

## Features

## Regulated Converters

- Ultracompact Low Profile AC-DC Power Supply
- 3 Watt PCB Mount Package
- Universal Input Voltage Range
- Class II Power Supply with 3kVAC Isolation
- Only 80mW Consumption in Standby
- -25°C to +85°C Operating Temperature
- Low Output Ripple/Noise
- Short Circuit Protected Outputs
- EN, UL and CE Certified

## Description

The RAC03-SC series is an ultra-compact universal input AC/DC power module for PCB mounting. It features high efficiency, low standby power, high operating temperature, soft start, low output ripple/noise, overload and short-circuit protection as well as a built-in EMC Class B filter. Output voltages range from 3.3VDC to 24VDC, including a 3.8VDC version designed for battery chargers and GSM modems.

## Selection Guide

Part Number	Input Range (VAC)	Output Voltage (VDC)	Output Current (mA)	Efficiency (%)	Max Capacitive Load <sup>(1+2)</sup>
RAC03-3.3SC	80-264	3.3	900	67	6800µF
RAC03-3.8SC	80-264	3.8	900	67	6800µF
RAC03-05SC	80-264	5	600	72	4000µF
RAC03-09SC	80-264	9	333	76	3000µF
RAC03-12SC	80-264	12	250	76	680µF
RAC03-15SC	80-264	15	200	76	470µF
RAC03-24SC	80-264	24	125	78	200µF

## Specifications (measured at TA 25°C, full load after warm-up)

Input Voltage Range (with derating)	80-264VAC or 115-370VDC	
Rated Power	3 Watts max.	
Input Frequency Range (for AC Input)	47-63Hz	
Input Current (full load)	115/230VAC	85mA/40mA max.
No Load Power Consumption	80mW typ.	
Inrush Current (<0.5ms)	115/230VAC	30/60A max.
Leakage Current	0.85mA max.	
Output Voltage Tolerance (combined Tolerance, Line Reg and Load Reg at full load)	±5% max.	
Line Voltage Regulation	low line, high line at full load	±3% max.
Load Voltage Regulation	10% to 100% full load	±6% max.
Output Ripple and Noise (20MHz BW limited)	3.3V, 3.8V, 5V Output	120mVp-p max.
	All others	150mVp-p max.
Operating Frequency @ full load	35kHz typ	
Hold-up Time	115 VAC	15ms typ.
	230VAC	80ms typ.
Minimum Load = 0%	specifications valid for 10% minimum load only	
RMS Isolation Voltage	input to output	3kVAC / 1 minute
Isolation Resistance	input to output	1 GΩ min.
Isolation Capacitance	input to output	1000pF typ.
Short Circuit Protection	Hiccup, Automatic Restart	
Over Voltage Category	OVC II	
Operating Temperature Range <sup>(3)</sup>	(natural convection, without derating)	-25°C to +75°C
	(natural convection, with derating)	-25°C to +85°C
Storage Temperature Range	-40°C to +100°C	
Humidity	non-condensing	95% RH max
Case Material	Plastic Case, Silicon filled (UL94V-0)	
Package Weight	30g	
Packing Quantity	12 pcs	
EMC	Conducted and Radiated	EN 55022 Class B
	Noise Immunity	EN 55024

continued on next page

## POWERLINE

### AC/DC-Converter

with 3 year Warranty

# RECOM

## 3 Watt Single Output

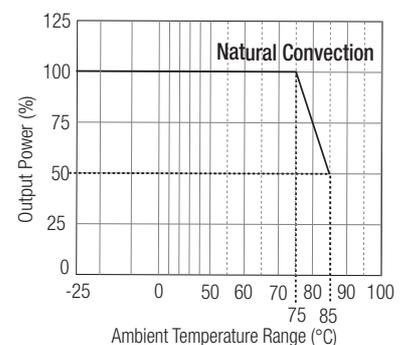
  
E224736



**EN-60950-1 Certified**  
**UL-60950-1 Certified**

## RAC03-SC

## Derating Graph (Ambient Temperature)



Refer to Application Notes

## Specifications (measured at TA 25°C, full load after warm-up)

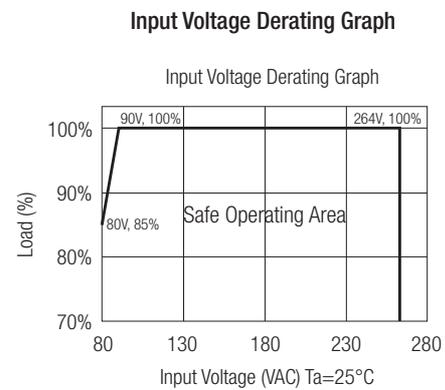
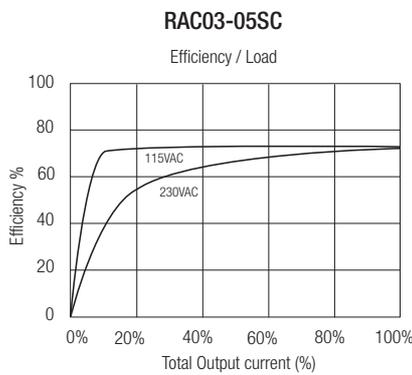
MTBF	+25°C	>550 x 10 <sup>3</sup> hours
230VAC	+55°C	>285 x 10 <sup>3</sup> hours
using MIL-HDBK-217F	+80°C	>76 x 10 <sup>3</sup> hours
Certifications:		
UL General Safety	File Nr. E224736	UL-60950-1, 2nd Edition
EN General Safety	SPCLVD 1202026	EN-60950-1, 2nd Edition
CE	Report: T110809202-E	EN55022 Class B

### Notes:

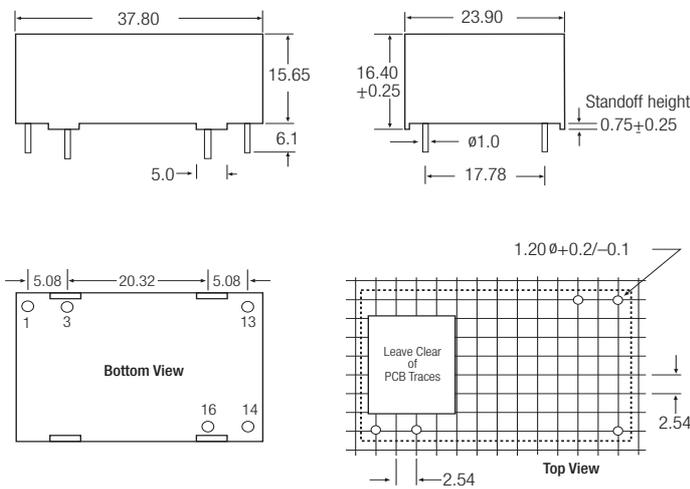
Note1: Measured @ 230VAC / 50Hz / Ta=25°C with constant resistant mode at full load.

Note2: If used @ 115VAC / 60Hz with full load, max. capacitive load is less, please contact RECOM for detailed information.

Note3: Start up only is guaranteed at temperatures down to -25°C. Other specifications may not be met.



## Standard Package Style and Pinning



### Pin Connections

Pin #	Single Output
1	VAC in (L)
3	VAC in (N)
13	NC
14	-VDC out
16	+VDC out

NC = No Connection

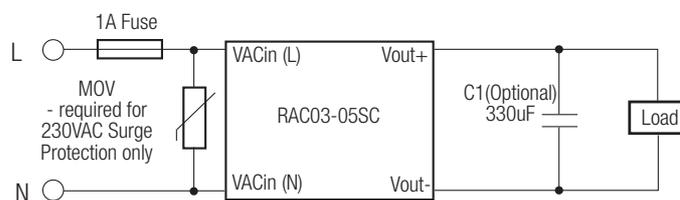
Tolerance ± 0.5 mm unless otherwise specified

## Recommended Application Circuit

Compact single output regulated power supply

Suggested fuse rating: 1A Slow Blow

An external MOV is required for 230VAC operation. The varistor should comply with IEC-61051-2. e.g. Epcos S14 Series



Add C1 to reduce output ripple (use low ESR type)

The product information and specifications are subject to change without prior notice. All products are designed for non-safety critical commercial and industrial applications. The Buyer agrees to implement safeguards that anticipate the consequences of any failures that might cause harm, loss of life and/or damage property.