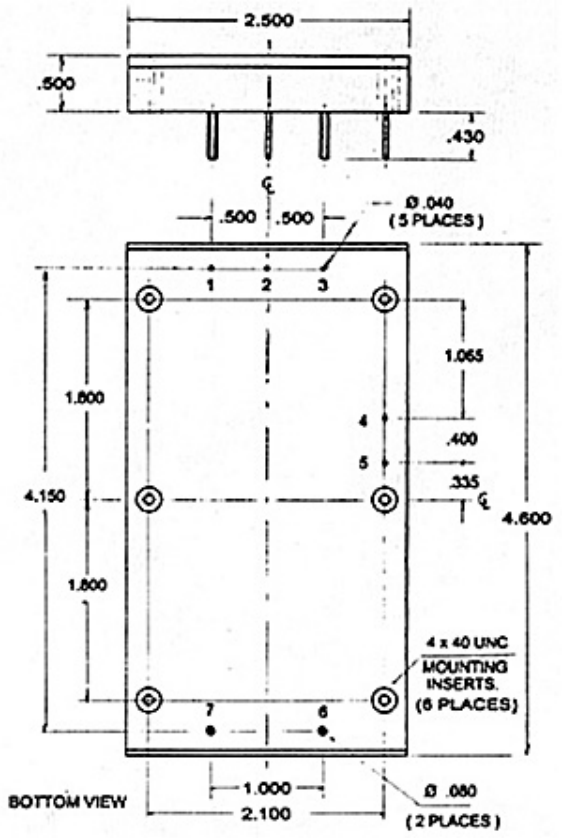
Series UAC

Hi Reliability Isolated Regulated AC-DC Converter

Meets EN/IEC 61000-3-2 Requirements
Universal Input Voltage: 85 to 265 VAC
Power Factor Corrected, 0.99 (50 - 100% Full Load)
Space Saving Design: One module replaces two
Special Output Voltages Available
Regulated Output Voltage
Made in the USA, Fully Encapsulated
Typical Features/Electrical Characteristics
AC Line Input Voltage: 85 to 265 VAC 47-440 Hz
Output Power: 100 to 200 watts, see chart
Output Voltage Ripple: 75-200 mV, See chart
Start Up Current Typical:
• 120 VAC Input: 20-40 AMPS
240 VAC Input: 15-20 AMPS
Operating Temperature: 0 to 85° C, case temperature. See application notes for proper thermal considerations.
Isolation:
• From Input to DC Output: 4242 VDC
From Input or DC output to Case: 2121 VDC
From AC Input to Auxiliary 380 VDC Output: Non-Isolated
Capacitor Requirement: External at Auxiliary 380 VDC Pins: 220µf, 450 Volt Electrostatic
* MUST BE INSTALLED
Short Circuit Protection: Continuous
Operating Frequency: 100KHz

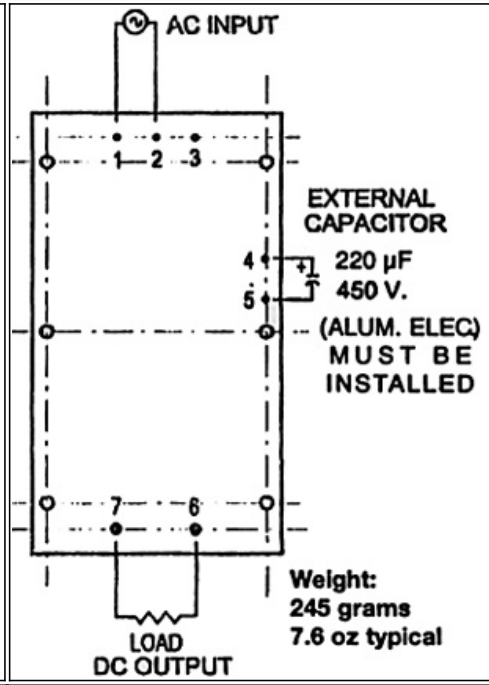


Weight: 245 grams Typical
Measurements = inches
NOTE: The torque for mounting screws much be 3 - 5 In-Lbs.

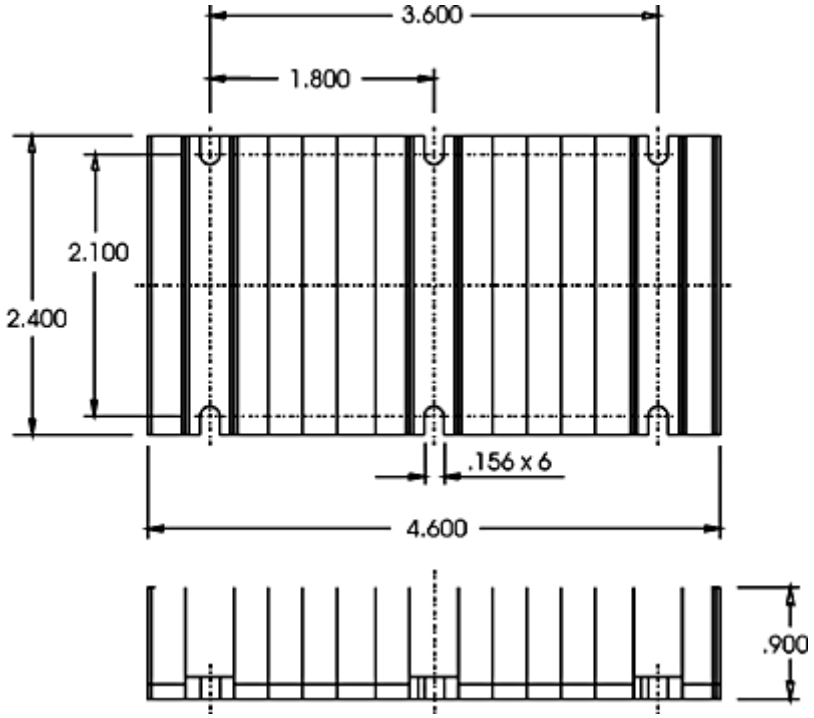
Pico Part No.	Output Voltage VDC	Max. Load Current (A)	Max. Output Power (watts)	EFF @ Full Load (%)	Output Ripple Full Load 1-1 MHz BW mv p-p	Out Volt Tolerance (±%)*	V Ld. Reg 10-100% Load (±%)*	Line Regulation (±%)*	Price (US $)
UAC5S	5	20	100	76	100	1.0	1.5	0.2	529.65
UAC9S	9	11.1	100	78	75	1.0	1.5	0.2	529.65
UAC12S	12	12.5	150	80	75	0.5	1.5	0.2	529.65
UAC15S	15	10	150	80	75	0.5	1.5	0.2	529.65
UAC24S	24	8.33	200	81	100	0.5	1	0.2	529.65
UAC28S	28	7.14	200	82	100	0.5	1	0.2	529.65
UAC48S	48	4.17	200	84	200	0.5	1	0.2	529.65

*External Capacitor Required: 220µF, 450 V Aluminum Electrolyte Capacitor

PIN No.	FUNCTION
1	AC IN
2	AC IN
3	N/C
4	+380 V BUS
5	-V BUS
6	-V OUT
7	+ V OUT

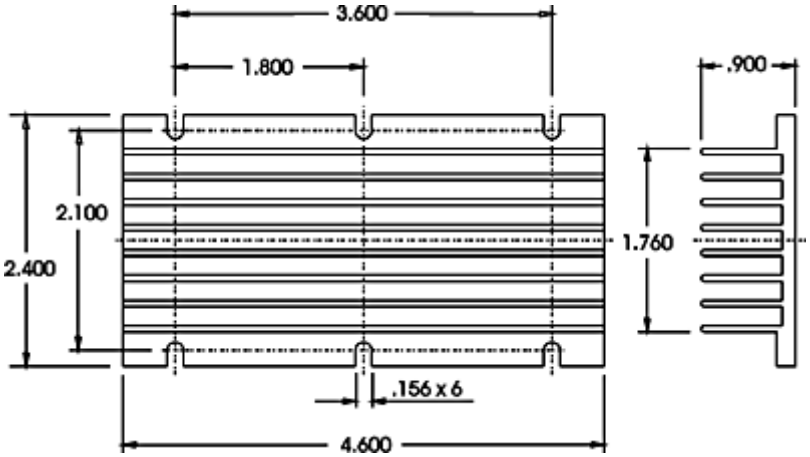


CH HEATSINK



All dimensions are in inches ()=mm
Approx. weight = 145 grams

CV HEATSINK

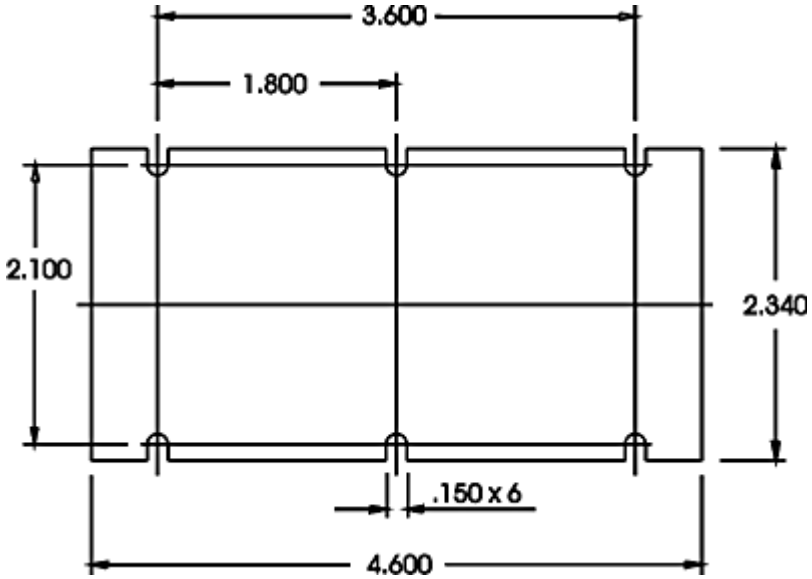


NOTE: Additional Heatsink options, consult factory
Approx. Weight = 145 grams

THERMAL INTERFACE
PART TI

Alloy Aluminum Substrate

Thermal Conductivity, (BTU-in/hr ft² °F) ----1530
Coefficient of Thermal Expansion (25-100°C, 10^{-6} in./in. °F ---13.1
Hardness, Brinnell B ----23
Endurance Limit, psi. ----5000
Standard Thickness (inches) ---.002



Thermal Considerations

	UAC Series		
.	Baseplate	Heatsink CV	Heatsink CH
Free Air	5.1	3.5	3.0
200 LFM	2.8	1.8	1.0
400 LFM	1.8	1.1	0.7
600 LFM	1.4	0.8	0.55
800 LFM	1.2	0.65	0.45
1000 LFM	1.0	0.55	0.40

EXAMPLE 1:

A UAC24S module has an efficiency of 80%. What is the maximum ambient temperature if 100 Watts of power is needed.

A) In free air.

From Table 1: $T_{rca} = 5.1$

Using Relation (2)

$$\Delta T = 5.1\,(100)\left[\frac{1}{0.80} - 1\right] = 127.5°C$$

$$Ta = 85 - 127.5 = -42.5°C$$

B) In free air with heatsink (CV).

$$T_{rca} = 3.5$$

$$\Delta T = 3.5\,(100)\left[\frac{1}{0.80} - 1\right] = 87.5°C$$

$$Ta = 85 - 87.5 = -2.5°C$$

C) With 400 LFM of air flow.

$$T_{rca} = 1.8$$

$$\Delta T = 1.8\,(100)\left[\frac{1}{0.80} - 1\right] = 45°C$$

$$Ta = 85 - 45 = 40°C$$

EXAMPLE 2:

What would be the maximum output power for a UAC24S module at an ambient temperature of 50°C with an efficiency of 80%.

A) If the module is used in free air.

From Table 1: T_{rca} = 5.1

Using Relation (2)

$$85 - 50 = 5.1\, P_{out} \left[\frac{1}{0.80} - 1\right]$$

$$P_{out} = \frac{35}{5.1\,[0.25]} = 27.5 \text{ Watts}$$

B) If the module is used in an area with forced air at 200 LFM with no heatsink.

T_{rca} = 2.8

$$P_{out} = \frac{35}{2.8\,[0.25]} = 50 \text{ Watts}$$

C) If the module with heatsink (CV) is used in free air.

T_{rca} = 3.5

$$P_{out} = \frac{35}{3.5\,[0.25]} = 40 \text{ Watts}$$

EXAMPLE 3:

At a maximum ambient temperature of 50°C and an efficiency of 80%, how could a UAC24S module be used if 200 Watts of output power is required.

Using Relation (2), we first find the maximum thermal resistance from case to air.

$$\Delta T = T_{rca}\,(200)\left[\frac{1}{0.80} - 1\right]$$

$$85 - 50 = T_{rca}\,(5.0)$$

$$T_{rca} = 0.7$$

A) If no heatsink is used.
From Table 1, more than 1,000 LFM of airflow is required.

B) If a (CV) heatsink is used.
700 LFM of airflow is required.

C) If a (CH) heatsink is used.
400 LFM of airflow is required.

For immediate engineering assistance or to place an order:
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