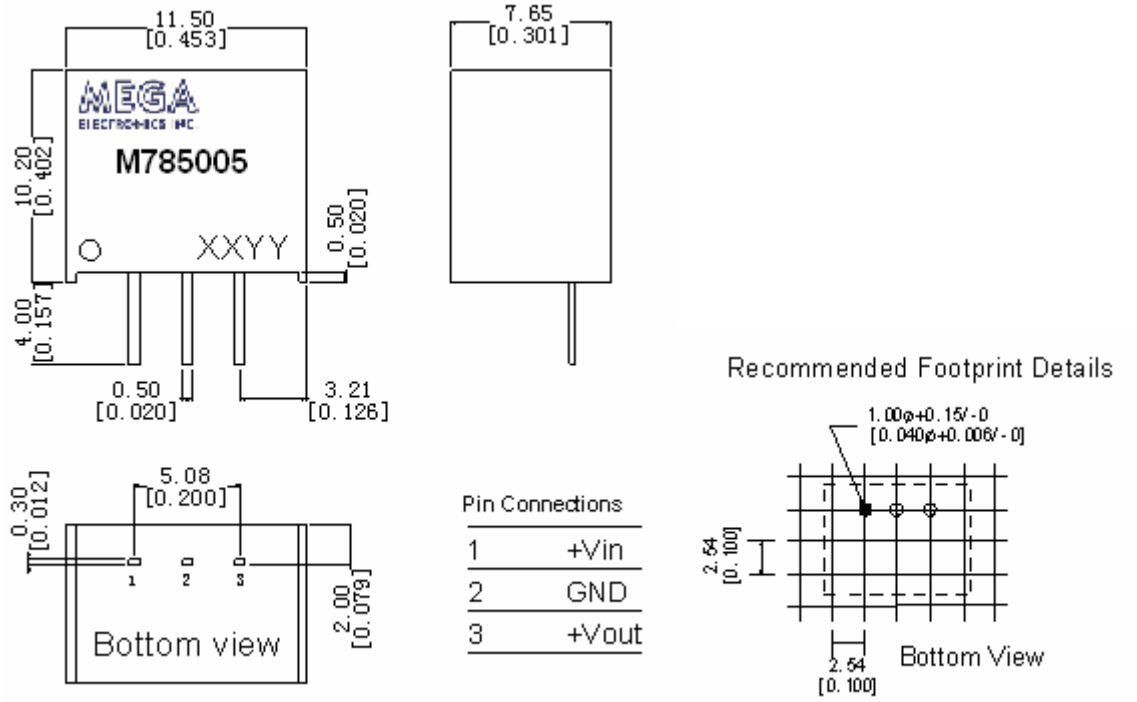
COMMON SPECIFICATION

Operating Temperature Range	-40 °C ~+85°C
Operating Case Temperature	+100°C (max)
Storage Temperature Range	-55 °C ~+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	2.0 g
***Lead Temperature 1.5mm from case for 10 seconds.	

TYPICAL CHARECTERISTICS

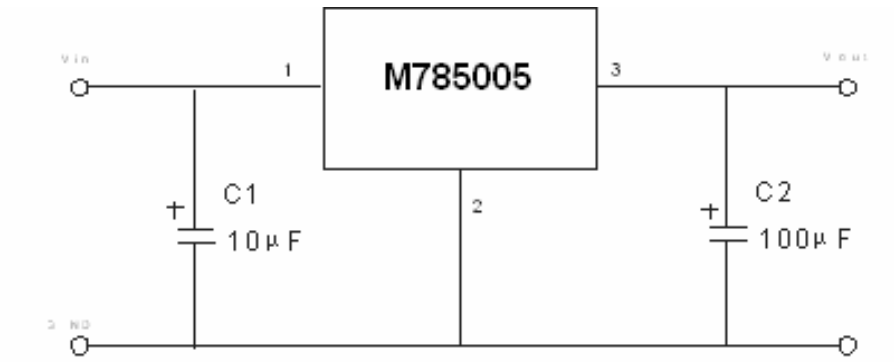


PACKAGE STYLE AND PINNING mm(inches)



Tolerances :±0.25(0.01)

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.

C2 Optional, general used 100μF/25V electrolytic capacitor

NOTE: No Parallel connection or plug and play.

Characteristics

Efficiency

Ripple