

## Features

- Efficiency up to 96%, no need for heatsinks!
- Build-in Diode protection Circuit
- Low profile (L\*W\*H=11.5\*8.5\*17.5mm)
- Wide input range
- Short Circuit Protection,
- RoHS compatible

## Description

The R-78W series offers wired 0.5A switching regulators which are ideally suited to offer a stable voltage supply without the need for a PCB for applications like high power LED lighting, battery powered systems, cooling systems, or fans. Due to the high efficiencies of up to 93% there is no need for a heat sink. The compact modules feature fully protected outputs and draw only 1mA under no load conditions.

## Selection Guide

Part Number	Input Range (V)	Output Voltage (V)	Output Current (A)	Efficiency		Capacitive Load (μF)
				min. Vin (%)	max. Vin (%)	
R-78W5.0-0.5	6.5 - 32	5	0.5	93	85	220
R-78W9.0-0.5	11 - 32	9	0.5	95	91	220
R-78W12-0.5	15 - 32	12	0.5	96	93	220

## Specifications ( measured at T<sub>A</sub> 25°C, full load load after warm-up )

Characteristics	Conditions	Min.	Typ.	Max.
Input Voltage Range		6.5V		32V
Output Current <sup>(2)</sup>				500mA
Short Circuit Protection		Continuous, automatic recovery		
Output Voltage Accuracy			±2%	±3%
Line Regulation	5V		0.2%	0.4%
(LL to HL at Full Load)	9V / 12V		0.1%	0.2%
Load Regulation	5V		0.4%	0.6%
(10% - 100%)	9V / 12V		0.25%	0.4%
Ripple & Noise (20Mhz BW Limited)			50mVp-p	75mVp-p
Temperature Coefficient	-40°C to 85°C ambient			0.015% / °C
Switching Frequency		280KHz	330KHz	380KHz
Operating Temperature Range		-40°C		+85°C
Maximum Case Temperature				+100°C
Storage Temperature Range		-55°C		+125°C
Case Thermal Impedance			70°C / W	
Relative Humidity		5%		95% RH
Weight			4.8g	
Packing Quantity <sup>(3)</sup>			25pcs	
Case Material		non conductive plastic		
Potting Material		Epoxy (UL94V-0)		
MTBF		9368 x 10 <sup>3</sup> hours		

## Certifications

General Safety EN60950-1

## Notes:

Note1: 6800uF with <1s start-up time

Note2: Operation under no load will not damage the device, however they may not meet all specifications. A minimum load of 6mA is recommended.

Note3: 5 bubble packs each containing 5pcs in a cardboard box

**INNOLINE**  
DC/DC-Converter  
with 3 year Warranty

**RECOM**

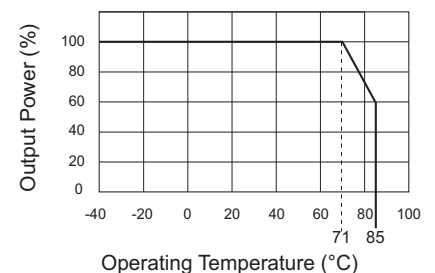
## 0.5 AMP Single Output



**EN-60950-1 (Pending)**

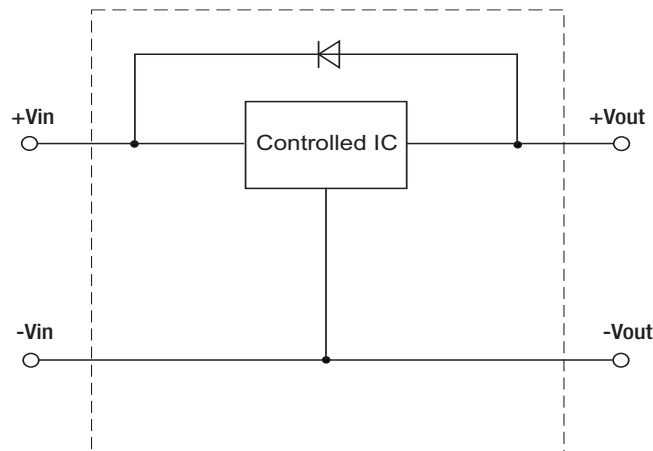
**R-78W-0.5**

## Derating-Graph (Ambient Temperature)



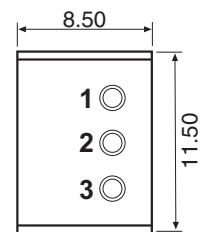
Refer to Application Notes

Application Examples

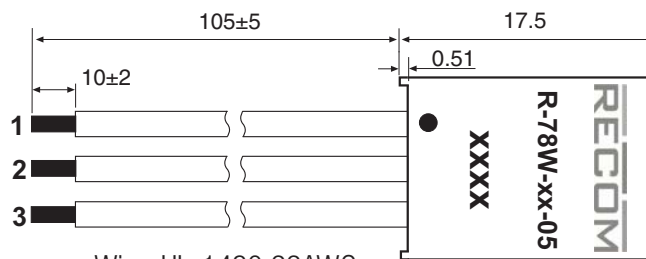


\* An internal blocking diode can prevent reverse current flow backwards into the output, as this can damage the converter when it is powered down.

Package Style and Pinning (mm)



Bottom View



Wire: UL-1430 22AWG

Wire Connections

# Wire color	Function
1 Red	+Vin
2 Black	GND
3 Brown	+Vout

Tolerance ±0.5mm unless otherwise specified