

Robin Z5xx Heatsink

Datasheet



Revision History

Date	Doc. Rev.	Heatsink Version	Changes
2-April-2010	Rev. 1.0	V1.0A	Initial release
01-Feb-2011	Rev. 1.1	V1.0A	New Disclaimer

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1. Introduction

The heatsink is a complete thermal solution. The heatsink is mounted to the Robin by means of 4 screws of a M2.5 thread. The screws can be mounted from the top or from the bottom. There are additional threaded holes for attaching a fan if needed.

2. Technical specifications

The following table shows the technical specifications of the heatsink.

Material	aluminum alloy 6061
Coating	black anodized
Thermal conductivity	180 W/(mK)
Weight	80 gr.
TIM¹⁾ thermal conductivity	5.5 W/(mK)
Thermal resistance (Module²⁾-Alu)	<0.9 K/W
Thermal resistance (Alu-Ambient without fan)	<7.2 K/W
Thermal resistance (Alu-Ambient with fan)	<1.5 K/W

1) TIM = thermal interface material

2) The temperature of the module is measured in the on-module thermal sensor.

3. Compatibility

Version	Content	Comments
V1.0A (23041000)	Heatsink 12mm height TIM M2.5x12mm screws nuts Blister packaging	Robin Z5xx V1.0: Full compatible Robin Z5xx V2.0: Full compatible Daisy V1.0 and V1.1: Full compatible Lily V1.0 and V1.1: Full compatible Lily V2.0: compatible, but longer screws needed *2 Lily V2.1: Full compatible

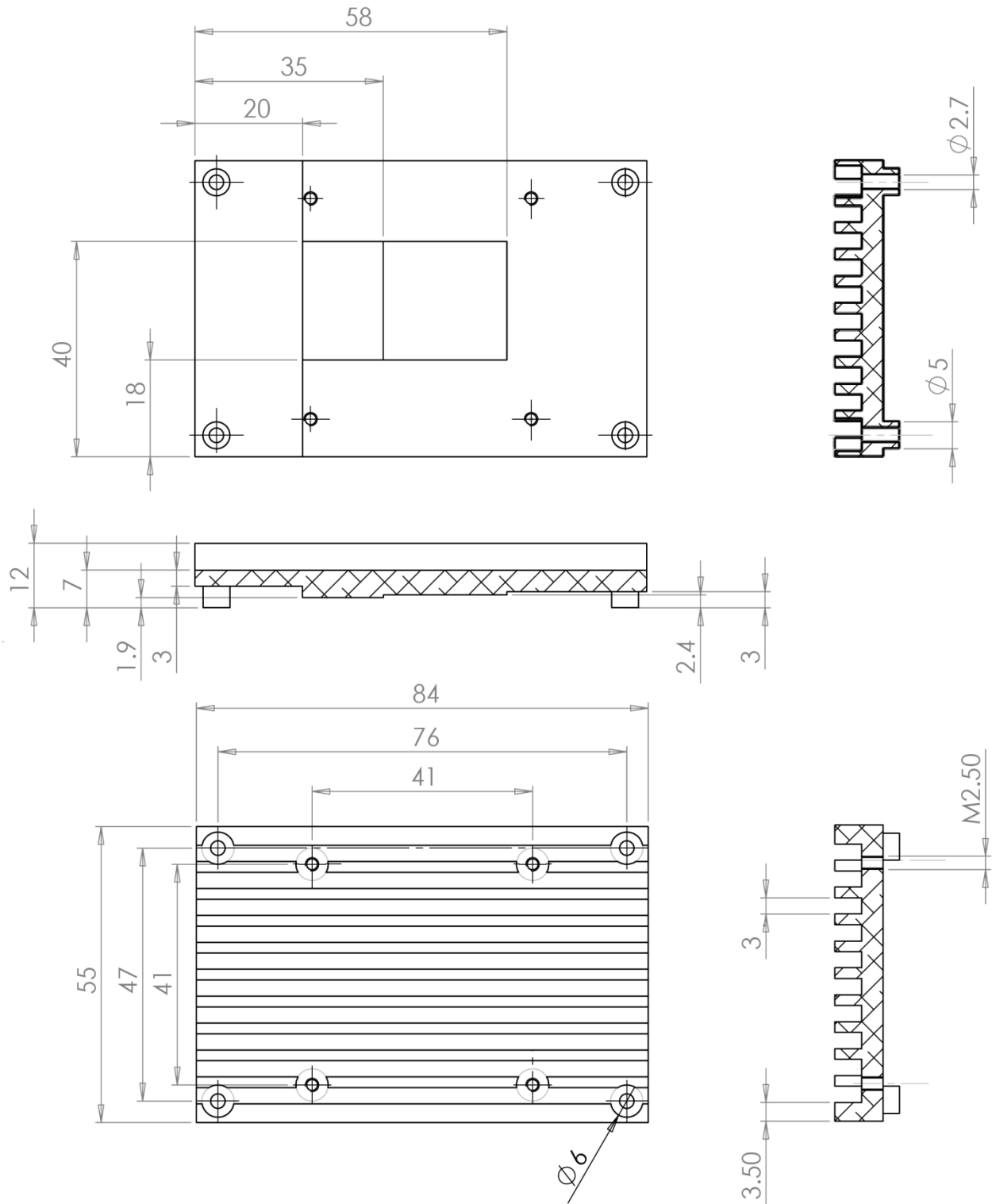
Robin Z5xx V1.0 PCB thickness: 1.6mm -> overall nominal thickness with heatsink: 13.60mm

Robin Z5xx V2.0 PCB thickness: 2.0mm -> overall nominal thickness with heatsink: 14.00mm

*2: Standoffs on Lily V2.0 are M3 threaded, longer screws are needed to mount the Heatsink on Lily V2.0 carrier board.

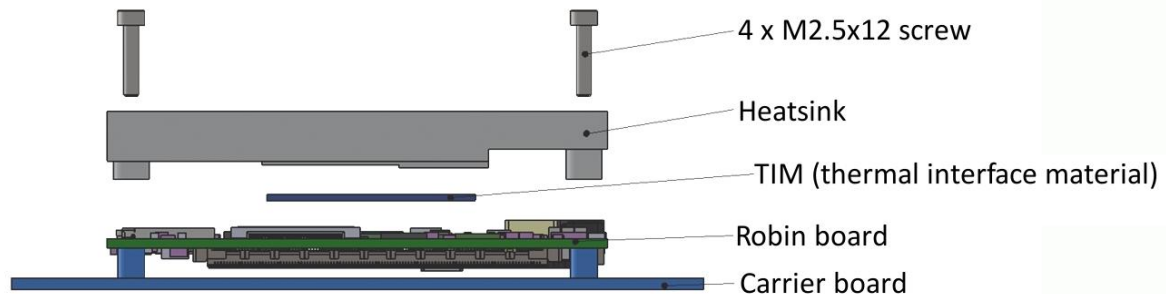
4. Heatsink dimensions

The following drawings illustrate the mechanical dimensions of the heatsink. All measurements are in millimeter.



5. Assembly

Assembly must be done very carefully since putting the heatsink in a wrong way will damage the Robin module or may prevent the system to work properly. The screws to use depend on the solution, one possible solution is illustrated below.



5.1. Assembly procedure

The following procedure shows how to attach the thermal interface material (TIM) and the heatsink on the example of assembling a complete heatsink solution to the Robin module. Please read the procedure very carefully in order not to damage the module.

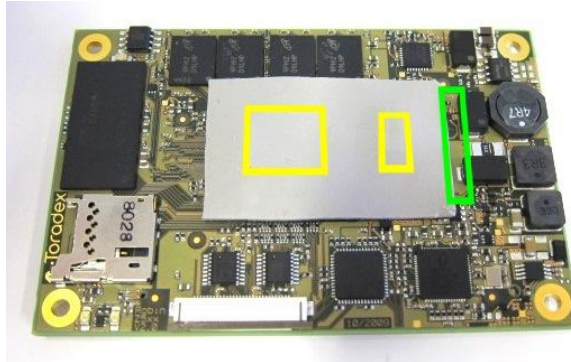
1. The yellow rectangle shows where the TIM must be placed. That is on the left, the System Controller Hub (=SCH=Poulsbo=US15W) and on the right the Atom (=CPU=Silverthrone) processor.



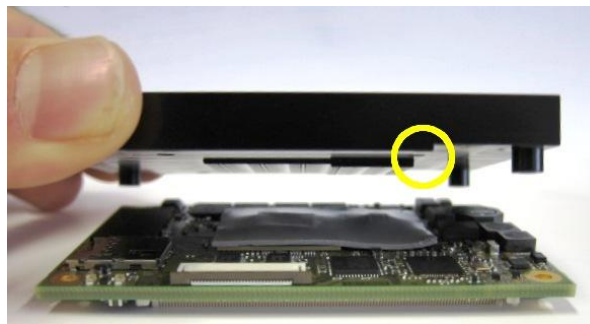
2. Remove the plastic foils on the TIM (on both sides) and attach the TIM as shown over the SCH and CPU.



3. Make sure the TIM covers completely the Silicone of the SCH and CPU (yellow) and is not placed on the capacitor on the right side (green).



4. On attaching the heatsink, make sure the yellow marked corner is on the right side. (Very important for Robin since the position of the screws don't assure that it is mounted correctly).



5. Mount the heatsink in a way that the position of the holes is right from the beginning (moving it may not be possible since the TIM sticks the aluminium and print together).



6. Use M2.5 screws to fix the heatsink together with module.



7. Done.

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