

ABSTRACT

LOCK IN THERMAL LASER STIMULATION THROUGH ONE SIDE OF THE DEVICE WHILE ACQUIRING LOCK-IN THERMAL EMISSION IMAGES ON THE OPPOSITE SIDE

Controlled amount of heat is injected into a stacked die using a light beam, and the propagated heat is measuring with LIT camera from the other side of the die. The thermal image obtained can be characterized so that it can be used to calibrate the phase shift from a given stack layer, or can be used to identify defects in the stacked die. The process can be repeated for each die in the stack to generate a reference for future testing. The thermal image can be investigated to detect faults, such as voids in vias, e.g., TSV.

Figure 1