

DETECTING ANOMALOUS WEAK BEOL SITES IN A METALLIZATION SYSTEM

ABSTRACT OF THE DISCLOSURE

Generally, the subject matter disclosed herein relates to detecting the presence of
5 anomalous weak BEOL sites in a metallization system of a semiconductor chip or wafer.
One illustrative method disclosed herein includes, among other things, performing a
lateral force test on a pillar bump (703, 903) formed above a metallization system of a
semiconductor chip, the lateral force test including contacting the pillar bump with a test
probe (720, 920) while moving the test probe at a substantially constant speed that is
10 less than approximately 1 $\mu\text{m}/\text{sec}$ along a path that is oriented at a substantially non-zero
angle relative to a plane of the metallization system. Furthermore, the substantially non-
zero angle is established so that the test probe (720, 920) is moving substantially away
from the metallization system and so that a force imposed on said pillar bump by the test
probe during the lateral force test has an upward component that induces a tensile load
15 on the metallization system. Moreover, the disclosed method also includes determining
a behavioral interaction between the pillar bump and the metallization system during the
lateral force test.

Fig. 7a