

Specifications (measured @ $T_a = 25^\circ\text{C}$, nom. Vin, full load and after warm-up unless otherwise stated)

BASIC CHARACTERISTICS					
Parameter	Condition		Min.	Typ.	Max.
Internal Input Filter					Pi type
Input Voltage Range ^(4,5)	nom. Vin= 277VAC		85VAC 120VDC	277VAC	305VAC 430VDC
Input Current	115VAC 230VAC 277VAC				150mA 100mA 75mA
Inrush Current	cold start at $+25^\circ\text{C}$	115VAC 230VAC 277VAC			15A 30A 35A
No Load Power Consumption					100mW
Input Frequency Range			47Hz		63Hz
ErP Lot 6 Standby Mode Confirmity (Output Load Capability)	Input Power=	0.5W 1.0W			0.34W 0.70W
Minimum Load			0%		
Power Factor	115VAC 230VAC 277VAC		0.60 0.45 0.40		
Start-up Time				20ms	
Rise Time				10ms	
Hold-up Time	115VAC 230VAC 277VAC			20ms 60ms 80ms	
Internal Operating Frequency	100% load at nominal Vin				130kHz
Output Ripple and Noise ⁽⁶⁾	20MHz BW	3.3, 5Vout others			60mVp-p 1% of Vout

Notes:

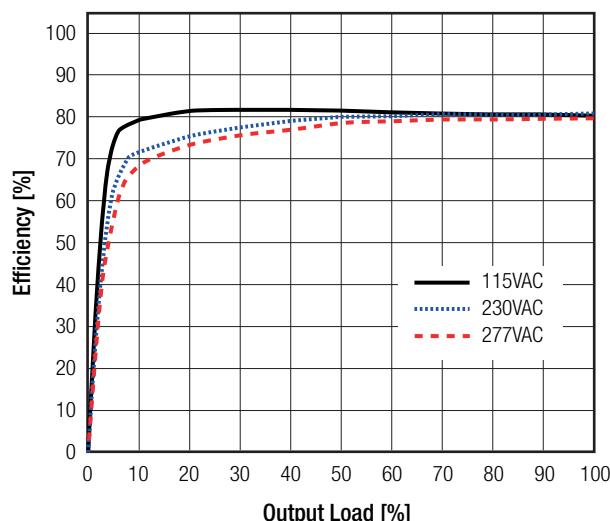
Note4: The products were submitted for safety files at AC-Input operation

Note5: Refer to line derating graph on page 4

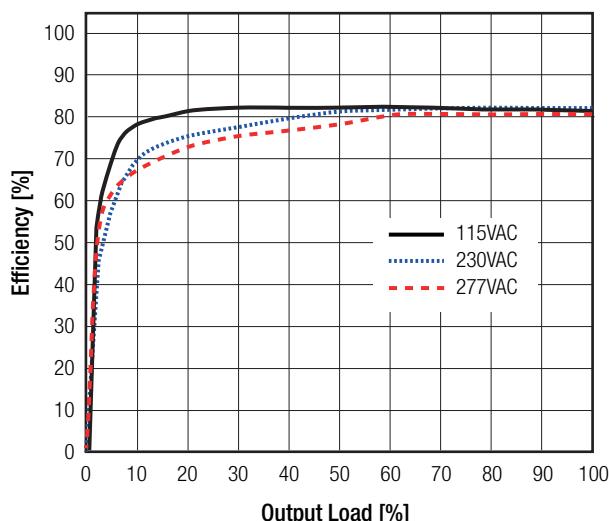
Note6: Measurements are made with a $1.0\mu\text{F}$ MLCC across output (low ESR)

Efficiency vs. Load

RAC05-05SK/277



RAC05-12SK/277



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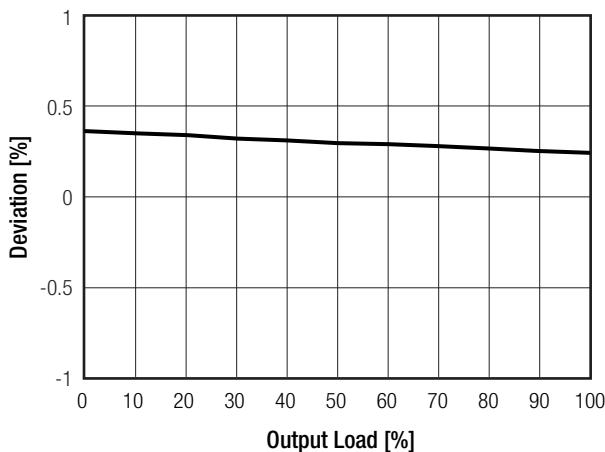
REGULATIONS

Parameter	Condition	Value
Output Accuracy		$\pm 1.0\%$ max.
Line Regulation	low line to high line, full load	$\pm 0.5\%$ typ.
Load Regulation	10% to 100% load	1.0% typ.
Transient Response	25% load step change	4.0% max.
	recovery time	500 μs typ.

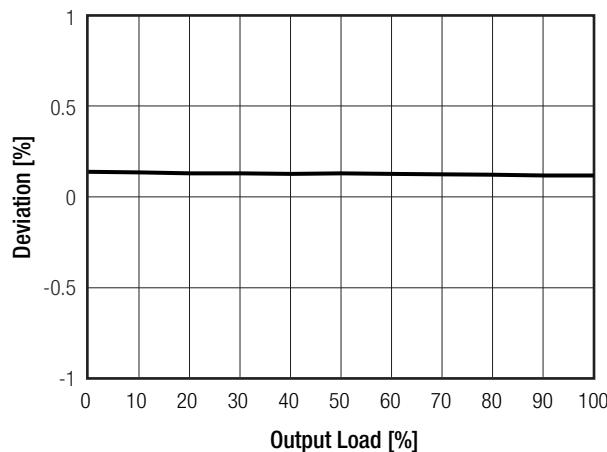
Deviation vs. Load

(at 115VAC, 230VAC, 277VAC)

RAC05-05SK/277



RAC05-12SK/277



PROTECTIONS

Parameter	Type	Value	
Input Fuse ⁽⁷⁾	internal	T1A, slow blow	
Short Circuit Protection (SCP)	below 100m Ω	hiccup, automatic restart	
Over Voltage Protection (OVP)		125% - 195%, hiccup mode	
Over Voltage Category		OVCII	
Over Current Protection (OCP)		125% - 195%, hiccup mode	
Isolation Voltage ⁽⁸⁾	I/P to O/P	tested for 1 minute	3kVAC
		tested for 10 seconds	4kVAC
Isolation Resistance	Isolation Voltage 500VDC	1G Ω min.	
Isolation Capacitance		100pF max.	
Insulation Grade		reinforced	
Leakage Current		0.25mA max.	

Notes:

Note7: Refer to local wiring regulations if input over-current protection is also required

Note8: For repeat Hi-Pot testing, reduce the time and/or the test voltage

ENVIRONMENTAL

Parameter	Condition	Value	
Operating Temperature Range	@ natural convection 0.1m/s	full load	-40°C to +70°C
		refer to derating graph	-40°C to +85°C
Maximum Case Temperature		+95°C	

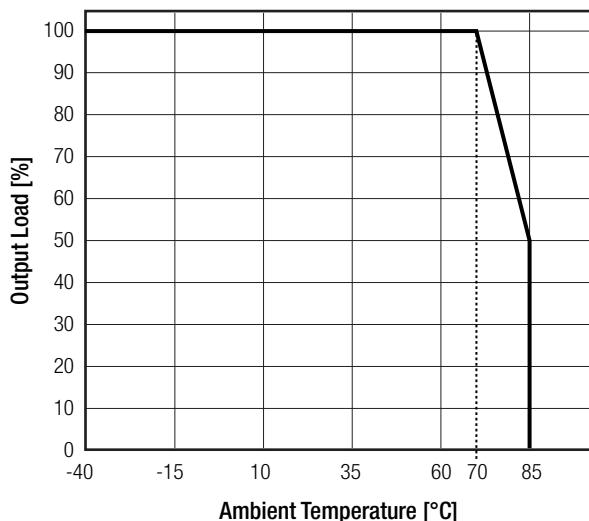
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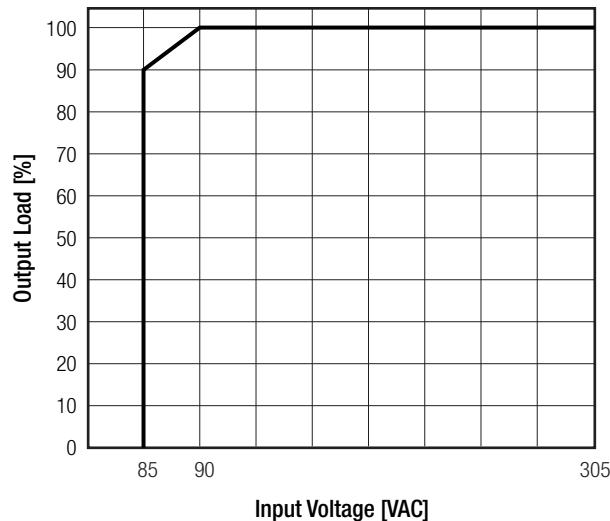
ENVIRONMENTAL			
Parameter	Condition		Value
Temperature Coefficient			0.05%/K
Operating Altitude			3000m
Operating Humidity	non-condensing		5% - 95% RH max.
Pollution Degree			PD2
Vibration	according to MIL-STD-202G		10-500Hz, 2G 10min./1cycle, period 60min. each along x,y,z axes
MTBF	according to MIL-HDBK-217F, G.B.	+25°C	>450 x 10 ³ hours
Design Lifetime	230VAC	+25°C	105 x 10 ³ hours
		+70°C	23 x 10 ³ hours
	277VAC	+25°C	105 x 10 ³ hours
		+70°C	18 x 10 ³ hours

Derating Graph

(@ Chamber and natural convection 0.1m/s)



Line Derating



SAFETY AND CERTIFICATIONS

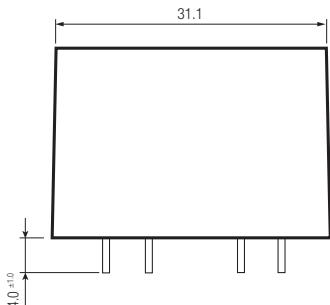
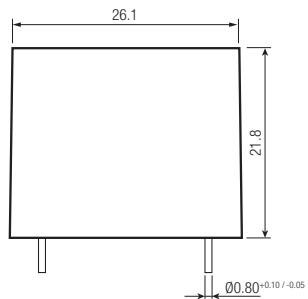
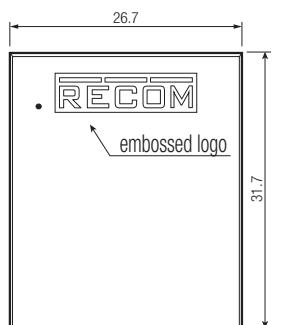
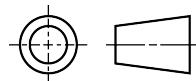
Certificate Type (Safety)	Report / File Number	Standard
Audio/Video, information and communication technology equipment - Part1: Safety requirements	pending	IEC62368-1:2014 2nd Edition EN62368-1:2014 + A11:2017
Audio/Video, information and communication technology equipment - Part1: Safety requirements	pending	UL62368-1, 2nd Edition, 2014-12-01 CAN/CSA-C22.2 No. 62368-1-14, 2nd Edition, 2014-12
Household and similar electrical appliances – Safety – Part 1: General requirements	pending	IEC60335-1:2010 + C1:2016 5th Edition EN60335-1:2012 + A11:2014
Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure	pending	EN62233:2008
RoHS 2		RoHS-2011/65/EU + AM-2015/863

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DIMENSION AND PHYSICAL CHARACTERISTICS

Parameter	Type	Value
Material	case potting PCB baseplate	plastic, (UL94V-0) silicone, (UL94V-0) FR4, (UL94V-0) plastic, (UL94V-0)
Dimension (LxWxH)	THT/wired	31.7 x 26.7 x 21.8mm
Weight	THT wired	31.5g typ. 37.0g typ.

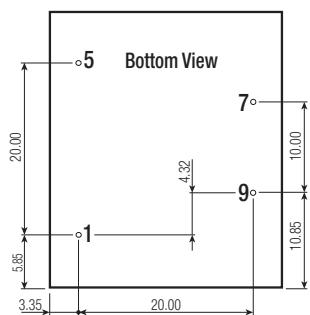
Dimension Drawing Single (mm)



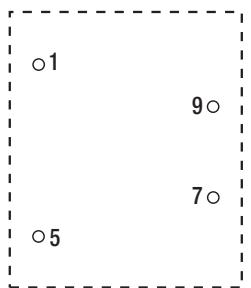
Pin Connections

Pin #	Single
1	VAC in (N)
5	VAC in (L)
7	+Vout
9	-Vout

Tolerance: xx.x= $\pm 0.5\text{mm}$
xx.xx= $\pm 0.25\text{mm}$



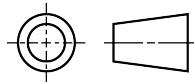
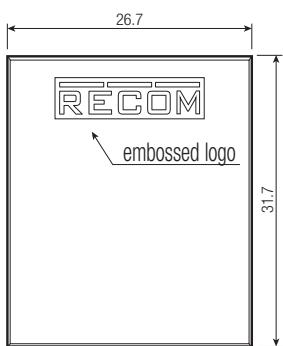
Recommended Footprint Details



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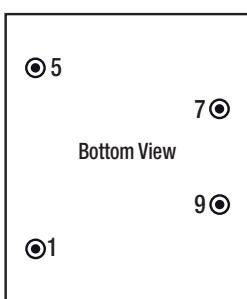
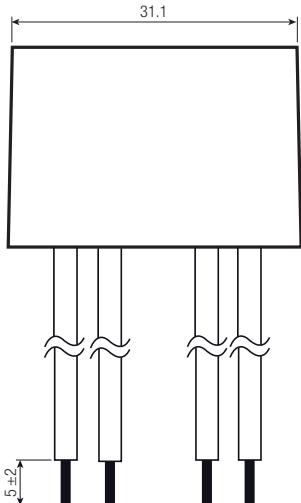
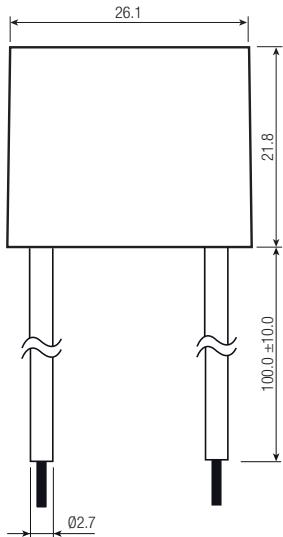
Dimension Drawing Single Wired (mm)



Wired information

#	Function	Wire color	Type	AWG
1	VAC in (N)	blue	UL-1015	18
5	VAC in (L)	brown	UL-1015	18
7	+Vout	red	UL-1015	18
9	-Vout	black	UL-1015	18

Tolerance: $xx.x = \pm 0.5\text{mm}$
 $xx.xx = \pm 0.25\text{mm}$



PACKAGING INFORMATION

Parameter	Type		Value
Packaging Dimension (LxWxH)	THT wired	tube tray	466.0 x 29.3 x 30.4mm 478.0 x 46.0 x 198.0mm
Packaging Quantity	THT wired		12pcs 20pcs
Storage Temperature Range			-40°C to +85°C
Storage Humidity	non-condensing		20% to 90% RH max.

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