

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 ⁽¹⁺²⁾
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 All others	120mVp-p max. 150mVp-p max.
Operating Frequency @ full load		35kHz typ
Hold-up Time	115 VAC 230VAC	15ms typ. 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 ⁽³⁾	(natural convection, without derating) (natural convection, with derating)	-25°C to +75°C -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 Noise Immunity	EN 55022 Class B EN 55024

continued on next page

POWERLINE

AC/DC-Converter

with 3 year Warranty

RECOM

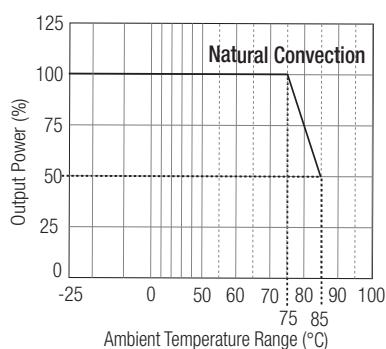
3 Watt Single Output



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

RAC03-SC

Derating-Graph (Ambient Temperature)



Refer to Application Notes

POWERLINE

AC/DC-Converter

RAC03-SC

Series

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

MTBF	+25°C	>550 x 10 ³ hours
230VAC	+55°C	>285 x 10 ³ hours
using MIL-HDBK-217F	+80°C	>76 x 10 ³ 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:

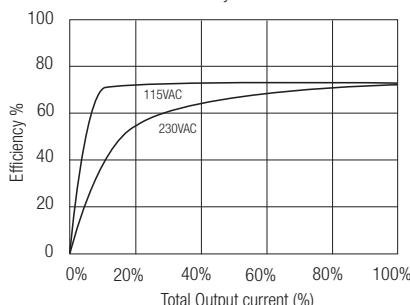
Note1: Measured @ 230VAC / 50Hz / Ta=25°C with constant resistive mode at full load.

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.

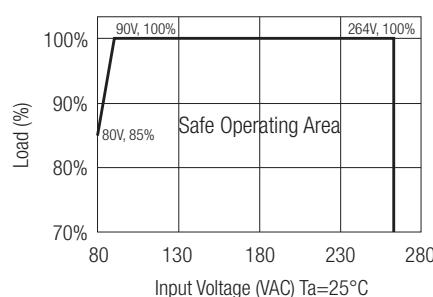
RAC03-05SC

Efficiency / Load

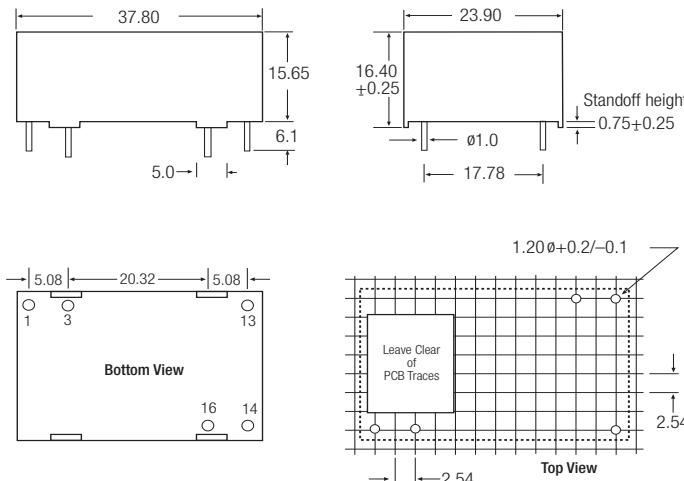


Input Voltage Derating Graph

Input Voltage Derating Graph



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

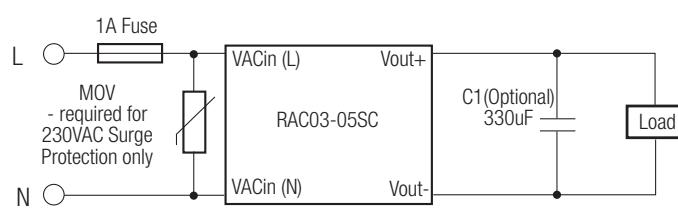
Tolerance ± 0.5 mm unless otherwise specified

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)

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