



Market Insights

January 2024 Japan Earthquake





January 2024 Earthquake in Japan: Impact on Semiconductor Industry and Manufacturing

Summary

Several recent reports highlight the aftermath of a powerful 7.6 magnitude earthquake in Ishikawa Prefecture, Japan, particularly its impact on the semiconductor industry and related manufacturing. Major semiconductor facilities, including those of Toshiba, Murata Manufacturing, and others, experienced temporary closures and disruptions. While the human toll is acknowledged, experts suggest that the industry's current conditions, along with Japan's proactive infrastructure measures, have contributed to minimizing the overall impact on semiconductor manufacturing plants. Companies are racing to resume production, and initial assessments indicate manageable damage.

Key Updates

- The earthquake led to temporary closures and disruptions in semiconductor-related facilities, including major players like Toshiba, Murata Manufacturing, and others.
- The recent 7.6 magnitude earthquake in Japan has led to temporary closures of chip and electronics companies in Ishikawa Prefecture, including Toshiba, GlobalWafers, and Murata.
- While the semiconductor industry may experience a limited immediate impact with manufacturing facilities halting production, the destruction is expected to drive demand for construction materials, leading to potential shortages and increased prices. Additionally, property reinsurance costs globally are likely to rise, though the logistics industry is expected to face localized disruptions.
- Temporary shutdowns of key semiconductor-related facilities, including MLCC manufacturer TAIYO YUDEN, silicon wafer producers Shin-Etsu and GlobalWafers, as well as Toshiba and TPSCo. Preliminary inspections suggest manageable impact due to the seismic-resistant infrastructure, off-peak industry season, and existing component inventories, with most facilities situated within seismic intensity levels that align with structural tolerances.
- TrendForce's investigation reveals limited damage to semiconductor-related facilities, providing reassurance to the global supply chain.
- The earthquake's effects on manufacturing are expected to have lasting consequences on supply chains, with companies working to overcome disruptions and assess damages. The need for careful evaluation and monitoring remains crucial for a gradual recovery in the affected regions.
- Tower Semiconductor provides an update, confirming the safety of employees and expressing commitment to operational safety, stability, and minimal disruptions.
- In the aftermath of a magnitude 7.6 earthquake on Japan's west coast, manufacturers, including major players like Toyota and Murata Manufacturing, scramble to resume production amid infrastructure disruptions, with 80% of affected companies planning or already restarting operations.
- While there are challenges and ongoing assessments, the overall impact on the semiconductor sector appears limited, considering current industry conditions and geographical distribution.



Impact Assessment

In the wake of the recent earthquake in Ishikawa Prefecture, Japan, Z2Data Company ran a risk analysis on components manufactured in and nearby regions potentially impacted by the said phenomenon. The company maps electronic parts to their manufacturing site and categorized their risk of disruption based on the following metrics: 0-80 KM – High Grade Impact; 81-120 KM – Medium Grade Impact; 121-199 KM – Low Grade Impact. The results are the following:

High Potential Impact

- Murata - Fixed Inductors / EMI Products
- Kemet - Tantalum Capacitors
- KOA Speer - Chip Resistors
- SUSUMU CO.,LTD. - Chip Resistors

Medium Potential Impact

- Taiyo Yuden - Ceramic Capacitors
- Rubycon – Capacitors
- Cosel - DC/DC Converters

Low Potential Impact:

- Panasonic Industrial Devices - Chip Resistors
- Seiko Epson - Crystal Oscillators
- Stackpole - Chip Resistors
- Rubycon – Capacitors
- Nichicon – Capacitors
- Renesas - SRAM, Crystal Oscillators, Transceivers
- Onsemi - Diodes, Opto-couplers, MOSFETs

By Brand Updates:

KOA

- KOA, a chip resistor manufacturer, is assessing the potential impact of an earthquake on its two plants located slightly outside the affected area; while operational disruption may be minimal, delivery delays are anticipated due to potential transportation route closures for repairs

Murata

- Murata Manufacturing Co., Ltd. reported that its Komatsu City plant in Ishikawa Prefecture, impacted by the Noto Peninsula earthquake, resumed production on the 9th, while operations at four other plants in the region are still halted; the company, with thirteen factories in the Hokuriku region, is particularly assessing the impact on two plants in the earthquake's epicenter responsible for PCB assembly in smartphones, as well as Anamizu Murata Manufacturing Co., Ltd., and Wakura Murata Manufacturing Co., Ltd., with updates available on the aftermath.



Sanken Electric

- Sanken Electric, a manufacturer of power modules and components, has experienced significant damage to its infrastructure, particularly with three production facilities near the earthquake's epicenter; the Shika plant is presently without power, and the complete impact on product shipments is under assessment and verification.

Toshiba Electroics

- Toshiba partially resumed semiconductor production in Ishikawa after earthquake damage, but full operations await quartz glass replacement, causing a 1-4 month delivery delay; a power semiconductor manufacturing base remains halted with infrastructure damage, and potential impact on Murata MLCCs in Toyama is reported.

Tower Semiconductor

- Tower Semiconductor, a semiconductor foundry, stated that the earthquakes had minimal impact on its Uozu City and Tonami City plants, with no significant operational disruptions.

Taiwan Semiconductor

- TSMC's Kumamoto, Kyushu factory is at impact level 1-2 with reported minor damage causing disruptions.

UMC United Semiconductor Japan (USJC)

- UMC, the most impacted semiconductor company at level 4, has drastically reduced production, potentially leading to supply constraints for logic ICs and power discrete

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