



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Features

Regulated Converters

- Long 5 Year Warranty
- 2MOPP/250VAC
- Suitable for built in Class II Applications
- Wide Input Voltage Range (85-264VAC)
- Low Leakage Current (<75µA)
- 5000m Operation
- Active Power Factor Correction
- Connector Set available

RECOM
AC/DC Converter

RACM100

**100 Watt
Enclosed &
Open Frame
Case Style
Single Output**



2MOPP
250VAC



C **UL** US
E314885

IEC/EN-60601 Certified
ES-60601 Certified
EN-55011 Certified
EN-55022 Certified

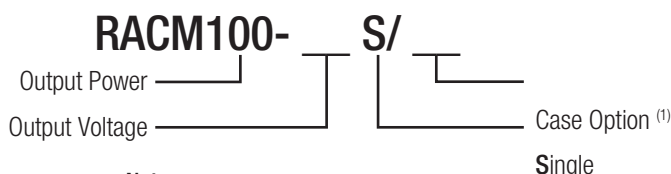
Description

The RACM100 is a compact 3" x 2" high efficiency AC/DC power supply with 2xMOPP 3rd Ed. safety approval for medical applications. The range has now been extended to include open frame models (/ OF suffix). Like the original enclosed versions, the RACM100/OF series are space-saving universal input voltage power supplies (85-264VAC), with 4kVAC isolation, PFC, no minimum load and can be used at ambient temperatures of between -25°C and +85°C. The 12V, 15V, 24V or 48V output voltages are fully protected and have tolerances of less than $\pm 0.2\%$ over the entire input voltage range and less than $\pm 0.5\%$ over the entire load range. The RACM100/OF series is certified to medical safety standard IEC/ES/EN-60601-1 3rd Edition and feature BF rated outputs with less than 75µA leakage current. It has a built-in Class B EMI filter and comes with a five year warranty.

Selection Guide

Part Number	Input Voltage Range [VAC]	Output Voltage [VDC]	Output Current [A]	Input Power @ No Load [W]	Efficiency typ. [%]
RACM100-12S ⁽¹⁾	85-264	12	8.34	0.3	91
RACM100-15S ⁽¹⁾	85-264	15	6.67	0.3	92
RACM100-24S ⁽¹⁾	85-264	24	4.17	0.3	92
RACM100-48S ⁽¹⁾	85-264	48	2.09	0.3	91

Model Numbering



Notes:

Note1: add suffix "/OF" for Open Frame Package
without suffix, standard enclosed case package

Ordering Examples:

RACM100-12S = 12Vout, Standard Enclosed Case Package
RACM100-24S/OF = 24Vout, Open Frame Version

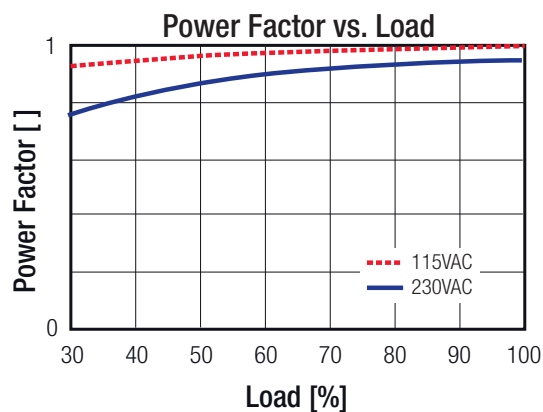
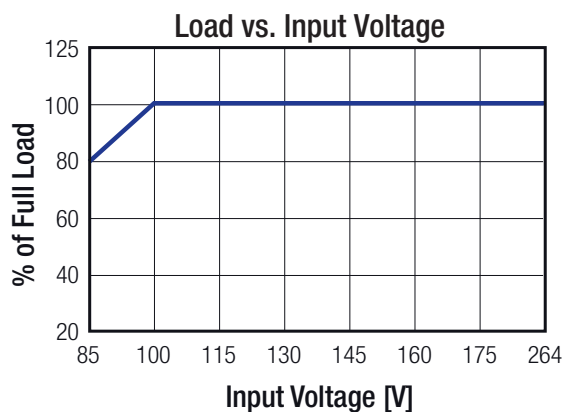
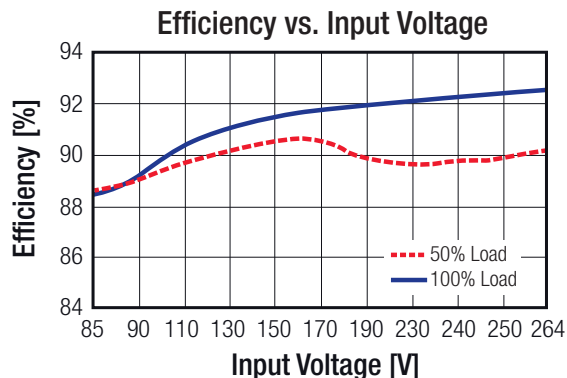
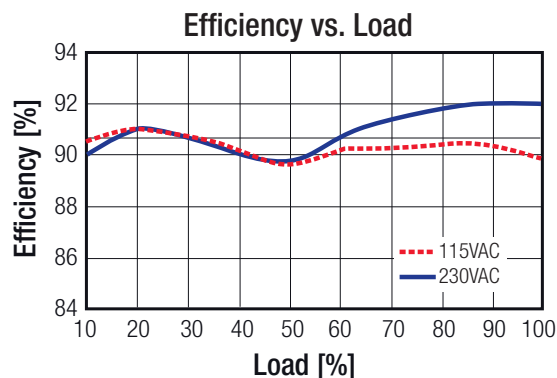
Specifications (measured @ ta= 25°C, 250VAC, full load and after warm-up)

BASIC CHARACTERISTICS				
Parameter	Condition	Min.	Typ.	Max.
Input Voltage		85VAC		264VAC
		120VDC		370VDC
Input Current	115VAC, full load			1.15A
	230VAC, full load			0.55A
Inrush Current	cold start, 230VAC			60A
Input Frequency Range	AC Input	47Hz		63Hz
Output Voltage Trimming				$\pm 10\%$
Start-up Time				1 Second
Rise Time			20ms	
Hold up Time	115VAC, full load	16ms		
Minimum Load				0%

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Specifications (measured @ $t_a = 25^\circ\text{C}$, 250VAC, full load and after warm-up)

Power Factor		0.95		
Internal Operating Frequency			60kHz	
Output Ripple and Noise	20MHz BW	12VDC, with 10 μ F/25V MLCC 15VDC, with 10 μ F/25V MLCC 24VDC, with 1 μ F/50V MLCC 48VDC, with 0.1 μ F/100V MLCC	120mVp-p 150mVp-p 160mVp-p 340mVp-p	



REGULATIONS

Parameter	Condition	Value
Output Voltage Accuracy	230VAC, full load	$\pm 1\%$
Line Voltage Regulation	low line to high line, full load	$\pm 0.2\%$
Load Voltage Regulation	0% to 100% load 10% to 100% load	$\pm 0.5\%$ max. $\pm 0.4\%$ max.
Transient Peak Deviation	load step from 50% - 75% change at 2.5A/ μ s	3% Vout max.
Transient Recovery Time	load step from 50% - 75% change at 2.5A/ μ s	500 μ s typ.

PROTECTIONS

Parameter	Condition	Value
Input Fuse	internal line and neutral	T3.15A / 250VAC, slow blow type
Short Circuit Protection (SCP)		continuous, auto-recovery
Over Load Protection (OLP)	% of Iout rated	Hiccup Mode, 115% min. / 150% max.
Over Voltage Protection (OVP)	% of Vout nominal	Latch Mode, 115% min. / 135% max.
Isolation Voltage	I/P to O/P I/P to Chassis O/P to Chassis working voltage	4kVAC / 1 minute 1.5kVAC / 1 minute 1.5kVAC / 1 minute 250VAC / continuous

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Specifications (measured @ $t_a = 25^\circ\text{C}$, 250VAC, full load and after warm-up)

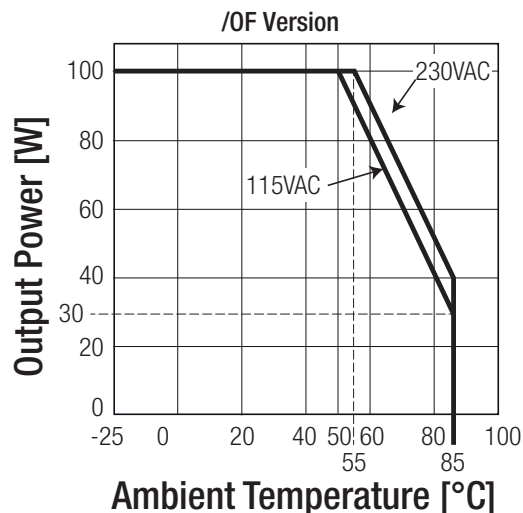
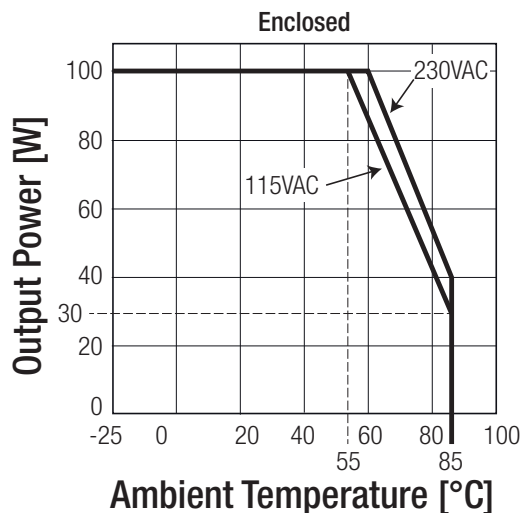
Means of Protection		2MOPP
Leakage Current	264VAC	75 μ A max.
Medical Device Classification		Type BF applied device
Internal Clearance	I/P to O/P	8mm min.
Creepage	I/P to O/P	8mm min.
Isolation Resistance	500VDC	100M Ω min.
Insulation Grade		Reinforced Insulation

ENVIRONMENTAL

Parameter	Condition		Value
Relative Humidity	non-condensing		5% to 95% RH
Temperature Coefficient			$\pm 0.02\%$ / $^\circ\text{C}$
Operating Temperature Range	with derating		-25 $^\circ\text{C}$ to +85 $^\circ\text{C}$
	without derating, 230VAC	enclosed open frame	-25 $^\circ\text{C}$ to +60 $^\circ\text{C}$ -25 $^\circ\text{C}$ to +55 $^\circ\text{C}$
Operating Altitude			5000m max.
MTBF (+25 $^\circ\text{C}$)	according to MIL-HDBK-217F, full load		790.3 x 10 ³ hours

Derating Graph

(@ Chamber and natural convection 0.1m/s)



SAFETY AND CERTIFICATIONS

Certificate Type (Safety)	Report / File Number	Standard
IEC/EN Medical Safety (CB Scheme)	1408016004	IEC/EN-60601-1
ANSI/AAMI Medical Safety		ES60601-1
CAN/CSA Medical Safety		C22.2 No. 60601-1
Risk Management	1408016005	Medical Report + ISO14971 Risk Assessment

EMC Compliance	Conditions	Standard / Criterion
EMI	Conducted Radiated Conducted and Radiated	CISPR 11, EN-55011, Class B CISPR 11, EN-55011, Class A FCC18, Class B
ESD	Air $\pm 8\text{kV}$; Contact $\pm 6\text{kV}$	EN61000-4-2, Criteria A
Radiated Immunity	20V/m	EN61000-4-3, Criteria A
Fast Transient	$\pm 2\text{kV}$	EN61000-4-4, Criteria A

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Specifications (measured @ $t_a = 25^\circ\text{C}$, 250VAC, full load and after warm-up)

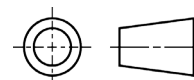
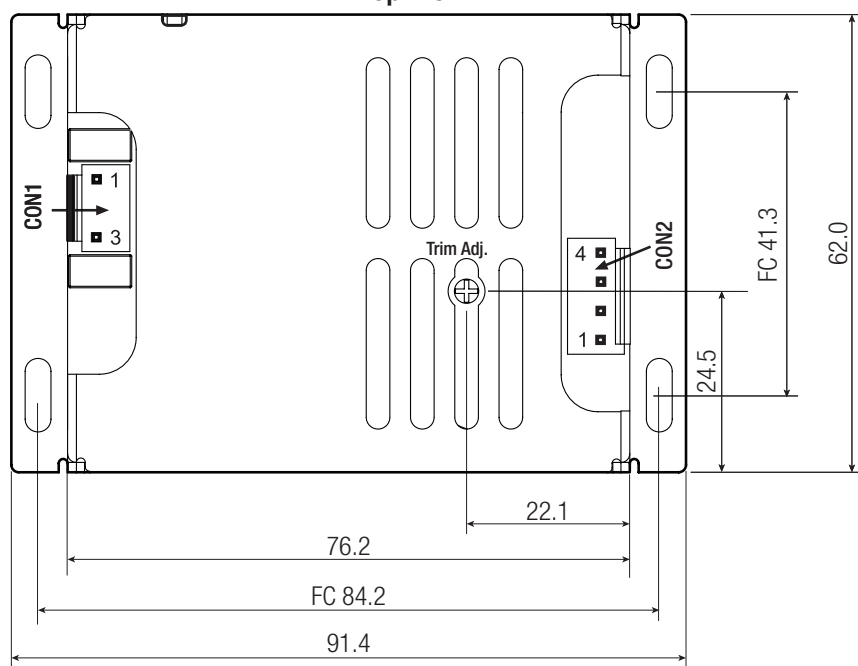
Surge	L-N $\pm 1\text{kV}$ and L-GND/N-GND $\pm 2\text{kV}$		EN61000-4-5, Criteria A
Conducted Immunity	20Vr.m.s		EN61000-4-6, Criteria A
Power Frequency Magnetic Field	10A/m		EN61000-4-8, Criteria A
Voltage Dip and Interruptions	100/230VAC, 50Hz	30% 500ms >95% 10ms >95% 5000ms	EN61000-4-11, EN60601-1-2, Criteria A EN61000-4-11, EN60601-1-2, Criteria A EN61000-4-11, EN60601-1-2, Criteria B
Harmonic Current	full load		EN61000-3-2; Class D
Voltage Flicker			EN61000-3-3, PASS
Thermal Shock			MIL-STD-810F
Shock			IEC60068-2-27
Vibration			IEC60068-2-6

DIMENSION and PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Case Material	enclosed	Aluminum
Package Dimension (LxWxH)	enclosed	91.4 x 62.0 x 39.2mm
	open frame	76.2 x 50.8 x 32.0mm
Package Weight	enclosed	210g
	open frame	150g

Dimension Drawing Enclosed (mm)

Top View



AC Input Vonnector (CON1)

Pin#	Terminal	Mating Housing
1 AC/L	SVH-21T-P1.1	VHR-3N
3 AC/N		

DC Output Connector (CON2)

Pin#	Terminal	Mating Housing
1,2 -Vout	SVH-21T-P1.1	VHR-4N
3,4 +Vout		

Tolerance: $\pm 0.5\text{mm}$
FC: fixing center

Side View

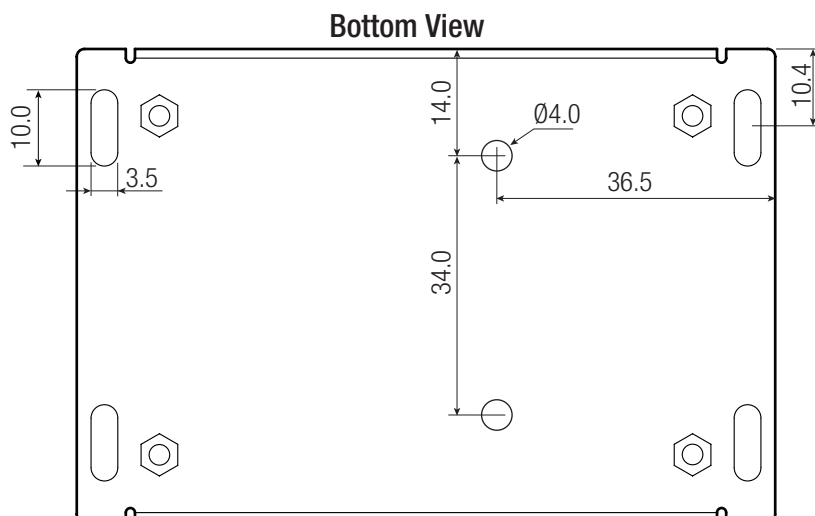


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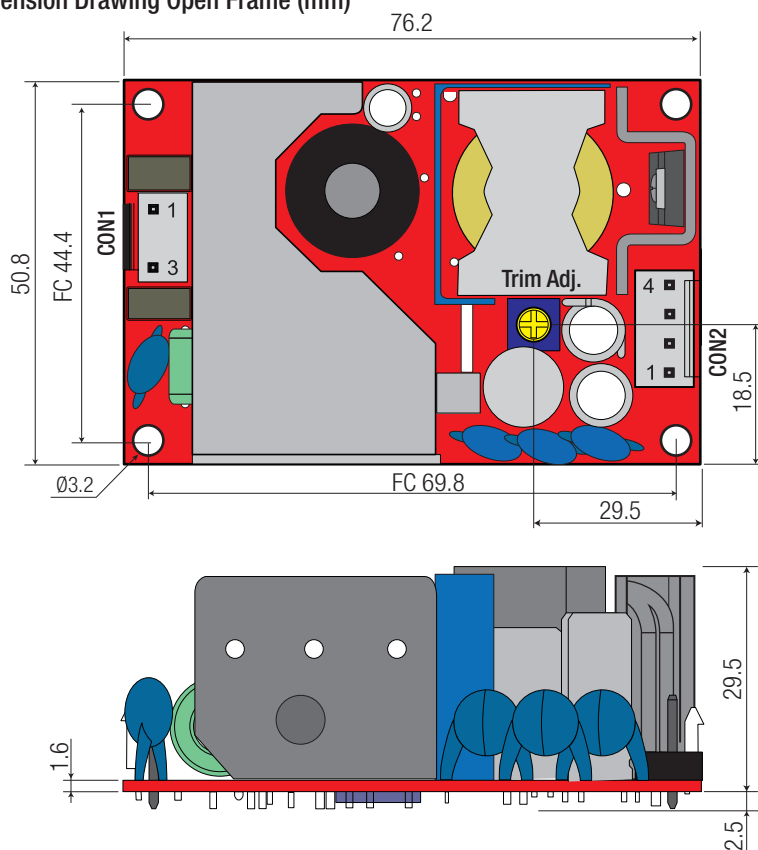
RACM100

Series

Specifications (measured @ $t_a = 25^\circ\text{C}$, 250VAC, full load and after warm-up)



Dimension Drawing Open Frame (mm)



AC Input Vonnector (CON1)

Pin#	Terminal	Mating Housing
1 AC/L 3 AC/N	SVH-21T-P1.1	VHR-3N

DC Output Connector (CON2)

Pin#	Terminal	Mating Housing
1,2 -Vout 3,4 +Vout	SVH-21T-P1.1	VHR-4N

Tolerance: $\pm 0.5\text{mm}$
FC: fixing center

PACKAGING INFORMATION

Parameter	Type		Value
Packaging Dimension (LxWxH)	cardboard box	enclosed case	418.0 x 258.0 x 105.0mm
		open frame	494.0 x 250.0 x 95.0mm
Packaging Quantity	enclosed case		10pcs
	open frame		25pcs
Storage Temperature Range			-40°C to +85°C

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