



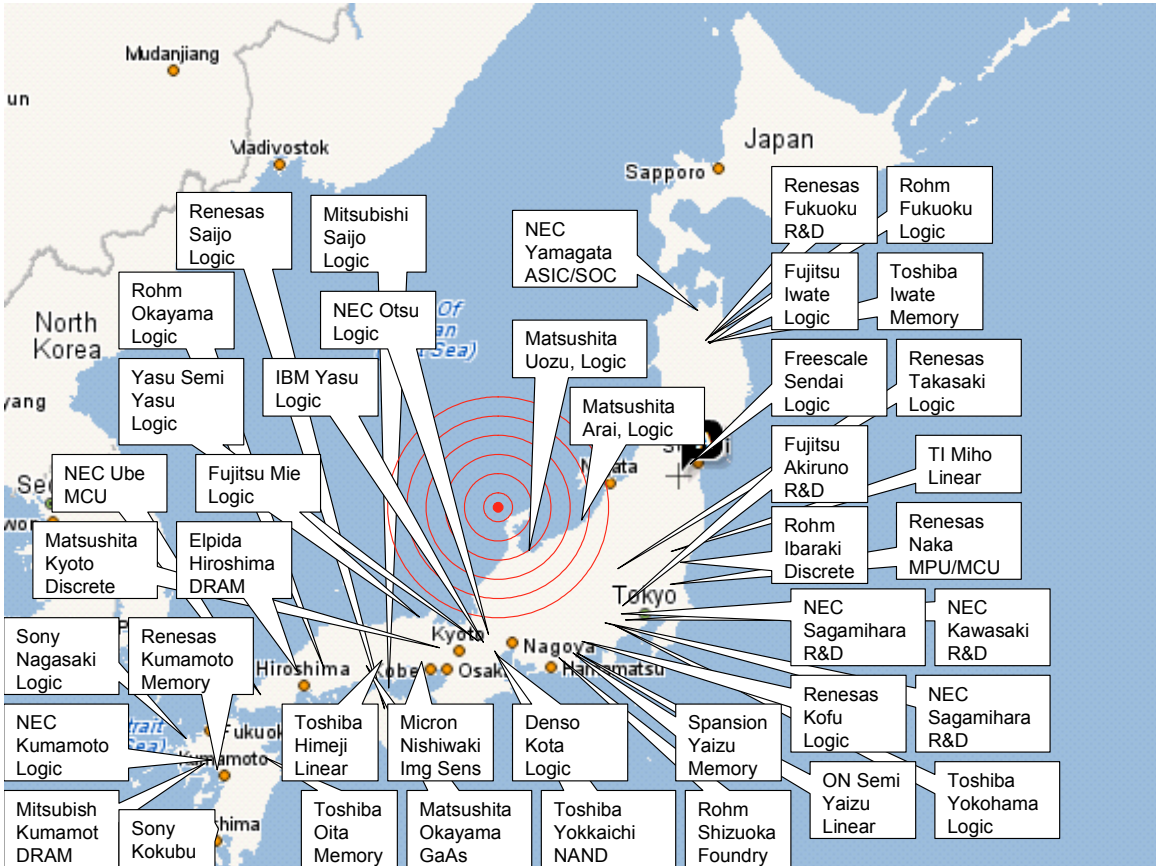
OBJECTIVE ANALYSIS

Semiconductor Market Research

OBJECTIVE ANALYSIS ALERT!

EARTHQUAKE IN JAPAN – NO FABS REPORTING LOSSES

An earthquake of magnitude 6.9 on the Richter scale struck off the coast of Japan at 9:42 Sunday morning causing damage to areas in central Japan, killing one person and injuring nearly 200 others. Although the earthquake was felt in Tokyo, damage was limited to the western side of the island of Honshu, but the very small scales involved in semiconductor manufacturing make fabrication extremely sensitive to vibration.



Objective Analysis put together the map shown above to illustrate the locations of Japan’s wafer fabrication facilities (fabs) in comparison to the epicenter of the earthquake. All data is taken from an extensive database of the world’s semiconductor fabs painstakingly assembled by analysts at the firm.

The map makes it clear that the only wafer fabs within proximity of the earthquake’s epicenter are owned by Matsushita. The company has issued no press release, and a call

to their US office confirmed that no statement has been made, leading us to suspect that damage, if there is any, must be light.

Most of Japan's wafer fabs are built on the southern or eastern side of Honshu Island.

Typically an earthquake will disrupt the processing of any wafers that are on a photolithographic tool at the time that the earthquake struck. Although a very large earthquake in close proximity to a fab can cause physical damage to the structure that is greater than the damage the building is designed to sustain, most fabs are designed to accommodate the kind of earthquake that is typical to the area. Fabs are built on a special floating floors that isolate the internal equipment from external vibration ranging from tiny earth tremors or vibrations from a passing truck to minor earthquakes. Greater earthquakes may not cause damage but their vibrations can result in incidental damage to the products being processed.

If there is a power loss, no matter how brief, wafers in a high-temperature process may have to be scrapped. If the power loss lasts 20-30 minutes or longer there may also be a period of unexpected downtime as furnaces are brought back to a stable temperature. Another possible difficulty would be possible breaches in the clean environment. Earthquake damage may even require recalibration and further losses of work in progress (WIP) than are spelled out here. Losses could run into multiple days, stopping product flow for a week or more.

Our expectation is for the results of this particular earthquake to be negligible to Japan's semiconductor production.

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