

# **TITLE OF THE INVENTION: SEMICONDUCTOR PACKAGE ASSEMBLY WITH DIRECT WATER COOLING SYSTEM**

## **Abstract**

A semiconductor package assembly, comprising: a first semiconductor package having at least one first electronic component exposed from its front surface; a second semiconductor package stacked on the first semiconductor package and having at least one second electronic component exposed from its front surface, wherein the first and second semiconductor packages define therebetween a first fluidic channel; and a lid stacked on the second semiconductor package; wherein the lid and the second semiconductor packages define therebetween a second fluidic channel to which the at least one second electronic component is exposed; wherein the second semiconductor package has openings passing therethrough to fluidly connect the first fluidic channel with the second fluidic channel, such that a coolant is capable of flowing within the first and second fluidic channels to dissipate heat generated by electronic components out of the semiconductor package assembly.

[Fig. 1]