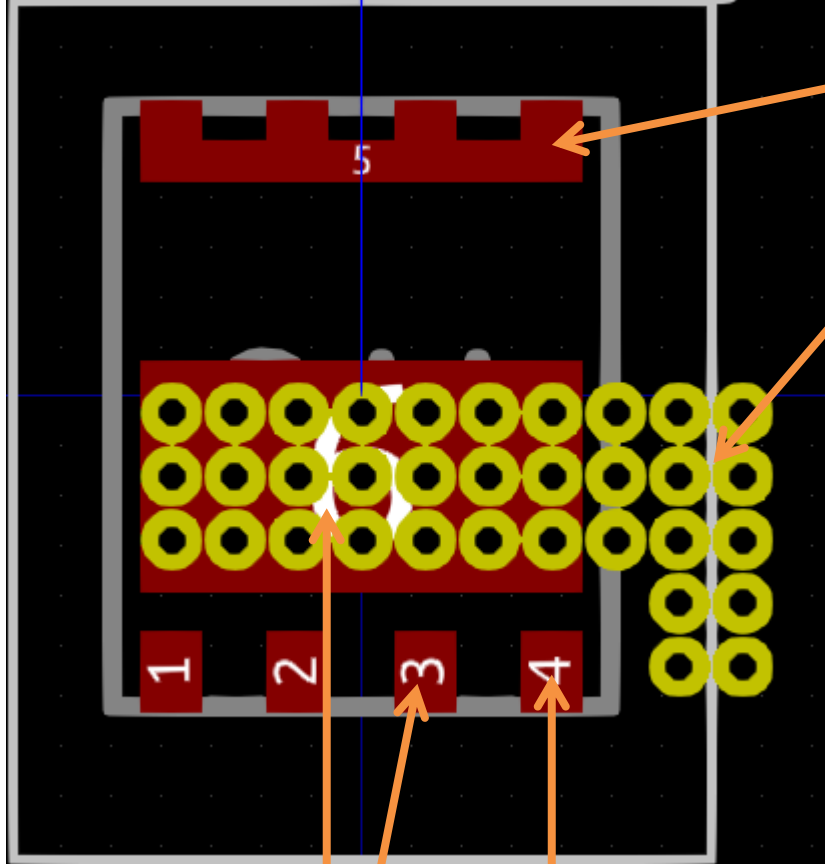# Thermal design for GS0650111L

Drain

Have to manually add copper over these vias as the footprint is solder mask defined and no option in kicad for solder mask covered portions of pads

GS0650111L

PCB

Vias
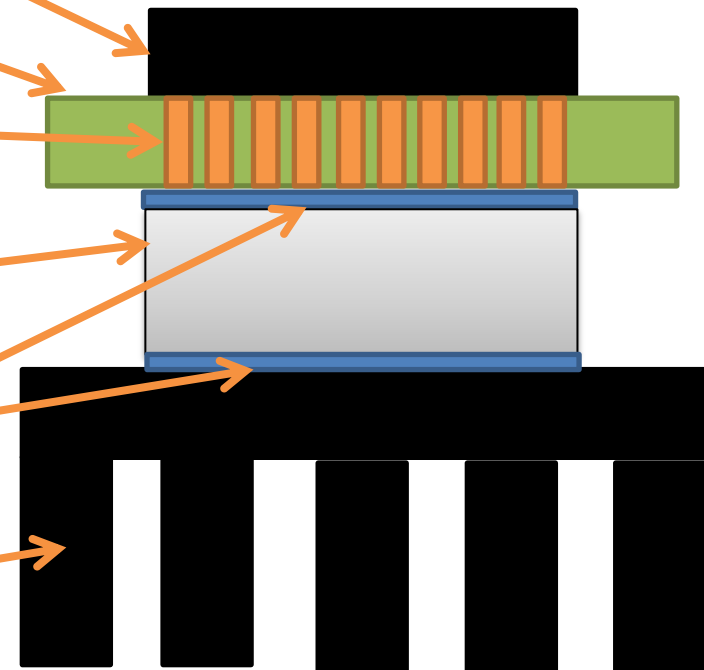
Aluminium block

Thermal Interface

Heatsink

Source

Gate

Component	Rth	Specification
Junction to case	1.4	Package
Vias	4.6	34 x 0.3mm Dia 18µm plating (allPCB) , 1 mm thickness PCB, PCB uses 2oZ copper
Thermal interface	0.388	6.5 x 6.2 mm (area of entire device + addition side bit to full height)
Aluminium block	0.605	Size of above
Thermal interface	0.388	As above
Heatsink	3	Typical value, the heat sink will be shared between other devices so is best modelled as a constant temperature sink in this scenario. We will need to keep this below 50c for safety reasons.

Device thermal impedance minimum (not including heat sink and spreading increases) = 7.381 k/W, maximum junction temp 150C, if we assume heat sink is held below 50c this means maximum dissipation is 13.5W, however we should realise that aspects of this analysis are optimistic and dissipation is increased at high junction temps. Therefore we shall aim for <6.8W per device dissipation