

## Features

- Efficiency up to 97%, Non isolated, no need for heatsinks
- Pin-out compatible with LM78XX Linears
- Very low profile ( L\*W\*H=11.5\*7.5\*10.2 )
- Wide input range.(4.75V ~ 34V)
- Short circuit protection, Thermal shutdown
- Non standard outputs available as specials between 1.5V ~15V
- Low ripple and noise
- RoHS Compatible

**INNOLINE**  
DC/DC-Converter

# R-78xx-0.5 Series

**0.5 AMP**  
**SIP3**  
**Single Output**

### Selection Guide

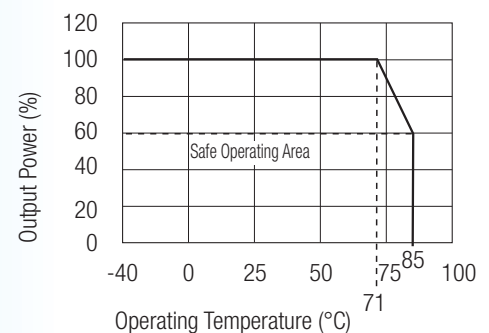
Part Number	Input Range (1) (V)	Output Voltage (V)	Output Current (A)	Efficiency (%)	
				Min. Vin	Max. Vin
R-781.5-0.5	4.75 – 30	1.5	0.5	73	63
R-781.8-0.5	4.75 – 34	1.8	0.5	82	71
R-782.5-0.5	4.75 – 34	2.5	0.5	87	77
R-783.3-0.5	4.75 – 34	3.3	0.5	91	81
R-785.0-0.5	6.5 – 34	5.0	0.5	94	86
R-786.5-0.5	8.0 – 34	6.5	0.5	95	88
R-789.0-0.5	11 – 34	9.0	0.5	96	92
R-7812-0.5	15 – 34	12	0.5	97	94
R-7815-0.5	18 – 34	15	0.5	97	95

Note 1:1.5V Output can be unstable with  $V_{in} > 30VDC$



**RECOM**

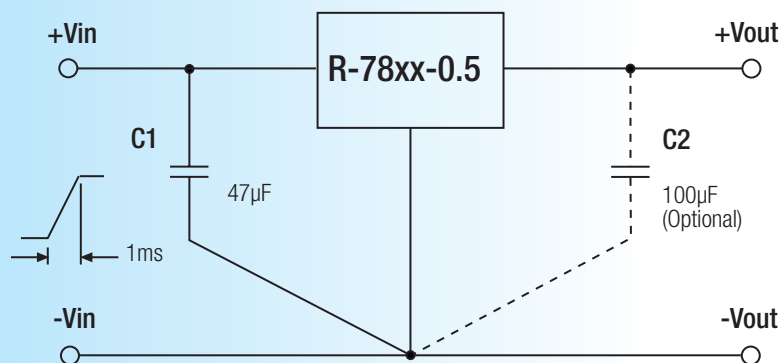
## Derating-Graph (Ambient Temperature)



**Specifications (refer to the standard application circuit, Ta: 25°C)**

Characteristics	Conditions	Min.	Typ.	Max.
Input Voltage Range	1.5V	4.75		34.0V
	1.8V to 15.5V	4.75		30.0V
Output Voltage Range	All Series	1.5		15.5V
Output Current	All Series	50		500mA
Output Current Limit	All Series			2000mA
Short Circuit Input Current	All Series		10	30mA
Internal Power Dissipation				0.4W
Output Voltage Accuracy (At 100% Load)	All Series		±2	±3%
Line Voltage Regulation (Vin = min. to max. at full load)	1.5V to 6.5V		0.2	0.4%
	9V to 15.5V		0.1	0.2%
Load Regulation (10 to 100% full load)	1.5V to 6.5V		0.4	0.6%
	9V to 15.5V		0.25	0.4%
Dynamic Load Stability	100% <-> 50% load		±75mV	
	100% <-> 10% load			±100mV
Ripple & Noise (without Output Capacitor)	1.5V to 6.5V		20mVp-p	30mVp-p
	9V to 15.5V		30mVp-p	40mVp-p
Ripple & Noise (with Output Capacitor=100µF)	1.5V to 6.5V		15mVp-p	20mVp-p
	9V to 15.5V		25mVp-p	35mVp-p
Temperature Coefficient	-40°C ~ +85°C ambient			0.015%/°C
Max capacitance Load				220µF
Switching Frequency		280	330	380kHz
Quiescent Current	Vin = min. to max. at 0% load		5	7mA
Operating Temperature Range		-40°C		+85°C
Operating Case Temperature				+100°C
Storage Temperature Range		-55°C		+125°C
Case Thermal Impedance				70°C / W
Thermal Shutdown	Internal IC junction		+160°C	
MTBF (+25°C)	using MIL-HDBK 217F			21,098 x 10 <sup>3</sup> hours
				4,212.x 10 <sup>3</sup> hours

**Standard Application Circuit**

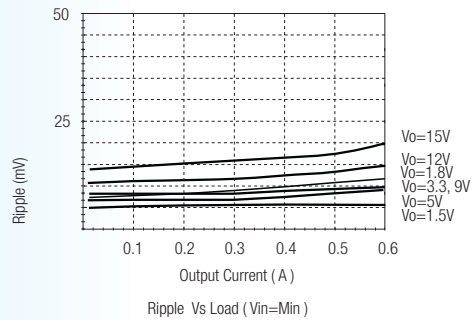
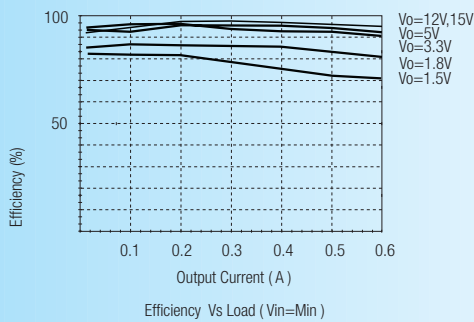
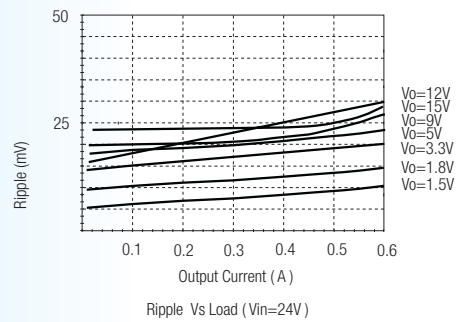
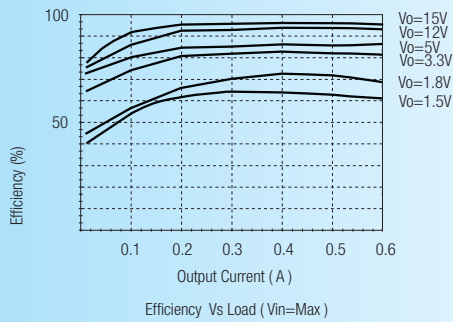
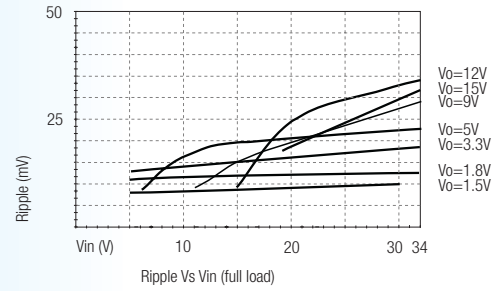
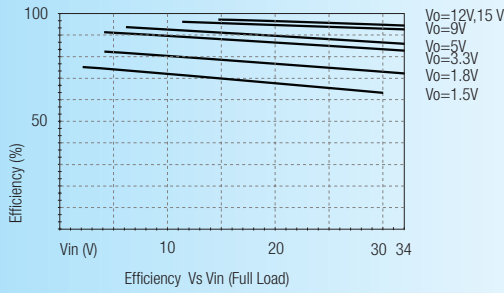


To protect the converter during power-up, use soft start Vin and C1=47µF

**Characteristics**

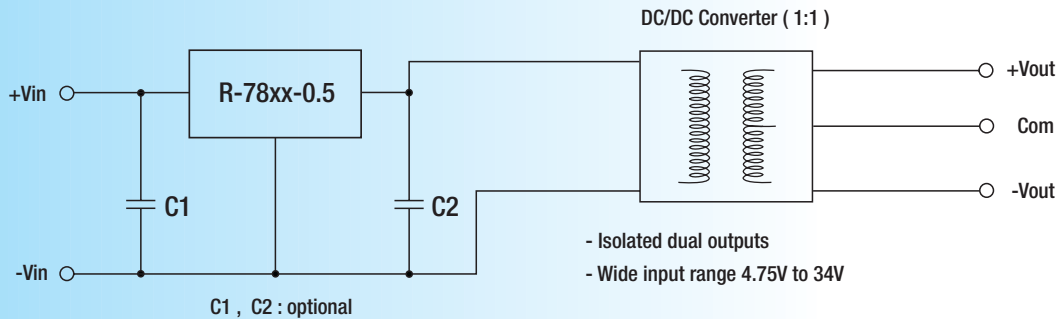
## Efficiency

## Ripple

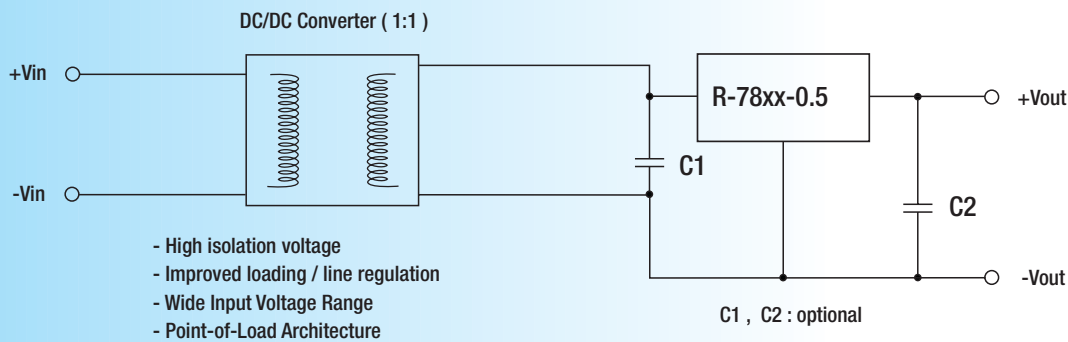


**Application Examples**

High efficiency, isolated, dual unregulated outputs

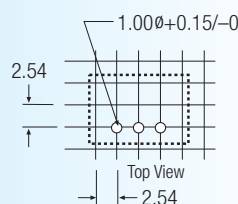
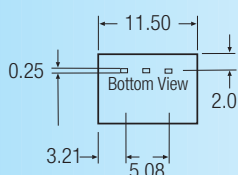
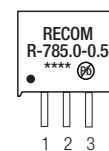
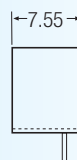
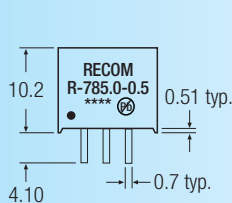


Isolated (up to 6KV), wide Input range regulated output



**Package Style and Pinning (mm)**

SIP3 PIN Package



Pin Connections

Pin #	
1	+Vin
2	GND
3	+Vout

xx.x ±0.5mm  
xx.xx ±0.25mm