Features

- Compact low profile AC-DC power supply
- 80mW no load power consumption •
- **Class II power supply with 3kVAC isolation** •

Extra wide input voltage range (80~264VAC)

- **Regulated Converters**
- Low output ripple/noise
- EN, UL and CE certified

Description

The RAC03-C 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 Voltage Range [VAC]	Output Voltage [VDC]	Output Current [mA]	Efficiency typ ⁽¹⁾ [%]	Max. Capacitive Load ^(2,3) [μF]
RAC03-3.3SC	80-264	3.3	900	67	6800
RAC03-3.8SC	80-264	3.8	789	67	6800
RAC03-05SC	80-264	5	600	72	4000
RAC03-09SC	80-264	9	333	76	3000
RAC03-12SC	80-264	12	250	76	680
RAC03-15SC	80-264	15	200	76	470
RAC03-24SC	80-264	24	125	78	200

Notes:

Note1: Efficiency is tested at nominal input and full load at +25°C ambient

Note2: Measured @ 230VAC / 50Hz / Ta=25°C with constant resistant mode at full load

Note3: If used @ 115VAC / 60Hz with full load, max. capacitive load is less, please contact **RECOM** Techsupport for detailed information

Model Numbering



RAC3-3.3SC 3 Watt 3.3Vout Single Output RAC3-24SC 3 Watt 24Vout Single Output



RAC03-C





IEC/EN60950-1 certified UL60950-1 certified CAN/CSA-C22.2 No. 60950-1 certified IEC/EN60335-1 certified EN55032/14 compliant EN55024 compliant **CB-Report**

Specifications (measured at Ta= 25°C, full load otherwise noted)

RAC03-C Series

BASIC CHARACTERISTICS					
Parameter	Condition		Min.	Тур.	Max.
Input Voltage Range (4,5)	nom. Vin $=$	230VAC	80VAC		264VAC
			115VDC		370VDC
Input Current	115VAC 230VAC				85mA 40mA
Inrush Current	<0.5ms 115VAC 230VAC				30A 60A
No load Power Consumption	115VAC 230VAC				60mW 100mW
Input Frequency Range	AC Inp	ut	47Hz		63Hz
Minimum Load			0%		
Start-up Time	115VAC 230VAC				0.5s 0.2s
Rise Time	115VAC 230VAC			20ms 20ms	
Hold-up time	115VAC 230VAC		15ms 80ms		
Internal Operating Frequency	100% load at nominal Vin			35kHz	
Output Ripple and Noise (6)	20MHz BW 3.3, 3.8, 5Vout all others				120mVp-p 150mVp-p
Note6: Efficiency vs. Load 100 90 80 70 80 60 90 80 80 100 90 80 80 80 80 80 80 80 80 80 8					
20		7.7			

REGULATIONS				
Parameter	Condition	Value		
Output Accuracy		±5.0% max.		
Line Regulation	low line to high line	±3.0% max.		
Load Regulation (7)	10% to 100% load	6.0% max.		

Notes:

Note7: Operation below 10% load will not harm the converter, but specifications may not be met

RAC03-C Series

Specifications (measured at Ta= 25°C, full load otherwise noted)

PROTECTIONS

Parameter	Туре		Value
Short Circuit Protection (SCP)	be	low 100mΩ	Hiccup mode, automatic recovery
Over Voltage Category			OVCII
Isolation Voltage	I/P to O/P	tested for 1 minute	3kVAC
Isolation Resistance		I/P to O/P	1GΩ min.
Isolation Capacitance			1000pF typ.
Insulation Grade			double insulated
Leakage Current			0.85mA max.

Notes:

Note8:Refer to local safety regulations if input over-current protection is also required. Recommended fuse: slow blow typeNote9:MOV required for 230VAC operation. The Varistor should comply with IEC-61051-2. e.g. EPCOS S14 Series





Specifications (measured at Ta= 25°C, full load otherwise noted)

RAC03-C Series

SAFETY AND CERTIFICATIONS		
Certificate Type (Safety)	Report / File Number	Standard
Information Technology Equipment - General Requirments for Safety	SPCLVD1606038	IEC60950-1:2006 + A2:2013 EN60950-1, 2nd Edition , 2013
Household and similar electrical appliances – Safety – Part 1: General requirements	L0339L26-B2-L	IEC60335-1:2010+AMD1:2013 EN60335-1:2012+A11:2014
Information Technology Equipment - General Requirments for Safety (CB Scheme)	L0339m10-CB-1-B1	IEC60950-1:2005 2nd Edition + A2:2013
Information Technology Equipment - General Requirments for Safety		EN60950-1:2006 + A2:2013
Information Technology Equipment - General Requirments for Safety	E224736-A5-UL (10)	UL60950-1, 2nd Edition, 2007 CSA C22.2 60950-1, 2nd Edition, 2007
EAC Safety of Low Voltage Equipment	RU-AT.49.09571	TP TC 004/2011
RoHS2+		RoHS-2011/65/EU + AM-2015/863
EMC Compliance Industrial	Condition	Standard / Criterion
Electromagnetic compatibility of multimedia equipment – Emission Requirements		EN55032:2015, Class B
Information technology equipment - Immunity characteristics - Limits and methods of measurement		EN55024:2010 + A1:2015
ESD Electrostatic discharge immunity test	Air ±8.0kV; Contact ±4.0kV	IEC61000-4-2:2008, Criteria A
Radiated, radio-frequency, electromagnetic field immunity test	3V/m	IEC61000-4-3:2006 + A2:2010, Criteria A
Fast Transient and Burst Immunity	AC Power Port: ±1.0kV	IEC61000-4-4:2012, Criteria A
Surge Immunity	AC Power Port: L-N ±1.0kV	IEC61000-4-5:2005, Criteria A
Immunity to conducted disturbances, induced by radio-frequency fields	AC Power Port: 3Vr.m.s	IEC61000-4-6:2008, Criteria A
Voltage Dips and Interruptions	Voltage Dips >95% Voltage Dips 30% Voltage Interruptions > 95%	IEC61000-4-11:2004, Criteria A IEC61000-4-11:2004, Criteria A IEC61000-4-11:2004, Criteria C
Limits of Voltage Fluctuations & Flicker		EN61000-3-3:2013
EMC Compliance Household	Condition	Standard / Criterion
Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission		EN55014-1:2006+A2:2011
Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity		EN55014-2:2015
ESD Electrostatic discharge immunity test	Air ± 8.0 kV; Contact ± 4.0 kV	IEC61000-4-2:2008, Criteria A
Radiated, radio-frequency, electromagnetic field immunity test	3V/m	IEC61000-4-3:2006 + A2:2010, Criteria A
Fast Transient and Burst Immunity	AC Power Port: ±1.0kV DC Output: ±0.5kV	IEC61000-4-4:2012, Criteria A
Surge Immunity	AC Power Port: L-N ±2.0kV DC Output: L-N ±1.0kV	IEC61000-4-5:2014, Criteria B
Immunity to conducted disturbances, induced by radio-frequency fields	AC Power Port: 3V DC Output: 3V	IEC61000-4-6:2013, Criteria A
Voltage Dips and Interruptions	Voltage Dips >95% Voltage Dips 30% Voltage Interruptions > 95%	IEC61000-4-11:2004, Criteria B IEC61000-4-11:2004, Criteria C IEC61000-4-11:2004, Criteria C
Limits of Harmonic Current Emissions		EN61000-3-2:2014
Limits of Voltage Fluctuations & Flicker		EN61000-3-3:2013

Notes:

Note10: UL is pending for RAC03-3.8SC

Specifications (measured at Ta= 25°C, full load otherwise noted)

RAC03-C Series



PACKAGING INFORMATION				
Parameter	Туре	Value		
Packaging Dimension (LxWxH)	tube	520.0 x 32.0 x 27.0mm		
Packaging Quantity		12pcs		
Storage Temperature Range		-40°C to +100°C		
Storage Humidity	non-condensing	95% RH max.		

The product information and specifications may be subject to changes even without prior written notice. The product has been designed for various applications; its suitability lies in the responsibility of each customer. The products are not authorized for use in safety-critical applications without RECOM's explicit written consent. A safety-critical application is an application where a failure may reasonably be expected to endanger or cause loss of life, inflict bodily harm or damage property. The applicant shall indemnify and hold harmless RECOM, its affiliated companies and its representatives against any damage claims in connection with the unauthorized use of RECOM products in such safety-critical applications.