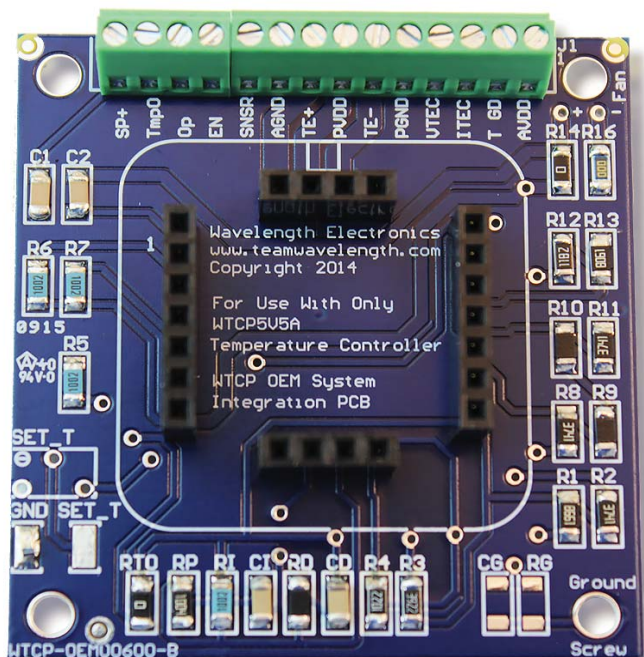


# DATASHEET AND OPERATING GUIDE

# WTCPOEM

## System Integration Board for WTCP5V5A



### FEATURES AND BENEFITS

- Works with WTCP5V5A 5 A PWM Temperature Controller
- System integration board loaded to your exact specifications
- Compact size
- Immediate integration into your system

### COMPACT, POWERFUL, EFFICIENT

The WTCPOEM board condenses the adjustable functions of the WTCPEVAL board into a compact, fixed-value board, perfect for system integration. At 2.1" x 2.0", it includes a monitor / output connector, either a setpoint trimpot for a variable setpoint or a resistor pair for a fixed setpoint, resistors to set cooling and heating limits, and all the tuning parameters.

**NOTE:** The WTCPOEM does not include the WTCP5V5A module.

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### ORDERING INFORMATION

PART NO	DESCRIPTION
WTCPOEM	OEM PCB for WTCP5V5A
WTCP5V5A	±5 A PWM Temperature Controller
WTCPEVAL	Evaluation board for WTCP5V5A
WEV300	Thermal Management Kit -- Thermal Washer and Heatsink
WEV301	Thermal Management Kit -- Washer, Heatsink and +5 V Fan
WEV302	Thermal Management Kit -- Washer, Heatsink and +12 V Fan



# SCHEMATIC & COMPONENT LOCATOR

Figure 1 shows the WTCP5V5A schematic. Figure 2 shows the board top view with labeled components.

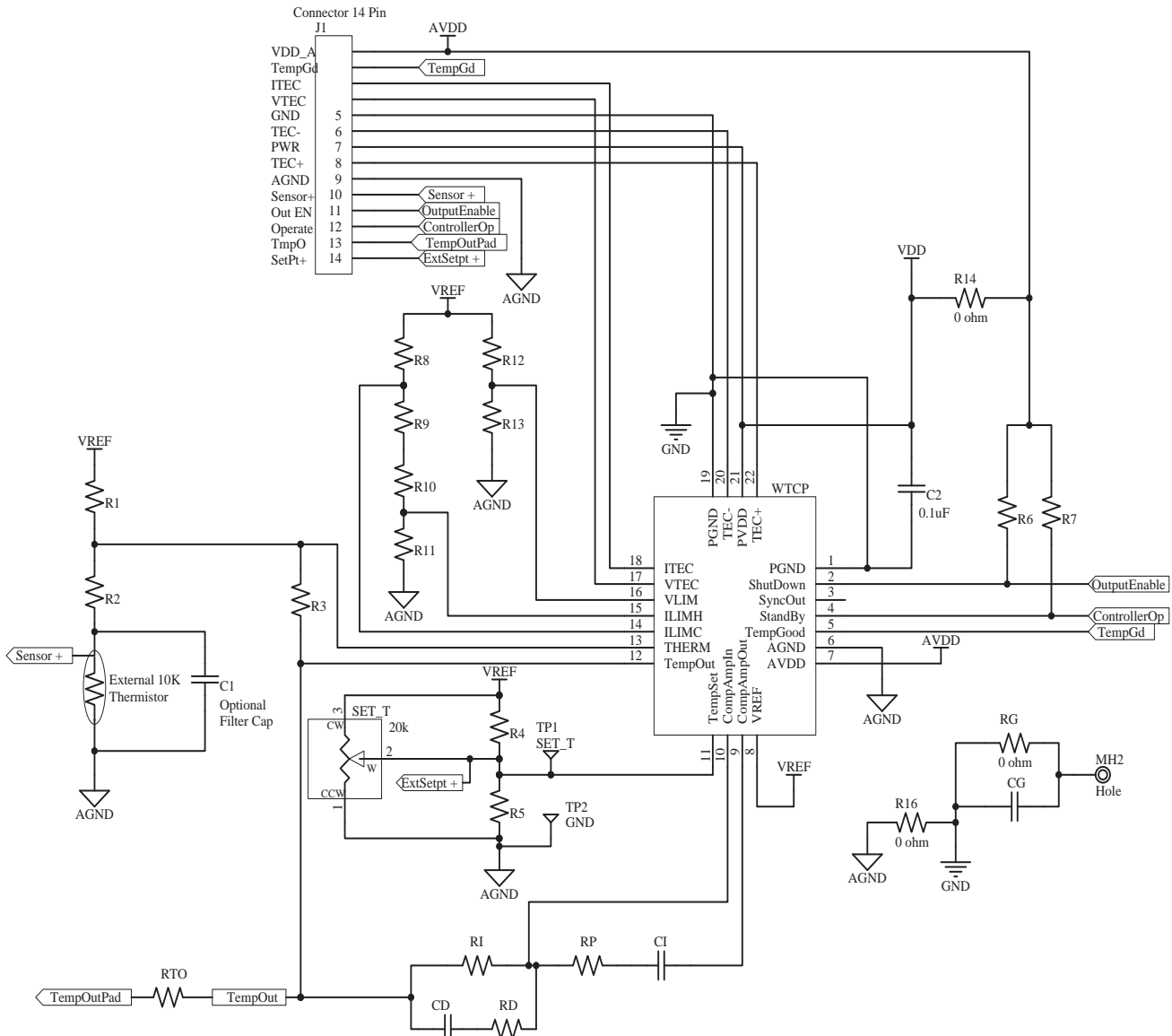


Figure 1. WTCP5V5A Schematic

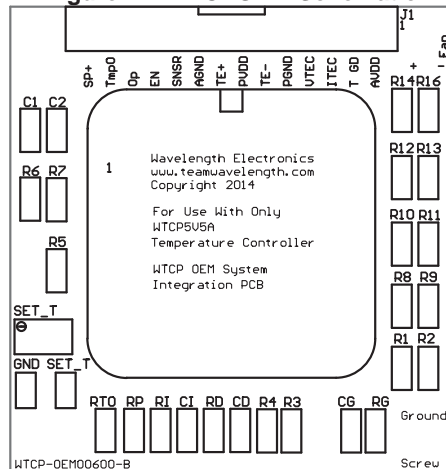


Figure 2. WTCP5V5A Component Locator

NOTE: On Rev. A, TempOut pad was GND instead

## ORDERING DETAILS

To order the OEM board loaded with parts to fit your application, provide the following information. To obtain this information, use the WTCPEVAL board in conjunction with your application or use Wavelength’s Component Configurator:

[www.teamwavelength.com/downloads/software/wtcp-calc.exe](http://www.teamwavelength.com/downloads/software/wtcp-calc.exe).

You will need the answers to the questions in **Table 1** when you talk to your sales representative.

**Table 1. Custom Parameter Values Required**

PARAMETER	VALUE		
<b>Thermistor resistance at 25°C</b>			
$R_i$			
$R_p$			
$C_i$			
$C_D$			
$R_D$			
<b>Upper Temperature Limit (°C)</b>			
<b>Lower Temperature Limit (°C)</b>			
<b>SET Point (°C)</b>			
<b>SET Point format</b> For a variable setpoint, choose TRIMPOT. If you want a fixed setpoint, choose RESISTOR. If you will use an externally generated setpoint (i.e. DAC), choose EXTERNAL.	TRIMPOT	RESISTOR	EXTERNAL
<b>If using an external SET Point, do you need a 10 kΩ load resistor (R5)?</b>	Yes	No	
<b>Cool Current Limit (A)</b>			
<b>Heat Current Limit (A)</b>			
<b>TE Voltage Limit (V)</b>			
<b>Do you want TempOut on the terminal strip?</b>	Yes	No	
<b>Do you want a filter capacitor across the thermistor?</b>	Yes	No	
<b>Do you want pull-up resistors for the Output Enable or Controller Operate inputs?</b>	Output Enable	Controller Operate	None
<b>Do you want VDD_A tied to VDD_P?</b>	Yes	No	
<b>Do you want a ground connection to a mounting hole?</b> A resistor and a capacitor can be loaded to tie the lower right mounting hole to ground. Consider your system grounds, what ground loops might be introduced, and the effect on noise.	0 Ω RESISTOR	0.1 μF CAPACITOR	None
<b>Do you want the board loaded with a WTCP5V5A?</b> If so, should the WTCP5V5A be soldered or socketed to the board?	Socketed	Soldered	Not Loaded
<b>Do you want a 14-pin header, terminal strip, or nothing loaded on the output connector vias?</b>	14-Pin Header	Terminal Strip	Nothing

You will be assigned a Product Variation (PV) Number that details your loading instructions. In your PO, include the PV number. For example, order **WTCPOEM PV084 Rev???**.

MECHANICAL SPECIFICATIONS – WTCP OEM

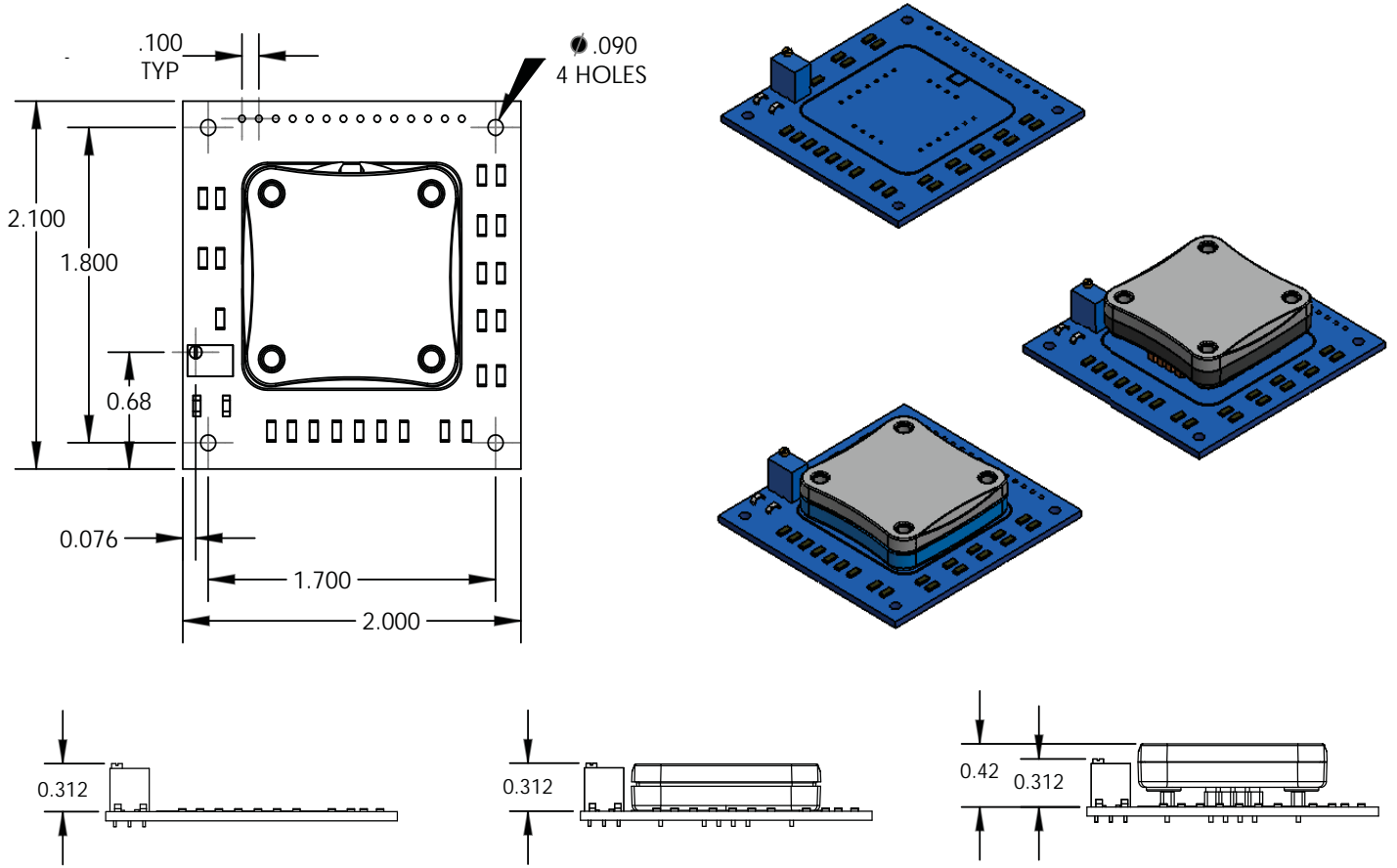


Figure 3. WTCP OEM Dimensions

NOTE: Rev. A hole diameter was 0.071"

All dimensions ±5% tolerance.  
Dimensions in [mm] inches.

## CERTIFICATION AND WARRANTY

### CERTIFICATION

Wavelength Electronics, Inc. (Wavelength) certifies that this product met its published specifications at the time of shipment. Wavelength further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology, to the extent allowed by that organization's calibration facilities, and to the calibration facilities of other International Standards Organization members.

### WARRANTY

This Wavelength product is warranted against defects in materials and workmanship for a period of one (1) year from date of shipment. During the warranty period, Wavelength will, at its option, either repair or replace products which prove to be defective.

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For warranty service or repair, this product must be returned to the factory. An RMA is required for products returned to Wavelength for warranty service. The Buyer shall prepay shipping charges to Wavelength and Wavelength shall pay shipping charges to return the product to the Buyer upon determination of defective materials or workmanship. However, the Buyer shall pay all shipping charges, duties, and taxes for products returned to Wavelength from another country.

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This important safety information applies to all Wavelength electrical and electronic products and accessories:

As a general policy, Wavelength Electronics, Inc. does not recommend the use of any of its products in life support applications where the failure or malfunction of the Wavelength product can be reasonably expected to cause failure of the life support device or to significantly affect its safety or effectiveness. Wavelength will not knowingly sell its products for use in such applications unless it receives written assurances satisfactory to Wavelength that the risks of injury or damage have been minimized, the customer assumes all such risks, and there is no product liability for Wavelength. Examples of devices considered to be life support devices are neonatal oxygen analyzers, nerve stimulators (for any use), auto-transfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, ventilators of all types, and infusion pumps as well as other devices designated as "critical" by the FDA. The above are representative examples only and are not intended to be conclusive or exclusive of any other life support device.

## REVISION HISTORY

DOCUMENT NUMBER WTCP5V5A00400

REV.	DATE	CHANGE
A	July 2014	Initial Release
B	April 2015	Added TempOut to terminal strip. Increased mounting hole diameter.



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