

## Features

## Regulated Converters

- Universal Input 80-264VAC
- High efficiency up to 77%
- Isolated Output 3kVAC / 1 min
- Short Circuit Protection
- Meet EN55022 Class B
- Low Standby Power Consumption

### Description

Compact, low cost, high efficiency, universal input switching AC/DC power module for PCB or wired mounting with single or dual outputs. CE marked and UL/cUL certified.

### Selection Guide

| Part Number  | Input Voltage (VAC) | Output Voltage (VDC) | Output Current (max.) | Efficiency (Typ.) | Max. Capacitive Load <sup>(1+2)</sup> |
|--------------|---------------------|----------------------|-----------------------|-------------------|---------------------------------------|
| RAC05-3.3SC* | 80-264              | 3.3                  | 1250                  | 70                | 12000μF                               |
| RAC05-05SC*  | 80-264              | 5                    | 1000                  | 73                | 6800μF                                |
| RAC05-09SC*  | 80-264              | 9                    | 556                   | 75                | 2500μF                                |
| RAC05-12SC*  | 80-264              | 12                   | 420                   | 76                | 1500μF                                |
| RAC05-15SC*  | 80-264              | 15                   | 340                   | 76                | 750μF                                 |
| RAC05-24SC*  | 80-264              | 24                   | 210                   | 77                | 330μF                                 |
| RAC05-05DC*  | 80-264              | ±5                   | ±500                  | 73                | ±3000μF                               |
| RAC05-12DC*  | 80-264              | ±12                  | ±210                  | 76                | ±560μF                                |
| RAC05-15DC*  | 80-264              | ±15                  | ±170                  | 76                | ±220μF                                |

\* add suffix /W for wired version

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

|                                                  |                                   |                   |
|--------------------------------------------------|-----------------------------------|-------------------|
| Input Voltage Range (with derating)              | 80-264VAC or 115-370VDC           |                   |
| Rated Power                                      | 5 Watts max.                      |                   |
| Input Frequency (for AC Input)                   | 47-440Hz                          |                   |
| Input Current (Full Load)                        | 115VAC / 230VAC                   | 110mA / 70mA typ. |
| Inrush Current (<2ms)                            | 115VAC / 230VAC                   | 30A / 60A max.    |
| Minimum Load (Specifications valid with 5% min.) | 0%                                |                   |
| No Load Power Consumption                        | 0.25W max.                        |                   |
| Recommended External Input Fuse                  | 1.5A / Slow Blow Type             |                   |
| Output Voltage Accuracy (Full Load)              | 115VAC / 230VAC                   | ±2% max.          |
| Line Voltage Regulation (Full Load)              | LL-HL                             | ±0.3% typ.        |
| Load Voltage Regulation                          | 5-100% Load                       | ±0.5% typ.        |
| Output Ripple&Noise @115/230VAC                  | 3.3V                              | 120mV max.        |
| (20MHz limited with 100nF across output)         | All Others                        | 150mV max.        |
| Switching Frequency (Full Load)                  | 132kHz typ.                       |                   |
| Efficiency (Full Load)                           | see Selection Guide               |                   |
| Hold-Up Time (Full Load)                         | 115VAC                            | 10ms typ.         |
| Leakage Current                                  | 0.85mA max.                       |                   |
| Isolation Voltage                                | Input-Output                      | 3kVAC / 1 minute  |
| Isolation Capacitance                            | Input-Output                      | 1000pF typ.       |
| Isolation Resistance                             | Input-Output                      | 1G Ω min.         |
| Short Circuit Protection                         | Hiccup, Automatic Restart         |                   |
| Overvoltage Protection                           | 3.3V                              | 4.8 V- 5.4V       |
| (of Nominal Output Voltage)                      | All Others                        | 110% - 135%       |
| Over Voltage Category                            | OVC II                            |                   |
| Operating Temperature Range <sup>(3)</sup>       | -25°C to +55°C (without Derating) |                   |
| (Natural Convection)                             | -25°C to +75°C (with Derating)    |                   |
| Storage Temperature Range                        | -40°C to +100°C                   |                   |
| Case Material                                    | UL94V-0 Black Plastic             |                   |

continued on the next page

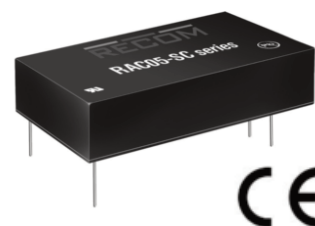
## POWERLINE

### AC/DC-Converter

with 3 year Warranty

RECOM

## 5 Watt Single / Dual Output

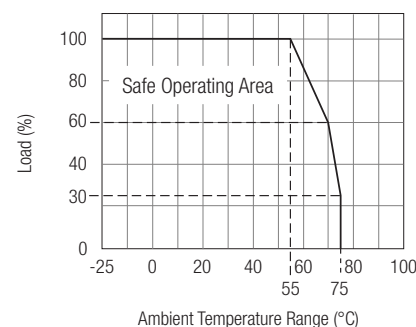


UL  
E224736

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

## RAC05-C

## Derating-Graph (Ambient Temperature)



Refer to Application Notes

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

|                   |                         |                                       |
|-------------------|-------------------------|---------------------------------------|
| Potting Material  | Epoxy UL94V-0           |                                       |
| Relative Humidity | 95% RH max.             |                                       |
| Package Weight    | Single / Dual           | 35g / 38g                             |
| Packing Quantity  | Single Output           | 10pcs                                 |
|                   | Dual Output             | 9pcs                                  |
|                   | Wired Version           | 1pc                                   |
| MTBF (25°C)       | Using MIL-HDBK 217F     | >400 x 10 <sup>3</sup> hours          |
|                   | Using MIL-HDBK 217F     | >200 x 10 <sup>3</sup> hours          |
| Emissions         | CE                      | EN 55022: 2006 + A1: 2007 / Class B   |
|                   | EMC                     | EN 55024:1998 + A1:2001 + A2:2003     |
|                   | Harmonics               | EN 61000-3-2:2006 / Class A           |
|                   | Flicker                 | EN 61000-3-3:1995 + A1:2001 + A2:2005 |
| Immunity          | ESD                     | IEC 61000-4-2 / Criterion B           |
|                   | RS                      | IEC 61000-4-3 / Criterion A           |
|                   | EFT                     | IEC 61000-4-4 / Criterion B           |
|                   | Surge                   | IEC 61000-4-5 / Criterion B           |
|                   | CS                      | IEC 61000-4-6 / Criterion A           |
|                   | PMF                     | IEC 61000-4-8 / Criterion A           |
|                   | Voltage Variations      | IEC 61000-4-11 / Criteria B + C       |
| Certifications:   |                         |                                       |
| UL General Safety | Report: E224736         | UL-60950-1, 2nd Edition               |
| cUL               | Report: E224736         | C22.2 No. 60950-1-07, 2nd Edition     |
| EN General Safety | Report: SPCLVD1211033-1 | EN-60950-1:2006 + A12:2011            |
| CE                |                         | EN55022 Class B                       |

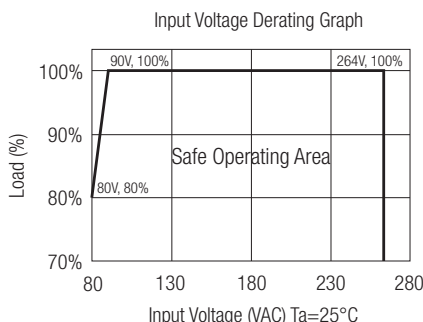
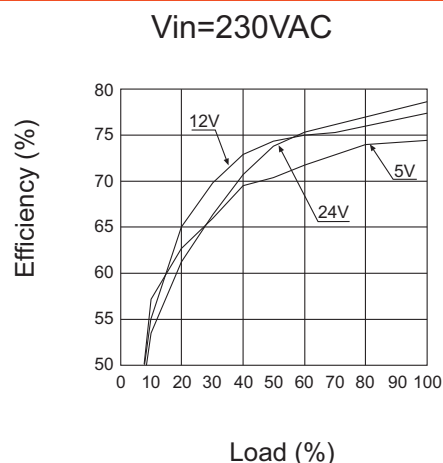
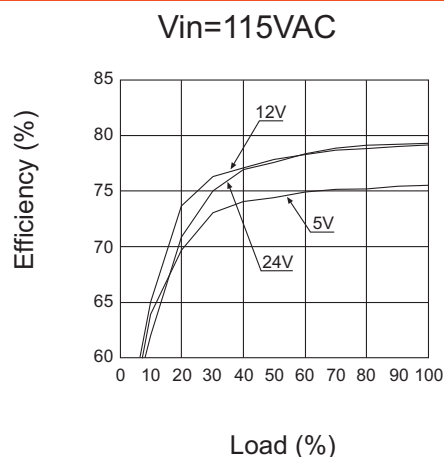
### Notes:

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.

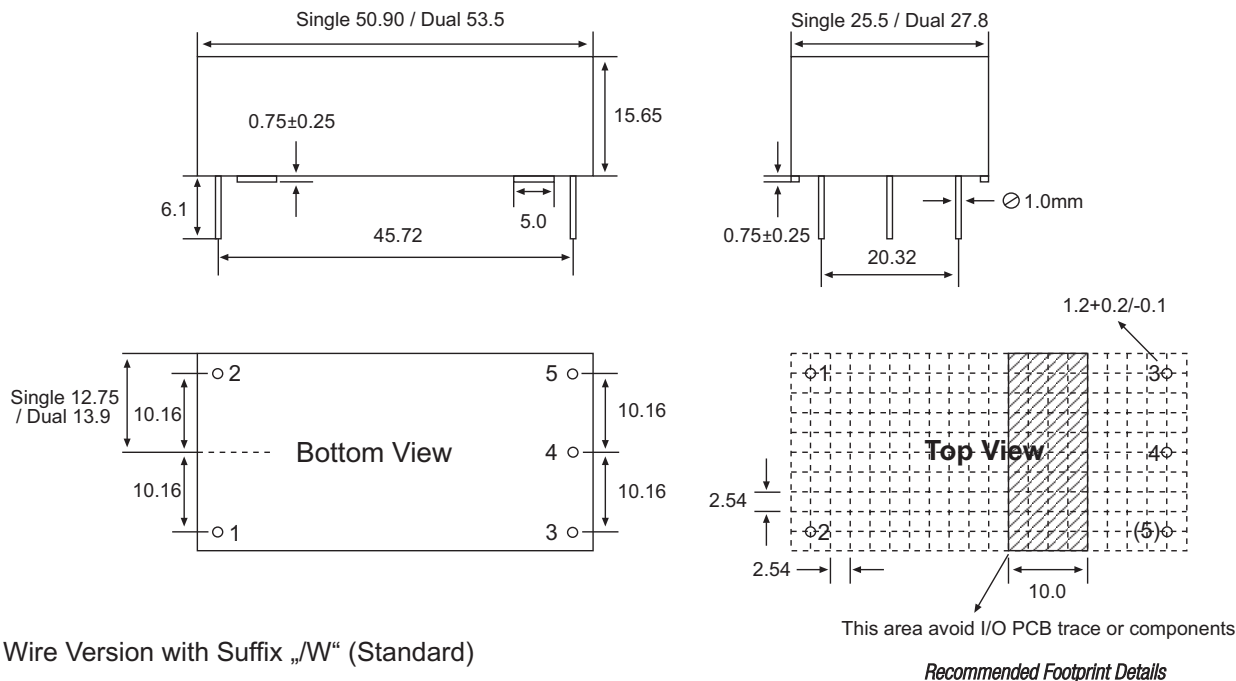
Note3: Start up only is guaranteed at temperatures down to -25°C. Other specifications may not be met.

## Typical Characteristics

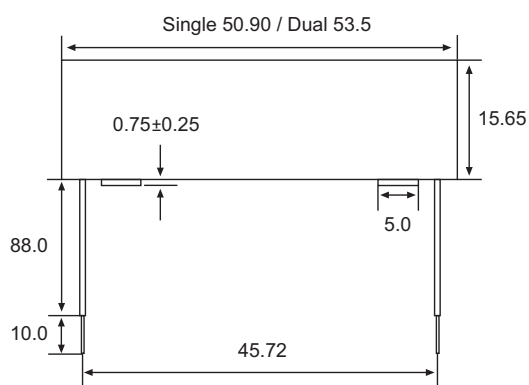


## Package Style and Pinning

### PCB Mount Version (Standard)



### Wire Version with Suffix „W“ (Standard)



#### Pin Connections

| Pin # | Single Out | Dual Out   |
|-------|------------|------------|
| 1     | VAC in (N) | VAC in (N) |
| 2     | VAC in (L) | VAC in (L) |
| 3     | +VDC out   | +VDC out   |
| 4     | -VDC out   | Com        |
| 5     | no Pin     | -VDC out   |

NC = No Connection

xx.x = ±0.5mm

xx.xx = ±0.25mm

#### Wire Connections

| Pin #      |        |      | Single out | Dual out   |
|------------|--------|------|------------|------------|
| 1 (Blue)   | AWG#22 | 1015 | VAC in (N) | VAC in (N) |
| 2 (Brown)  | AWG#22 | 1015 | VAC in (L) | VAC in (L) |
| 3 (Red)    | AWG#22 | 1007 | +VDC out   | +VDC out   |
| 4 (Black)  | AWG#22 | 1007 | -VDC out   | Common     |
| 5 (Orange) | AWG#22 | 1007 | no Wire    | -VDC out   |

NC = No Connection

xx.x = ±0.5mm

xx.xx = ±0.25mm

# Mouser Electronics

Authorized Distributor

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## RECOM:

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