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Japan's Disaster and Its Impact on Passive Components

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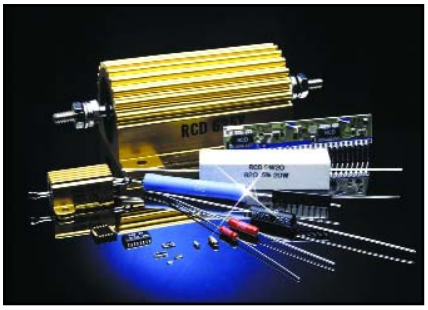
The situation in Japan, the world's third largest economy behind the US and China, has worldwide consequences. Toyota, for example, announced that it will be forced to shut down all of its North American factories, affecting some 25,000 workers, because of parts shortages resulting from the disaster. Other auto manufacturers in North America are facing shortages and delays that will affect output and may entail temporary lay-offs.

Apple, concerned with shortages, is reportedly paying higher prices to ensure timely production of iPads and iPhones. Sony, Toshiba, Mitsubishi, Hitachi and others have had interruptions to manufacturing, which will affect cameras, DVD players, TVs, mobile phones, and even some medical devices. We are beginning to see significant but somewhat unpredictable shortages that are going to have an economic ripple effect around the globe for months to come, potentially causing some instances of dramatic price increases.



Some of the products in the SWIFT™ delivery program.

Some of the areas in electronics most affected seem to center on NAND flash memory, DRAMs, LCDs, microcontrollers, and standard logic. Japan is by far the largest supplier of silicon for semiconductor chips and should this supply be disrupted significantly, it would have a major impact in many areas including MOSFETs, transistors, and discretes. Some of the delays from Japan are caused by loss of power infrastructure, resulting in rolling blackouts; approximately 10 percent of Japan's power generation has been shut down. The logistical and transportation infrastructures are also hampered, resulting in disruptions in the supply chain as well as shortages and higher prices. Many of the shortages are just starting to have an impact, but these and their price effect are likely to be with us until the third quarter. Then there are passive electronic components; just what impact will the triple disaster in Japan have upon them? Opinions vary greatly; some say there will be very little impact, while others believe there will be a very serious impact.

Those who say it will have very little impact point out that the vast majority of Japan's largest electronic component producers do their manufacturing far to the south of the epicenter of the earthquake and the major tsunami damage. This is accurate and from some of these manufacturers and their websites in April:

KOA Denko. A few locations were closed for a few days.

Kyocera. At many locations there was "partial damage to the building and equipment" but production resumed in March.

Murata. Most locations are operating. Regarding the Tomeshi, Miyagi plant (inductor coils and EMI filters), their website states, "We predict that we will be able to start gradual production of the remainder of the products from April 11." At the Sendai-shi, Miyagi plant (piezoelectric devices and filters) "partial lifelines have been restored . . . and preparations are underway to begin production from mid-May."

Nippon Chemicon. Most locations are operating and there are updates available on three locations: at the Takahagi, Ibaraki plant, "It is expected to take about three months to resume production". At the Osaki, Miyagi plant, "It is expected to take about two months for normal production to be resumed". And at the Nishi-Shirakawa, Fukushima plant, "The company has partially resumed production".

Panasonic. It seems that all plants have resumed production and "Fukushima Factory in Fukushima Prefecture and Sendai Factory in Miyagi . . . partially resumed production on April 1, 2011."

RCD Components. "All product manufactured in Japan has redundant manufacturing and this has been increased at US and other facilities to buffer any delays due to power outages. All products from Japan are certified as non-radioactive. Some raw materials sourced from Japanese vendors is delayed and expected to normalize over the next two months.

Rohm. The last of the plants that had temporarily closed was expected to have reopened by mid-April.

TDK. It appears that most plants are in operation but are "still being affected by the rolling blackouts." TDK in Kitaibaraki-city, Ibaraki is "aiming at resuming partially its production around the middle of April."

With limited exceptions, the physical damage to passive component manufacturing plants has been relatively minor. However, there are quite a few reasons why the impact can be more serious. Companies still have to deal with power (and safe water) disruptions that are slowing production. There have also been some issues shipping out components, receiving raw materials or getting workers to the facilities, as well as other transpiration logistics problems. In addition to parts availability, the situation in Japan has prompted questions about radiation contamination of product and packaging.

Even in advance of shortages, there have been some price increases, perhaps due to the psychological blow of the disaster. However, what seems to be affecting the passive component supply cycle the most is panic buying and hoarding of inventory, which in itself can cause disruption and higher pricing. This may have more impact than the actual natural and nuclear disasters on prices and lead-times for the next few months. Buyers are worried and seem to be over-consuming out of caution, even if, as is the case with the overwhelming majority of passive electronic components, there is no supply issue. There seems to be a lot of misinformation being bandied about. The hearsay and uncertainty are clearly influencing the market. Further, many companies adopted a JIT (Just-In-Time) or lean manufacturing model some years earlier and are learning that sometimes things can be "too lean" and are now building in some safety buffer stock as insurance.

RCD's SWIFT™ program, headquartered in Manchester, NH is receiving a lot of attention and a surge in orders as a result of the current market situation. This exclusive service enables the delivery of a wide range of non-stock passive components in small to medium quantities in as little as 1 week. Included are power, precision, high-voltage, high-temperature, fusible, flameproof, network and even custom products, in various technologies in both through-hole and surface mount styles.

There have already been price increases, even where there are no shortages, but the market is reacting to the psychological blow of the disaster and perceived disruption of the supply chain.

In the short term, some passive component manufacturers are enjoying a boom in business with firm or rising pricing. But the extra buying as a result of the Japan disaster will probably not last much longer than May or June. There may be some spot shortages or delays in some electrolytic and ceramic capacitors, but if so, it would be for a very short period of time and very minor unless there are additional serious earthquakes. After May or June, there may even be a slowing as a result of accumulated inventories. Additional market pressures are likely to come about due to rising oil prices — which besides the unstable situation in the Middle East, may be further impacted by Japan using other fuel sources to make up for the loss in nuclear generated power. All in all though, it is expected that 2011 will be a very good year for passive component manufacturers.

American companies could partially insulate themselves from part shortages in the future by encouraging manufacturing in this country, but globalization may be here to stay and many US firms seem to not look much beyond the next quarter. RCD believes that in both the short and longer view, an increase in domestic manufacturing capacity can provide a competitive advantage; our US workforce has grown by almost 30 percent this year thus far.

RCD is also taking a less "passive" stance on new product introductions, with 3 to 4 new product introductions per quarter slated for the next few years in its core "RCD" products (resistors, capacitors, coils, and delay lines). Many of the new products will be very application-specific to some of the latest electronic products and trends that are now emerging. This is especially true of media and data convergence products. And let us not forget smart phones, smart meters, smart TVs, smart appliances and smarter "everythings". Also, there are many new opportunities with the booming tablet market, 3D products, green energy and connected automobiles.

RCD's new products involve various precision and power resistors including high voltage, high surge, microwave, and thermistor models; high capacity tantalum and ceramic capacitors; and a variety of magnetics — coils, inductors and transformers. One trend in its infancy that will become more popular in the future concerns passive components embedded in PC boards. RCD has developed, and is developing a wide range of specialty resistor, capacitor and inductor products for such embedded circuits. Printed circuit boards of this type allow for further miniaturization of the PC boards themselves and the electronic devices they are used in. Additional benefits can include improved reliability, electrical performance and signal integrity, and perhaps lower overall cost. It would also help free up board surface area for active components, thus increasing functionality.

The passive component market for the remainder of 2011, if nothing else, will be "interesting". RCD stands at the ready to service customers with one of the industry's widest range of passive components, and some of the best prices and shortest lead-times.

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