

## Features

- Efficiency up to 94%, non-isolated, no need for heatsinks!
- Pin-out compatible with LM78XX Linear
- Very low profile (L\*W\*H=11.5\*7.5\*10.2mm)
- Wide input range (4.75V ~ 18V)
- Short circuit protection, thermal shutdown
- UL94V-0 Package Material
- Non standard outputs available as specials
- Low ripple and noise

Rev.0

## Selection Guide

Part Number SIP3	Input Range (V)	Output Voltage (V)	Output Current (A)	Efficiency	
				Min. Vin (%)	Max. Vin (%)
R-781.8-1.0	4.75 – 18	1.8	1.0	82	76
R-782.5-1.0	4.75 – 18	2.5	1.0	87	81
R-783.3-1.0	4.75 – 18	3.3	1.0	90	84
R-785.0-1.0	6.5 – 18	5.0	1.0	94	89

## Specifications ( typical at 25°C, 10% minimum load, unless otherwise specified )

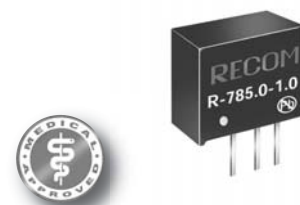
Characteristics	Conditions	Min.	Typ.	Max.
Input Voltage Range	All Series	4.75		18V
Output Voltage Range	All Series	1.5		5.5V
Output Current	All Series	0*		1000mA
Output Current Limit	All Series			3000mA
Short Circuit Input Current (Vin =12V)	All Series			100mA
Internal Power Dissipation				0.4W
Short Circuit Protection			Continuous, automatic recovery	
Output Voltage Accuracy (At 100% Load)	All Series		±2	±3%
Line Regulation (100% Load, Vin max.)	All Series		0.2	0.4%
Load Regulation (10 to 100% full load)	All Series		0.4	0.6%
Dynamic Load Stability	100% <-> 50% load		±85mV	±100mV
Ripple & Noise (20Mhz BW)	All Series		20mVp-p	30mVp-p
Temperature Coefficient	-40°C ~ +85°C ambient			0.015%/°C
Max capacitance Load				220µF
Switching Frequency		280	350	430kHz
Quiescent Current	Vin = min. to max. at 0% load		5	7mA
Operating Temperature Range		-40°C		+85°C
Operating Case Temperature (with derating)				+100°C
Storage Temperature Range		-55°C		+125°C
Case Thermal Impedance				70°C/W
Thermal Shutdown	Internal IC junction			+160°C
Conducted Emissions	EN55022			Class B
Radiated Emissions	EN55022			Class B
ESD	EN61000-4-2			Class A
Radiated Immunity	EN61000-4-3			Class A
Fast Transient	EN61000-4-4			Class A
Conducted Immunity	EN61000-4-6			Class A
Magnetic Field Immunity	EN61000-4-8			Class A
Package Weight				1.9g
MTBF (+25°C)	Detailed Information see Application Notes chapter "MTBF"	using MIL-HDBK 217F		13338 x 10 <sup>3</sup> hours.
(+71°C)		using MIL-HDBK 217F		3880 x 10 <sup>3</sup>

\*Notes: Operation under no load will not damage these devices, however they may not meet all specifications. A minimum load of 10mA is recommended

**INNOLINE**  
DC/DC-Converter

# R-78xx-1.0 Series

## 1.0 AMP SIP3 Single Output



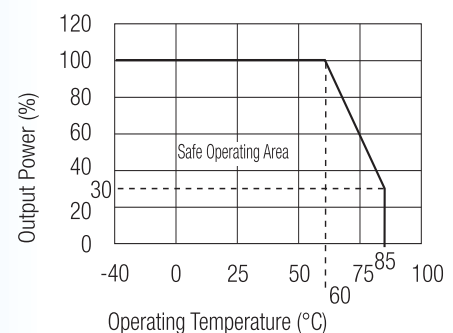
**EN-55022 Certified**  
**EN-55024 Certified**  
**EN-60601-1-2 Certified**

**RECOM**

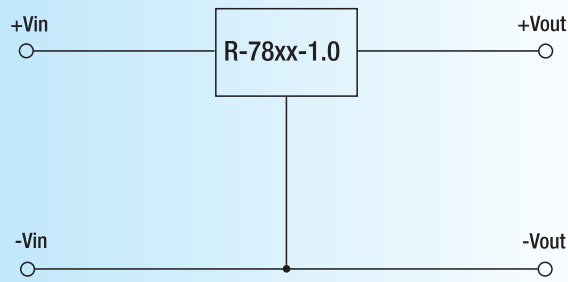
## Description

The R-78xx-1.0 series switching regulators are ideally suited to replace 1 Amp 78xx linear regulators and are pin compatible. Efficiencies of up to 97% means that very little energy is wasted as heat so there is no need for any heat sinks with their additional space and mounting costs.

## Derating-Graph (Ambient Temperature)



**Standard Application Circuit**

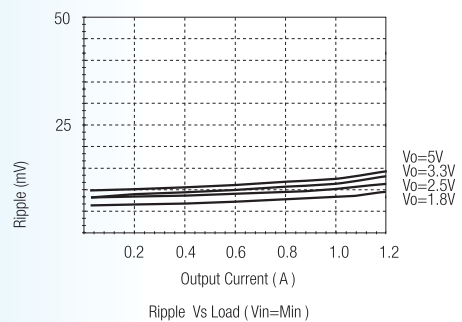
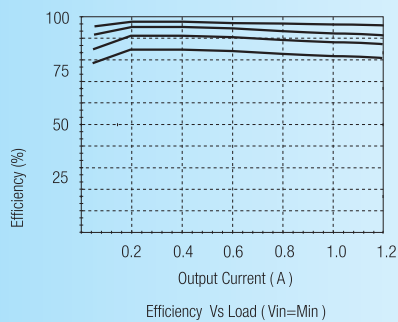
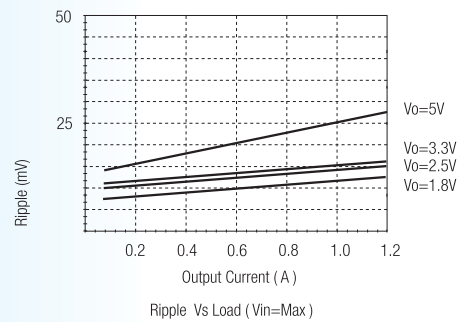
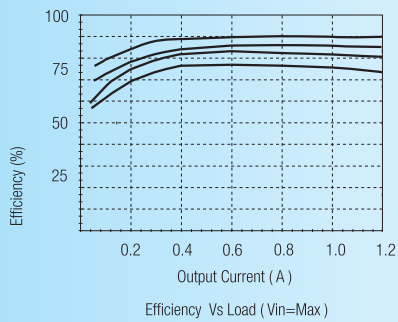
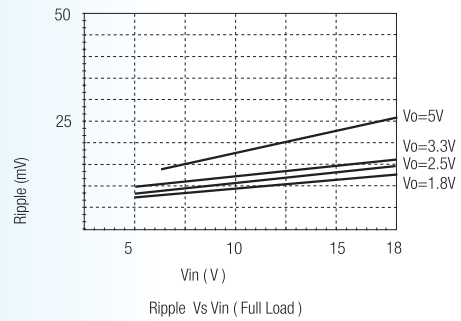
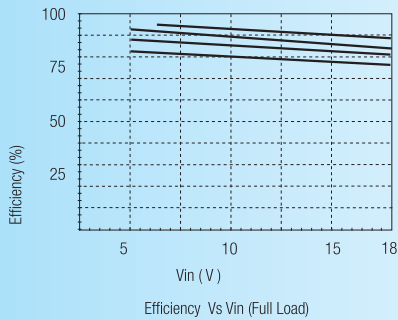


Add a blocking diode to Vout if current can flow backwards into the output, as this can damage the converter. when it is powered down.

**Characteristics**

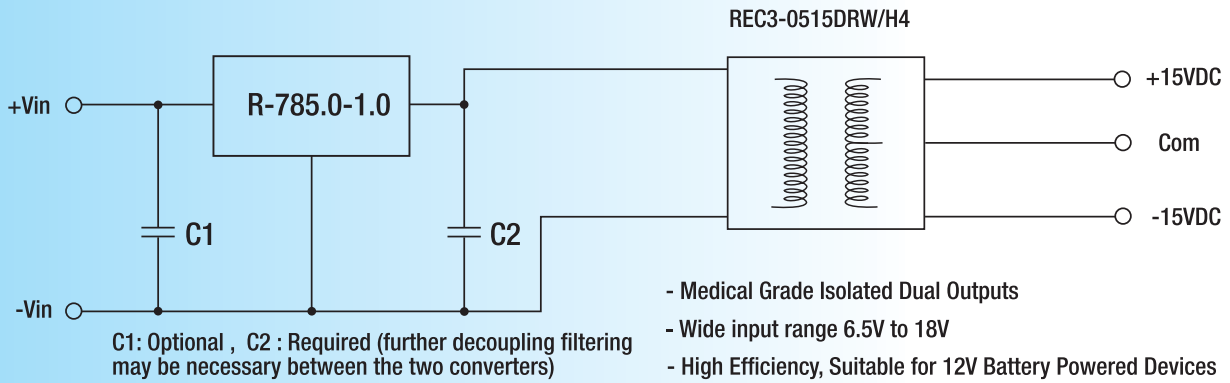
## Efficiency

## Ripple

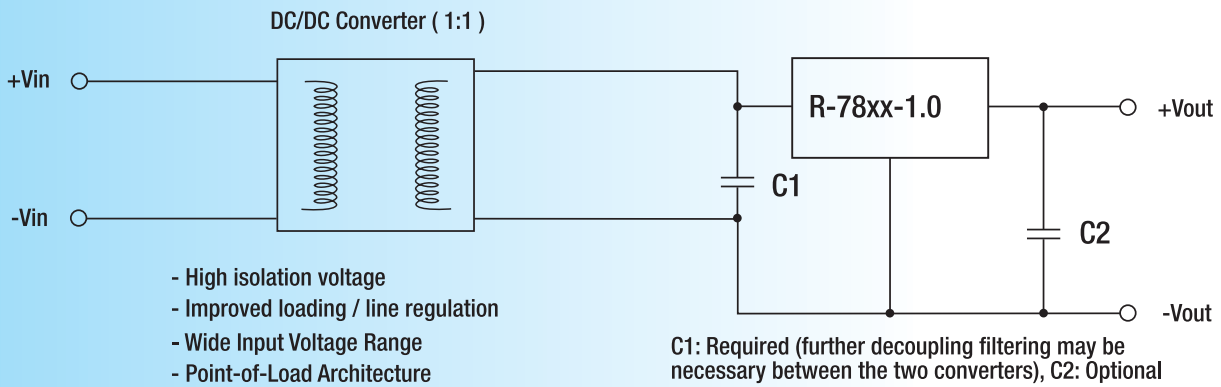


## Application Examples

High efficiency, isolated, dual regulated outputs



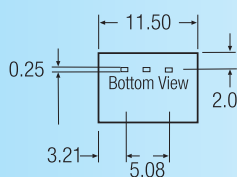
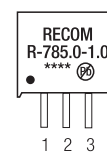
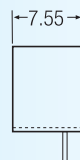
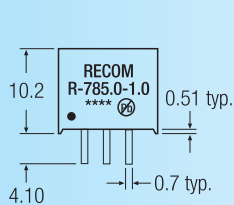
Isolated (up to 6KV), wide Input range regulated output



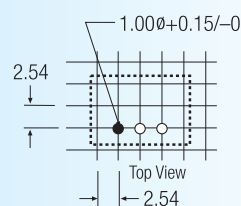
## Package Style and Pinning (mm)

SIP3 PIN Package

3rd angle projection



Recommended Footprint Details



Pin Connections

Pin #	Connection
1	+Vin
2	GND
3	+Vout

xx.x ±0.5mm  
xx.xx ±0.25mm