

Technology Supply Chain

Automotive Insights – October 2025

Important Disclosures in the Appendix

Nexperia and Supply Chain Update: Disruption Emerging as Systematic Risk; Resolution Hinging on Dutch-China Talks

Nexperia Disruption: Channel Feedback and Supply Chain Implications

1. The Nexperia situation is seen quickly escalating into a systemic supply-chain risk. The scope of exposure appears broad, with Nexperia content embedded in virtually every Auto electronics program, and extending into Industrial and select Datacenter systems.
2. The Auto supply chain appears most at risk, with feedback indicating Tier 1 suppliers on average carrying only a couple of weeks of Nexperia inventory and facing uncertainty over the extent to which distribution buffers can sustain output. Near term, auto customers are seen as likely to prioritize complete kits for their highest margin platforms while preparing for potential line downs in the coming weeks, with speculations of VW output disruption in Europe as early as this week.
3. Near-term resolution appears contingent on the Dutch government's ability to negotiate a deal with China to remove the Nexperia export ban, though feedback suggests it could take several weeks for supply to reach OEMs even in the event of an immediate deal.
4. While the majority of Nexperia's front-end capacity is noted as located outside of China, feedback suggests 70-80% of its back-end capacity is in China. In some cases, the facility in Guangdong is also noted as used for wafer singulation even when final assembly occurs in Malaysia or the Philippines, underscoring the importance of the operations in China.
5. In the interim, Nexperia is seen as likely allocating nearly all of its available capacity outside of China to the Auto sector, while suggesting it would take 3-6 months to restore supply for most parts if no resolution is reached with China. Some supply chain participants view that timeline as overly optimistic.
6. Feedback suggests Nexperia offers ~15K SKUs, of which 7-9K are Automotive. The company is seen recently issuing a "whitelist" of ~6K parts that could be produced outside China, though feedback suggests that figure could be overstated due to duplicate listings. Nexperia is also expected to release a "blacklist" of an unknown number of SKUs currently made only in China.
7. Preliminary feedback suggests that, on average, 60-80% of Nexperia parts on Auto/Ind BOMs have comparable drop-in replacement, while the remaining 20-40% are likely sole-sourced. The most acute issues appear tied to a subset of those sole-sourced parts manufactured in China using uncommon leadless package types.
8. In Auto, the substitution with alternative parts is seen as dependent heavily on the application type and available inventory. For non-safety functions, customers are viewed as likely to deploy accelerated "paper" qualifications to maintain output continuity, but for safety-critical and power train applications where Nexperia is the only supplier on the AVL, a full qual process is likely to be required.
9. onsemi, Vishay, and TI are noted as the three suppliers with the highest overlap in drop-in compatible parts with Nexperia, followed by Diodes, Panjit, MCC, Infineon, and STMicro in that order.
10. Feedback suggests customers have begun the process of shifting demand to alternative suppliers, though it appears that limited inventory and reduced factory loadings may constrain some suppliers' ability to meet immediate customer needs. To raise utilization and support MT demand, some suppliers are seen requesting varying terms and conditions, with the most aggressive including 18 months of guaranteed volume, NCNRs and 2x price increases, though some customers appear unwilling to accept such terms for now.
11. TI is noted as having the most overlap in basic logic ICs, estimated at 20-40% of Nexperia's Auto sales, which we previously estimated at \$600-800M in the West. TI is also seen as having inventory on hand to assist customers.
12. onsemi and Vishay are noted as having the most overlap across the remaining 60-80% of products, primarily power FETs and discretes.
13. onsemi is seen potentially having inventory to support some, but not all, near-term demand, aided by its bridge inventory build as part of its fab transition. onsemi is also seen signaling the most willingness to support customers, viewing the disruption as an opportunity to strengthen relationships following recent LTSA tensions. Assuming onsemi's comparable parts previously carried 20-30% gross margins, we estimate the company could seek 20-50% pricing increases to lift margins toward 40-50%. Such

Dennis Reed

Sr. Research Analyst

Dennis@EdgewaterRC.com

216.426.6279

Nik Todorov

Sr. Research Analyst

Todorov@EdgewaterRC.com

216.206.6103

Kevin Rottinghaus

Sr. Research Analyst - Partner

Kevin@EdgewaterRC.com

216.426.6272

increases would be modest relative to the 2× price hikes proposed by some competitors and well below broker-market pricing, where Nexperia parts are reportedly trading 30–40× above normal.

14. While Vishay's precise overlap is unclear, feedback suggests strong package comparability with Nexperia, and some contacts note historical collaboration on packaging technology between the two firms. Although Vishay is seen as having inventory on hand in distribution, it is unclear in our work to what extent Vishay can support near-term demand and how much of Vishay's support is contingent on output from its Newport fab, which is seen as still undergoing auto customer qualifications.
15. Diodes is noted recently releasing a list of nearly 5,000 functionally equivalent or pin-to-pin comparable parts with Nexperia, including more than 3,000 automotive grade components, implying roughly 40-50% overlap with Nexperia's automotive portfolio.

Channel feedback:

1. *The auto industry feels like it's in a downward spiral, with widespread concern that Nexperia's supply issues would bring production to a halt. It's reached a point where automotive customers are asking whether it even makes sense to overpay for parts just to keep building, if neighboring Tier-1s can't secure enough supply, and car production lines may shut down anyway.*
2. *There are already rumors of Tier-1 and Tier-2 suppliers experiencing line-downs due to Nexperia shortages, with VW and Audi reportedly among the first OEMs potentially affected.*
3. *We heard on Fri, Oct 24, that VW will be furloughing staff and cutting production next week in one of its factories in Europe.*
4. *We visited several Tier 1 suppliers recently, and it was alarming to hear they're already discussing imminent line-downs—just two and a half weeks after supply stopped. They explained that they carry only a couple of weeks of inventory since the product turns quickly and moves in and out of stock, and once disti inventory dries up in a week or two, they will be forced to ration production.*
5. *Nexperia is a major issue, and everyone is monitoring. Whatever problems Tier-1s had with Analog Devices two weeks ago no longer matter as the Nexperia situation is an absolute nightmare. Auto customers have all hands-on deck trying to figure out a path forward, but it's unclear whether a resolution is even possible.*
6. *Almost every Auto electronics manufacturer in the supply chain uses Nexperia for diodes and MOSFETs. Auto suppliers have abruptly lost access to Nexperia parts, and while we don't have overlap with Nexperia parts, most of our ICs end up on the same boards. That said, the situation has not reached the point yet where this is impacting our near-term demand.*
7. *Nexperia components are also reportedly used in Nvidia systems, and Nvidia is now on the market seeking over a million units across several affected parts, which appear primarily used on Nvidia's Mellanox networking chip boards.*
8. *Some customers, particularly in the Industrial segment, are taking a wait-and-see approach, expecting the situation to be resolved within two weeks. They appear to have modest inventory on hand and, given the slower demand environment, believe they can manage through the disruption, but we think they are taking a big risk.*
9. *Auto customers were the first to learn, but most were late to react - it took them a week and a half. Other guys, like Cisco, were informed on Mon/Tue, and they had a list of parts they wanted alternatives on Wed.*
10. *Nexperia has recently sent a "whitelist" of finished products that can be manufactured outside China. This doesn't necessarily mean those parts are in stock, only that they can be assembled elsewhere. The list initially included around 4,000 SKUs and expanded to 6,000 within a few days. Nexperia is also expected to release a "blacklist" over the next week that contains those SKUs that are only made in China. We have no idea the number of SKUs that could be on that list.*
11. *We recently learned that Nexperia's whitelist overstated the number of parts it could support with supply outside of China, as it apparently included duplicate entries. According to Nexperia, some unique parts can have up to five different SKU labels—each tied to a specific direct automotive customer—but in reality, they represent a single part.*
12. *We estimate that Nexperia has >15K active SKUs overall across bipolar discretes, MOSFETs, logic ICs, SiC and IGBTs, of which 7-9K are Auto AEC-Q rated.*
13. *Nexperia has also issued a notice to all automotive customers stating that it "will no longer validate the quality of any product built in China." This has sparked additional concern, as such letters typically specify a cutoff date after which products are no longer covered. In this case, no date was provided, leaving customers scrambling as that essentially voids the terms and conditions for parts purchased recently.*
14. *Pressure has escalated rapidly, and we hear that the Dutch government is negotiating with China amid fears the dispute could disrupt the entire global auto industry. Even if an agreement is reached, it may take 6–10 weeks before product shipments resume. Nexperia has been removed from the U.S. BIS list, though that offers little relief, as the problem is mainly the China export ban.*
15. *We've heard several rumors, ranging from Nexperia China potentially being split off to Dutch executives exploring the relocation of back-end equipment and the establishment of a new facility elsewhere. Neither scenario appears realistic or capable of resolving the issue quickly enough to avert automotive production shutdowns. We also heard that Nexperia's European*

Dennis Reed

Sr. Research Analyst

Dennis@EdgewaterRC.com

216.426.6279

Nik Todorov

Sr. Research Analyst

Todorov@EdgewaterRC.com

216.206.6103

Kevin Rottinghaus

Sr. Research Analyst - Partner

Kevin@EdgewaterRC.com

216.426.6272



- operations have halted wafer shipments to China in an effort to gain leverage, though it's unlikely that will persuade China to permit the export of the company's back-end equipment.
16. Nexperia has been pursuing a China-plus-one strategy for some time, and some suggest the company would have been in a much stronger position regarding China dependence within another six months. For now, Nexperia is telling automotive customers it will take three to six months to restore supply for most parts, though that timeline is viewed as overly optimistic.
 17. We were told that Nexperia would try to allocate nearly all of its available capacity outside of China for the Auto sector, though that won't be enough to meet the demand.
 18. In the near term, the auto tier 1 suppliers and OEMs are planning to prioritize having complete kits for their highest margin products and vehicles, just like during COVID.
 19. As an Industrial, Mil/Aero EMS, we've adopted a dual strategy to manage the Nexperia supply disruption. First, we analyzed our BOMs to identify SKUs with viable cross-supplier alternatives and found roughly 60% have comparable drop-in replacements. We've advised end customers to shift toward onsemi, Vishay, MCC, and Diodes. We expect to cover all cross-exposure with those suppliers, though customers should anticipate notable price increases, which will be passed through. For the remaining 40%, where Nexperia is the sole source, our only option is to secure a limited supply through distribution channels.
 20. We believe a meaningful portion—potentially 20–40%—of Nexperia's automotive portfolio may be sole-sourced due to the company's unique packaging. Nexperia offers smaller leadless packages known as DFN, some of which align with industry-standard SOT23 form factors, while others remain less common across the industry.
 21. A tier 1 customer recently requested that all Nexperia components on its BOM be replaced. We identified drop-in alternatives from other suppliers on our line card for nearly all affected parts. One semiconductor supplier indicated it could match the customers full part list but required stringent terms, including sole-sourcing, guaranteed volumes, and an 18-month NCNR commitment, along with a 2× price increase. Pricing was less of a concern given these are \$0.10–\$0.50 parts, but they ultimately declined the proposal, suggesting it likely has other viable options.
 22. There are certain parts that only Nexperia makes; not a lot, but there are some. For parts with viable alternatives, customers are primarily looking to shift to onsemi, Panjit, Diodes, and TI. Not hearing much about Infineon or STMicro.
 23. For basic logic chips, which likely represent 20–40% of Nexperia's sales mix, the only viable alternatives are TI and onsemi. TI has informed automotive customers that it has available inventory and can support demand, though only on the logic side, as TI has minimal presence in discretes.
 24. Diodes has recently released a list of almost 5,000 SKUs that are direct drop-in alternatives for Nexperia parts.
 25. onsemi is seen as the most eager to help, acknowledging missteps in the last cycle and aiming to regain Auto customers' trust. Auto customers say that onsemi has told them that it has some near-term inventory available, though that won't be enough to fully cover the shortfall immediately, and it will take 4–6 months to ramp production to meet all of the demand. While onsemi doesn't appear overly aggressive on terms and conditions as some other suppliers, given its desire to win share, it is still seeking firm commitments and higher pricing to justify the increase in supply.
 26. Over the last few years, we think onsemi has built up strategic inventory because of its fab transition strategy, and we get the sense that onsemi is working closely with customers to help near term, but clearly, they don't have enough for every part and customer. Customers are out for parts, buying everything they can, and we have seen onsemi already shipping alternative parts. These are all small signal discrete parts at very low ASP.
 27. There are 3 suppliers that Nexperia cross-references to most auto customers right now. For logic ICs, it is TI, for bipolar transistors, it is onsemi, and for power semis and discrete rectifiers, it is Vishay. We hear that Nexperia and Vishay have historically cooperated somewhat in the development of packages. There are, of course, other alternatives. There was one part where we were given 8 alternative suppliers by Nexperia.
 28. On Vishay, we heard that one automotive Tier-1 recently added the company to its AVL as a replacement for Nexperia. The challenge for Vishay is that its Newport fab is still undergoing qualification, with automotive customers originally planning to start sourcing from it in 1H26. Now, some customers who haven't completed qualification are trying to accelerate the process, but ramping will still take time. With cycle times around 18 weeks, meaningful production is unlikely before 2026.
 29. A challenge for automotive customers is that, for many parts where multiple suppliers exist, some have only Nexperia listed on their AVL. In those cases, substitution depends heavily on the product's end use. Anything tied to safety is particularly difficult, as it requires a full qualification process. However, for applications like infotainment, comfort systems, or HUDs, automakers are pursuing faster, paper-based qualifications to keep programs moving.
 30. Nexperia's front-end capacity is 50-70% outside of China, but its back end is 70-80% in China. Additionally, for some product lines the Nexperia's testing facility in China is often the one to process, test, and cut wafers before sending them for packaging in the Philippines or Malaysia.

Dennis Reed

Sr. Research Analyst

Dennis@EdgewaterRC.com

216.426.6279

Nik Todorov

Sr. Research Analyst

Todorov@EdgewaterRC.com

216.206.6103

Kevin Rottinghaus

Sr. Research Analyst - Partner

Kevin@EdgewaterRC.com

216.426.6272



31. *The pricing for Nexperia parts on the open market has skyrocketed. Parts, with an old date code, that were selling 2 weeks ago for \$0.06, are now at \$1.98 from Asian brokers.*
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APPENDIX

We, Kevin Rottinghaus, Sean Muir, Dennis Reed, and Nik Todorov hereby certify that the views expressed in this research report accurately reflect our personal views about any or all of the subject securities referred to in this research report. We certify that no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report. The analyst(s) responsible for the preparation of this report have no ownership stake in this company. Edgewater Research Company provides no investment banking services on this or any company.

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Dennis Reed

Sr. Research Analyst

Dennis@EdgewaterRC.com

216.426.6279

Nik Todorov

Sr. Research Analyst

Todorov@EdgewaterRC.com

216.206.6103

Kevin Rottinghaus

Sr. Research Analyst - Partner

Kevin@EdgewaterRC.com

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