



# Market Insights

## Q4 2023



General Market Insight	2
Analog	19
Batteries	21
Connectivity	23
Discrete	26
Electromechanical	30
High-End	33
Interconnect	34
Lighting Solutions and Opto	36
Memory	38
Passives	40
Disclaimer	43



## General Market Insight

### Semiconductor Industry Market Growth



#### Global

- The global semiconductor industry is poised for a Q4 2023 recovery, with a 22% increase in electronic sales and a 4% rise in IC sales predicted. Despite positive trends in sales, semiconductor manufacturing indicators show softness, with declining fab utilization rates and capital expenditures. Front-end equipment sales remain robust due to government incentives, while back-end equipment billings are expected to bottom in Q4 2023, signalling a turnaround and setting the stage for growth in 2024, according to the Semiconductor Manufacturing Monitor (SMM) Report by SEMI and TechInsights.
- Gartner forecasts global semiconductor revenue to grow by 16.8% in 2024, reaching \$624 billion, following a projected decline of 10.9% in 2023, valued at \$534 billion. The decline in 2023 is attributed to reduced demand from smartphones and PCs, coupled with weakness in data centre/hyperscale spending. However, a strong rebound in 2024 is expected, driven by double-digit growth in the memory market. The worldwide memory market is predicted to rebound with a 66.3% growth in 2024 after a 38.8% decline in 2023. NAND flash revenue is expected to recover from a decline of 38.8% to \$35.4 billion in 2023, reaching \$53 billion in 2024, a 49.6% YoY increase. The DRAM market, facing oversupply and low demand, is anticipated to rebound in 2024, with an 88% increase to \$87.4 billion. The demand for high-performance GPU-based servers and accelerator cards in data centres, driven by developments in generative AI and large language models, is expected to contribute to this recovery. Gartner estimates that by 2027, over 20% of new servers will include workload accelerators due to the integration of AI techniques into data centre applications.
- Global semiconductor sales in September 2023 rose by 1.9% compared to August but declined by 4.5% compared to the same month in the previous year, as reported by the World Semiconductor Trade Statistics (WSTS) organization. The third quarter of 2023 saw worldwide semiconductor sales totalling \$134.7 billion, marking a 6.3% increase from the second quarter but a 4.5% decrease from the third quarter of 2022. Despite the year-over-year decline, the month-to-month increase for the seventh consecutive time is seen as positive momentum in the chip market. John Neuffer, CEO of the Semiconductor Industry Association, emphasizes the strong long-term outlook for semiconductor demand, highlighting their crucial role in various products and the emergence of transformative technologies.
- Despite facing challenges such as the Ukraine-Russia war, Chinese lockdowns, high inflation, and demand fluctuations, the Asia/Pacific semiconductor fabless market demonstrated resilience in 2022. While the region experienced a temporary setback with a 6.5% decline in market size to \$78.5 billion, this marked the first year-on-year negative growth since the pandemic's onset. Notably, Taiwan maintained its strong position, securing 73% market share among the top 10 companies, propelled by influential players like MediaTek. Although the global semiconductor industry faced a decline, there is optimism for recovery in 2024 as companies pivot towards promising applications such as AI, high-performance computing, servers, automotive electronics, and industrial electronics, signalling a positive shift in the market's trajectory.
- The Global GNSS Chip Industry, valued at US\$ 5.2 billion in 2022, is set to reach US\$ 9.7 billion by 2032, driven by high demand in the semiconductor and electronics sector. The growth is fuelled by the superior functionality of GNSS chips, offering higher precision and the ability to receive signals from multiple satellite navigation systems. Key applications include asset tracking in Industry 4.0, benefiting automotive manufacturers in production optimization and predictive maintenance. The Asia Pacific market is projected to be worth US\$ 4.9 billion by 2032. Key players like Qualcomm, STMicroelectronics, and MediaTek are focusing on innovation and expanding product portfolios to stay competitive.



## General Market Insight

- A leading computer-chip industry group, the World Semiconductor Trade Statistics, has upgraded its global market forecasts, anticipating a robust recovery in flash-memory sales in 2024 from a worldwide slump. The group now predicts a market growth of over 13% to reach \$588 billion in 2024, up by 1.3 percentage points from its previous estimate. The optimistic outlook is driven by a significant 45% expansion in the memory products market, contributing to the expected rebound in the semiconductor industry.



### Regional

- The Semiconductor and Electronics Industries in the Philippines Foundation, Inc. (SEIPI) predicts a significant contraction of approximately 9 to 10 percent in the country's semiconductor industry for 2023. Originally anticipating a 5 percent growth, SEIPI cites the impact of global political and economic factors, coupled with inventory corrections, leading to a 15 percent contraction in the first quarter. Despite a partial recovery to 7 percent, SEIPI foresees continued challenges, estimating a 9-10 percent contraction in 2023 compared to the previous year, with a modest expectation for global semiconductor demand to stabilize in 2024.
- South Korea's exports exceeded expectations in November, growing by 7.8% year-on-year to \$55.80 billion, with overseas sales of chips rising for the first time in 16 months, signalling a strengthening global demand. Chip exports increased by 12.9%, ending 15 months of decline and suggesting a potential bottoming out in semiconductor demand. While exports to the United States saw a notable 24.7% jump, shipments to China, the country's largest trading partner, declined 0.2%, and policymakers are looking to a chip demand revival to boost economic growth amid persistent inflation risks and restrictive interest rates at home.
- Japan has implemented stringent rules for companies receiving subsidies in the semiconductor and high-tech sector, aiming to prevent technology leaks to countries such as China and Russia. The measures, similar to the U.S. CHIPS Act subsidies, require recipients of semiconductor-related subsidies to restrict access to sensitive information, enforce confidentiality agreements among personnel, and take precautions to prevent the unintentional release of critical tech details. The move by Japan's Ministry of Economy, Trade and Industry reflects the country's efforts to retain high-value technology within its borders, particularly as it works to bring advanced logic production back and enhance its supercomputer capabilities.
- Singapore's factory output rebounded in October, ending a year-long slump, with a 7.4% rise in production, driven by growth in the key electronics industry, particularly semiconductors. The turnaround was led by a 14.8% year-on-year jump in the electronics industry, with the semiconductor segment expanding by 17.8%, marking the second straight month of expansion for both electronics and chip production. The recovery in factory output is seen as a positive sign, but economists caution that the global economic backdrop remains uncertain, with factors like high interest rates and geopolitical tensions possibly affecting Singapore's manufacturing recovery in the coming months.
- The top semiconductor companies, led by TSMC, control 98% of the global market, with TSMC holding the largest share at 60% of industry revenue in Q1 2023. Samsung from South Korea, an integrated device manufacturer, earned 12.4% of the industry's revenue. The top five companies also include GlobalFoundries (USA), UMC (Taiwan), and SMIC (China), each capturing around 6% of the market, highlighting the dominance and concentration of the semiconductor industry, where the top 10 foundry companies alone account for 98% of the entire sector's revenue.



## General Market Insight

### Semiconductor Industry News

#### **Global Coalition on Telecommunications Formed by US and Allies to Advance Industry Innovation and Policy Consensus**

- The United States, along with Australia, Canada, Japan, and the United Kingdom, has established the Global Coalition on Telecommunications (GCOT) with objectives including enhancing international cooperation, diversifying the telecom supply chain, promoting open network architectures, and fostering consensus on critical telecom policy areas, representing extensive international collaboration in the field.

#### **US to Tighten Export Rules on Chipmaking Equipment for China**

- The United States is preparing to update and tighten regulations that restrict the export of US chipmaking equipment to China, aiming to close loopholes and add further restrictions in response to concerns raised by Beijing and strained relations with Washington.

#### **UK Government Launches ChipStart Incubator for Semiconductor Startups**

- The UK government has introduced its ChipStart incubator program, a part of the National Semiconductor Strategy, aimed at supporting semiconductor startups. The £1.3 million two-year program, managed by SiliconCatalyst.UK, will include two consecutive cohorts and provide design tools, mentorship, and investment networking to the participating startups. The 12 startups joining the incubator include Blueshift Memory, Fincheto, HIDRA Vision, HyperCIM, Mignon, MintNeuro, Quinas, RED Semiconductors, SECQAI, Singular Photonics, Vaire, and Wave Photonics. This initiative is part of the UK government's broader plan to invest £1 billion in the semiconductor sector over the next decade.

#### **China and US Impose Semiconductor and Graphite Trade Sanctions**

- China has tightened export controls on graphite, a critical material for electric car batteries and green energy systems, aiming to enhance global supply chain security and national interests. In response, the US expanded semiconductor export restrictions to include Nvidia chips used in artificial intelligence, with officials describing the changes as measures to close earlier policy loopholes.

#### **US and Philippines Forge Strategic Partnership to Boost Semiconductor Industry Growth**

- The United States is set to collaborate with the Philippine government in an effort to enhance the country's semiconductor industry. Through the US International Technology Security and Innovation (ITSI) Fund, the US State Department will assess the Philippines' existing semiconductor ecosystem and regulatory framework, with the goal of identifying workforce and infrastructure needs. The partnership, aligned with President Joe Biden's CHIPS Act of 2022, aims to bolster the global semiconductor value chain by fostering resilience, security, and sustainability.

#### **USPTO Launches Semiconductor Technology Pilot Program to Accelerate Innovation in North Texas's Thriving Semiconductor Sector**

- The U.S. Patent and Trademark Office (USPTO) has unveiled the Semiconductor Technology Pilot Program, aimed at expediting examination of patent applications for semiconductor manufacturing innovations. This initiative, aligned with the Chips for America Program, seeks to foster innovation, protect national security, and enhance global economic competitiveness. With a significant impact on North Texas, a hub for semiconductor development, the program's announcement follows recent achievements such as the Texoma Semiconductor 'Fablet' Tech Hub and major semiconductor investments by companies like Texas Instruments and GlobiTech in the region.

#### **Historic Neutrality Agreement Marks Milestone for Semiconductor Industry as IUE-CWA and Akash Systems Pave the Way for High-Quality Jobs**

- In a ground-breaking move for the semiconductor manufacturing sector, IUE-CWA, along with the Alameda County Building and Construction Trades Council, Jobs to Move America, and chip-maker Akash Systems, has announced comprehensive labour agreements covering both construction and production workers. The highlight is a pioneering labour neutrality agreement for semiconductor production workers at Akash Systems' new \$432 million factory in West Oakland, Calif. The agreement, a first-of-its-kind in the industry, enables production workers to freely form a union without interference, setting a powerful precedent for elevating job standards nationwide in the semiconductor field.



## General Market Insight

### Semiconductor Industry News

#### **Beijing Expresses Discontent Over EU Probe Into Chinese EV Subsidies**

- China's commerce ministry has expressed dissatisfaction with the European Union's investigation into Chinese electric vehicle subsidies, citing a lack of evidence and non-conformity with World Trade Organization rules, as the EU formally launches an inquiry to potentially impose tariffs on Chinese EV imports benefiting from state subsidies.

#### **Taiwan Considers Stricter Regulations on Key Tech, Investigates Firms Over Huawei Links**

- Taiwan is exploring the implementation of stricter rules on crucial technologies like computer chips, while also investigating four companies accused of conducting business with Huawei-linked firms in China, potentially imposing fines of up to T\$25 million (\$775,300) if their activities do not align with initial government approvals.

#### **Japan Unveils \$13 Billion Investment Plan to Boost Semiconductor and AI Domains**

- In a strategic move to enhance its technological prowess, Japan announces a 2 trillion yen (\$13 billion) investment initiative focused on semiconductor production and generative AI technology. The substantial funding includes support for TSMC's new chip fabrication plant in Kumamoto prefecture and emphasizes Japan's commitment to addressing supply chain disruptions and geopolitical challenges. As part of a larger \$100 billion stimulus package, this initiative aims to not only secure Japan's tech future but also play a pivotal role in the global semiconductor market.

#### **Chinese Scientists Unveil Game-Changing Memristor Chip for Enhanced AI and Smart Devices**

- Chinese researchers have introduced the world's first fully system-integrated memristor chip, a breakthrough that could significantly enhance artificial intelligence (AI) and smart devices. The chip's unique memory-resistor capabilities enable on-chip learning, potentially making AI 75 times more energy-efficient, leading to more human-like AI capabilities. This advancement offers significant implications for smart devices and autonomous driving. While challenges in scaling up the technology remain, it represents a major stride towards energy-efficient, high-capability chips for the future.

#### **Vietnam Pursues Chip Industry Investment Amid Cost Concerns**

- Vietnam is in talks with several chip companies to boost investment and potentially establish its first chipmaking plant, despite concerns about high costs raised by U.S. industry officials. The country aims to attract semiconductor investment and held discussions with U.S. chip firms, including GlobalFoundries and Taiwan's PSMC, focusing on less advanced chips for automotive or telecom applications. While Vietnam is eager to develop its semiconductor industry, some industry experts caution against excessive subsidies and suggest focusing on areas where the country already has strengths, like chip assembly, packaging, and testing.

#### **Dutch Semiconductor Firms Invest in Vietnam Amid China Tensions**

- Dutch semiconductor companies and suppliers are exploring manufacturing investments in Vietnam as part of a strategy to reduce reliance on China due to increasing trade tensions. BE Semiconductor Industries (Besi) has received approval for an initial \$5 million investment to rent a factory in Vietnam, with plans to establish its own factory in the country within the next four years, signalling a growing shift to create a semiconductor ecosystem in Vietnam.

#### **Japan Advances in Semiconductor Industry with Three Potential Hubs: Kyushu, Tohoku, and Hokkaido**

- Japan is making strategic moves to re-establish itself in the semiconductor industry, aiming to recover decades of lost ground. With three potential semiconductor hubs emerging in Kyushu, Tohoku, and Hokkaido, Japan is harnessing its geographical advantages and fostering collaborations between the public and private sectors. These regions are attracting semiconductor-related enterprises and research, positioning Japan to regain its prominence in advanced semiconductor manufacturing.

#### **Japanese Government Commits \$13.4 Billion to Revive Semiconductor Industry Despite Past Setbacks**

- Japan's government is allocating substantial financial support, with about 2 trillion yen (\$13.4 billion) from the supplementary budget, to boost the semiconductor industry. The funding includes up to 677.3 billion yen for the startup Rapidus Corp., part of a total government commitment of about 1 trillion yen. Despite past failures in the industry, the move reflects Japan's determination to enhance semiconductor capabilities and global competitiveness, aligning with global trends of reducing reliance on China for semiconductor production.





## General Market Insight

### Semiconductor Industry News

#### **Chinese Companies Acquire US Chipmaking Equipment Despite Export Curbs**

- A new report from the U.S.-China Economic and Security Review Commission highlights that Chinese companies continue to purchase U.S. chipmaking equipment for advanced semiconductor production, despite recent export restrictions implemented by the Biden administration. The export curbs, aimed at restricting China's progress in semiconductor technology, face challenges in enforcement due to claims of equipment usage on older production lines. The report emphasizes the need for an annual evaluation of the effectiveness of export controls on chipmaking equipment to address gaps and ensure a more robust regulatory framework.

#### **US-China Tech Rivalry Expands to Semiconductor Packaging in the Quest for Global Supremacy**

- President Biden is intensifying efforts to curb China's technological progress by focusing on semiconductor packaging, an area critical for achieving higher performance. Both the US and China recognize the strategic importance of advanced packaging, which allows for enhanced chip processing speed and integration of various chip types. As Washington plans a \$3 billion National Advanced Packaging Manufacturing Program, the global competition for semiconductor innovation expands, with advanced packaging emerging as a new battleground in the race for technological dominance.

#### **Semiconductor Recovery Boosts South Korea's Manufacturing Confidence**

- South Korea's manufacturing confidence has seen a notable uptick, breaking a four-month decline, with the professional survey index (PSI) reaching 100 for the upcoming month, up from 97 in the current month. This positive shift is attributed to the robust recovery in global demand for semiconductors. Specifically, the semiconductor industry's PSI reflects strong optimism, rising from 153 to 163, as South Korea's exports, driven by increased chip sales in the global market, experienced a 2.2 percent year-on-year growth in the first 20 days of November.

### CHIPS ACT

#### **Selection Committee Announces Leadership for CHIPS for America National Semiconductor Technology Centre**

- An independent selection committee has revealed the board of trustees who will oversee the National Semiconductor Technology Centre (NSTC), a vital part of the Department of Commerce's CHIPS for America initiative. The NSTC will serve as a collaborative hub for the semiconductor industry, aiming to accelerate innovation and reduce the time and cost involved in bringing new technologies to market. The selected trustees will establish a non-profit entity to operate the NSTC, and their expertise is expected to drive advancements in semiconductor research and development, supporting national security and economic interests. The CHIPS and Science Act established this initiative to strengthen the semiconductor industry in the United States.

#### **US CHIPS Act Raises Concerns of Global Semiconductor Industry Shift and Trade Tensions**

- The US CHIPS Act, enacted in 2022, aims to revitalize the domestic semiconductor industry by offering substantial incentives, potentially reshaping global market dynamics. The Act's impact is evident in the surge of new semiconductor projects in the US, challenging Asia's semiconductor dominance. As the US and other regions introduce similar subsidy programs, concerns arise over a potential glut of semiconductors, falling prices, and the repercussions of restrictions on Chinese involvement in supply chains. Ongoing international consultations, including the Indo-Pacific Economic Framework's Supply Chain Council, may play a crucial role in mitigating negative effects and fostering collaboration in the evolving semiconductor landscape.



## General Market Insight

### Semiconductor Industry News

#### SUSTAINABILITY

#### **Breakthrough Superatomic Semiconductor Paves the Way for Blazing-Fast Computer Chips**

- Researchers at Columbia University have discovered a ground-breaking super atomic semiconductor,  $\text{Re}_6\text{Se}_8\text{Cl}_2$ , which enables particles called excitons to travel in straight lines at speeds 100 to 1000 times faster than electrons in silicon chips. This breakthrough could lead to the development of computer chips that are hundreds or thousands of times faster than current technology, offering the potential for significant advancements in computing performance and efficiency.

#### **Semiconductor Industry's Carbon Challenge and Path to a Sustainable Future**

- A comprehensive study by the Semiconductor Climate Consortium (SCC), in partnership with Boston Consulting Group (BCG) and SEMI, underscores the semiconductor sector's growing carbon footprint and its imperative alignment with the 1.5°C climate target. As the industry grapples with its emissions, the report emphasizes the need for substantial R&D investment, collaborative efforts, and transitioning to low-carbon energy sources to secure a sustainable, low-carbon future while meeting the surging demand for advanced semiconductors.

#### **Sydney Nano's Breakthrough Photonic Chip: Revolutionizing Semiconductor Technology for Advanced Applications**

- In a ground-breaking achievement, researchers at the University of Sydney Nano Institute have developed a compact silicon semiconductor chip that seamlessly integrates traditional electronics with photonic components, expanding radio-frequency bandwidth and offering precise control over information flow. The innovative architecture, resembling a Lego-like assembly of diverse materials through advanced packaging, opens avenues for applications in advanced radar, satellite systems, wireless networks, and the evolving landscape of 6G and 7G telecommunications. This pioneering technology not only propels advancements in microwave photonics but also positions Australia to establish its sovereign chip manufacturing capabilities, reducing dependence on international foundries for critical semiconductor processes.

#### **New MAPT Roadmap Highlights Critical Semiconductor Research Priorities**

- The Semiconductor Research Corporation (SRC) has introduced the Microelectronics and Advanced Packaging (MAPT) Roadmap, highlighting crucial research priorities for advancing semiconductor technology. This roadmap builds on the Decadal Plan for Semiconductors and addresses the five seismic shifts in the industry, emphasizing key areas like advanced packaging, 3D integration, electronic design, nanoscale manufacturing, new materials, and energy-efficient computing. To drive transformative innovations, it underscores the importance of sustained public and private investments in semiconductor research, crucial for both the industry and the broader economy.

#### **Revolutionizing Semiconductor Production: Harnessing Microgravity in Low Earth Orbit for Terrestrial Advancements**

- A collaborative white paper by semiconductor and space manufacturing experts explores the advantages of utilizing microgravity in Low Earth Orbit (LEO) for semiconductor production. The study highlights how Earth's gravitational forces create challenges for efficient semiconductor manufacturing and suggests that the transition to in-space production could overcome these barriers, offering practical benefits to the supply chain. The paper advocates for leveraging LEO-based manufacturing to fulfil NASA's In Space Production Applications' (InSPA) objectives, aiming to enhance technological leadership, national security, job creation, and economic development in LEO.



## General Market Insight

### Passive Commodities

#### Ceramic Capacitors

- **Supply** - Manufacturers experience a slight increase in utilization rates to around 60%, driven by product mix shifts; AI application orders rise, but automotive backlogs decline with varying capacities; commercial-grade MLCCs are abundant, while specialized automotive MLCCs face supply chain challenges; suppliers maintain low inventory due to uncertain OEM/customer expectations, leading to gradual declines in distribution-stage inventory levels, and overall lead times stabilize.
- **Market Dynamics** - Suppliers, aligning with the China+1 strategy, are expanding production capacity in various countries, emphasizing high-voltage and reliable products; the electric vehicle market maintains robust growth, with OEMs adjusting inventory levels; upcoming smartphone launches do not seem to disrupt supplier supply chains; intentional alignment of technical requirements and supplier selection is crucial for a sustainable and reliable supply chain amid diverse strategies pursued by suppliers.
- **Price** - Prices are increasing, particularly for niche products containing palladium; manufacturers adopt competitive pricing strategies to maintain factory utilization and strive for market share through high-volume sales.

#### Tantalum Capacitors

- **Supply** - Tantalum MnO<sub>2</sub> experiences a significant demand decline across all case sizes, with 50-60% average capacity utilization, weak demand for large case sizes in industrial, automotive, and renewable energy sectors, reduced lead times at 14-16 weeks; 12-week lead times for small case sizes with suppliers ready to shorten or meet increased demand within 8 weeks; Tantalum polymer products show reduced lead times from 26 to 12-16 weeks, and healthier Commodity BB ratios at 0.6:1 for MnO<sub>2</sub> and 0.7:1 for polymers, prompting suppliers to enhance flexibility to support rising demand.
- **Market Dynamics** - Legacy MnO<sub>2</sub> capacitors face no further investment due to market demand and technological advances, with manufacturers shifting resources to expand tantalum polymer capacitor production, responding to increased market demand for its superior performance; AVX, Vishay, and Kemet take strategic steps to meet demand, including building new facilities and expanding production for tantalum polymer capacitors.
- **Price** - Tantalum MnO<sub>2</sub> cost challenges persist amid a shift away from the product, compounded by high raw material costs, while stable prices are anticipated through 2023; legacy products like wet tantalum and military series are expected to see price increases due to production scale limitations, resulting in higher production costs.

#### Magnetics

- **Supply** - Suppliers experience decreasing finished goods inventories amid low customer demand, with an average capacity utilization rate around 70%; increased production capacity and improved lead times for raw material supply contribute to inventory decline; while some suppliers still face shortages of specialty automotive parts, the overall number is decreasing; lead times for multilayer chip inductors have consistently improved and are now estimated at 8 to 12 weeks, although TDK's MLF/MLZ1005/1608/2012 series has seen a significant reduction to 32 weeks. Lead time for common mode chokes is 10-14 weeks
- **Market Dynamics** - Pulse Electronics is actively integrating its brands, including Chilisin, Mag Layers, Magic, and Bothand; there is a noticeable production capacity expansion trend in Southeast Asian countries such as Vietnam, Thailand, Malaysia, and the Philippines, driven by ongoing trade tensions between the US and China; sustained cost increases in southern China lead to significant growth in start-ups and expansion of existing facilities in western and central China, attributed to rising personnel and equipment costs.
- **Price** - Stable prices amid the market downturn, as suppliers address reduced demand and logistical issues by focusing on depleting high inventory levels at original cost for custom inductors and transformers.





## General Market Insight

### Circuit Protection

- **Supply** - Improved supply for circuit protection devices; automotive market demand slows but remains on a growth trend, with renewable energy and AI-related applications driving growth; BB ratio is less than 1, and factories operate at 60-80% capacity; fuse lead times average 8-18 weeks, varistor lead time is 12-18 weeks, GDT lead times improved to 18-22 weeks, and circuit breaker supply significantly improved with lead times ranging from 8 to 20 weeks.
- **Market Dynamics** - Main manufacturers pursue China+1 strategy, expanding to Mexico, Malaysia, and other regions; Littelfuse, a global leader in circuit protection devices, extends into the power control and sensing market through acquisitions, including C&K, RCD Technology, and Carling Technologies; Bourns, specializing in overvoltage protection components, acquires Keko-Varicon.
- **Price** - Main manufacturers pursue China+1 strategy, expanding to Mexico, Malaysia, and other regions; Littelfuse, a global leader in circuit protection devices, extends into the power control and sensing market through acquisitions, including C&K, RCD Technology, and Carling Technologies; Bourns, specializing in overvoltage protection components, acquires Keko-Varicon.

### Resistors

- **Supply** - Automotive-grade parts face ongoing capacity constraints, supply allocation, and extended lead times through 2023, with Vishay, Panasonic, and Susumu estimating a BB ratio near 1.0 for thin film resistors; KOA thin film resistors are currently on allocation, while thick film resistors face a 15-week lead time, and Vishay's supply improvements aid current sense, MELF, and leaded resistors; general-purpose grade resistors experience declining supply due to reduced consumer and mobile phone markets, leading to improved BB ratios below 1.0 but increasing inventory pressures; inventory disposal is expected to slow in the second half of 2023, returning to normal market conditions in the first half of 2024.
- **Market Dynamics** - Accelerating technological transformation in the power market; Vishay faces increasing competition in resistors; Japanese suppliers neglect less profitable mature products, impacting overall demand fulfillment; Taiwanese resistor manufacturers gain automotive AML approvals due to growing supply shortages from traditional automotive resistor manufacturers; demand for small resistors rises with consumer demand for compact electronic devices, driving major investments and expansion plans by 2030; large-scale investments focus on the automotive/electric vehicle and industrial equipment markets; manufacturers invest in Mexico, Germany, Malaysia, and Japan as part of the China+1 strategy.
- **Price** - Automotive-grade part prices are flat to rising, while general-purpose part prices are increasing, and commodity thick film prices remain stable with cost-cutting strategies; distributor inventory dumping persists, contributing to a downward price trend for general-purpose grade resistors.

## Semiconductor Parts

### Analog Power/Signal Chain

- **Supply** - Global markets face volatility with weak demand, suppliers exhibit capacity utilization rates below 80% and BB ratios below 1.0, except for specific automotive components; lead times significantly reduced; OEM/EMS and distribution channels conduct inventory rectification, while suppliers actively seek market share; expectations for continued growth in the automotive and industrial equipment sectors in 2024 with a projected slowdown in the growth rate.
- **Market Dynamics** - Suppliers diversify supply chains to Malaysia, Vietnam, India, and the Philippines amid the pandemic and geopolitical conflicts, driven by customer evaluations of sources outside China; global growth in the power semiconductor market is propelled by increased demand for automotive electrical components, industrial automation, new consumer electronics, and renewable energy.
- **Prices** - Suppliers diversify supply chains to Malaysia, Vietnam, India, and the Philippines amid the pandemic and geopolitical conflicts, driven by customer evaluations of sources outside China; global growth in the power semiconductor market is propelled by increased demand for automotive electrical components, industrial automation, new consumer electronics, and renewable energy.



## General Market Insight

### Standard Logic

- **Supply** - Semiconductor demand softens in consumer markets, leading to a healthier supply structure with revised lead times of 6-12 weeks for general-purpose logic; automotive and application-specific semiconductors maintain stability in delivery times and prices; logic suppliers report stabilized lead times based on inventory availability; most suppliers have capacity utilization below 80% and BB ratios below 1.0; foundry utilization rates decline through 2023; Texas Instruments improves lead times, while Nexperia plans new production capacity; Onsemi shifts logic portfolio manufacturing to Vanguard Semiconductor; Onsemi focuses on industrial and automotive growth, contributing 80% of sales.
- **Market Dynamics** - automotive sector's contribution to growth expected to rise in 2023 and continue double-digit growth in the next three years; strong demand in automobiles, industrial equipment, and medical equipment mitigates semiconductor oversupply concerns; Chinese logic suppliers SG Micro and Wuxi ICORE enter the logic supply system with competitive prices.
- **Price** - Consumer materials experience declining orders, demand, and prices, while automotive and industrial equipment materials maintain stability; suppliers adjust prices to gain market share amid softening demand; Texas Instruments and Nexperia focus on pricing to increase market share; Onsemi expected to maintain flat prices with solid supply and demand for logic; Microchip implements price increases, impacting Emitter Coupled Logic (ECL); caution needed in monitoring potential issues with production cuts when demand recovers in certain end markets.

### Discrete

- **Supply** - Auto market experiences changes; allocation of automotive discrete components improves with slightly reduced lead times; suppliers focus on SiC MOSFET technology for expected EV market demand; lead times by technology vary; Infineon forecasts growth in SiC, GaN, and Si discrete products; Onsemi implements price increases; semiconductor oversupply not expected due to strong demand in certain sectors; Chinese logic suppliers SG Micro and Wuxi ICORE offer competitive prices.
- **Market dynamics** - Chinese economic slowdown linked to liquidity crisis of major real estate developers, worsened by a 14.7% YoY drop in exports; potential deflationary impact unlikely to persist with core inflation continuing; SiC companies, including Wolfspeed, Infineon, STM, Onsemi, and ROHM, focus on rapidly expanding SiC production capacity; SiC usage expected to increase in electric vehicles, renewable energy, power grid upgrades, and industrial equipment; geopolitical tensions drive suppliers to adopt China+1 strategy, establishing post-processing facilities in Southeast Asia.
- **Price** - Non-automotive component prices show a slight downward trend as suppliers become more negotiable in a softening market, while in the automotive sector, constrained production capacity keeps MOSFET and die ord prices flat.

### Optoelectronics

- **Supply** - Optocouplers, infrared devices, and optical sensors are widely available from most manufacturers; Japanese manufacturers like Toshiba and Panasonic face restrictions on certain SSR products; Panasonic automotive SSR products are currently allocated due to high demand; Tier 1 manufacturers experience declining lead times in the face of market softening; Onsemi's lead times decrease but remain in a non-cancellable, non-refundable status; most manufacturers stick to cancellation policies amid customer deferrals; overall capacity utilization is below 80% with a 30% business decline; LED manufacturers like Visual Communications Company, Panasonic, Nichia, Dialight, Vishay, and KingBright phase out legacy products; LED suppliers explore new business in growth markets, while consumer market demand remains stable, and procrastination behaviour increases with reduced lead times.
- **Market dynamics** - Tier 1 brand suppliers concentrate on automotive and electric vehicle markets with new products expected; Asian-based suppliers seek new business opportunities for a competitive edge; potential challenges for small and medium-sized, non-automotive suppliers if the economy doesn't improve; OEMs exploring sources outside China, but market slowdown hinders real action.
- **Price** - Prices remain stable across all product types in Q4 2023 as suppliers aim to maintain market share amid rising material costs



## General Market Insight

### Volatile Memory: DRAM

- **Supply** – DDR4: Some restrictions apply; DDR3: There are some production options, with slight limitations; Legacy (SDRAM, DDR1,2): Stable (expecting support from Tier 2 suppliers)
- **Price** – Decrease in pricing.

### Volatile Memory: SRAM

- **Supply** – Asynchronous and Synchronous: Stable
- **Price** – Asynchronous and Synchronous: Stable

### Non-Volatile Memory: NAND Flash

- **Supply** – Planar NAND and 3D NAND Flash: Some Constraints
- **Price** – Planar NAND and 3D NAND Flash: Flat / Decrease

### Non-Volatile Memory: EEPROM

- Supply and Pricing for EEPROM are stable.

### Solid State Drives

- Supply for this commodity is stable to few constraints while the price is decreasing for the 2<sup>nd</sup> half of 2023.

### Sensors

- **Supply** - Lead times are under 30 weeks in some categories, with slow market activity except in the automotive and healthcare sectors; demand has not grown as expected into the final quarter of 2023, particularly for mature technology products; Tier 1 suppliers seek new projects to secure demand for 2024, and sensing product demand is expected to remain flat until the first half of 2024; sensor manufacturers, not relying on facilities in China, expect US regulations restricting China as a sourcing source to have minimal impact on supply and encourage diversification.
- **Price** - Stable

## Interconnect Commodities

### Connectors

- **Supply** - Suppliers' factories operate at 70-80% capacity utilization, BB ratio remains below 1.0 for major suppliers, stable connector lead times with no signs of supply constraints; weak demand in telecommunications and consumer sectors offset by increased demand in automotive, transportation, and industrial equipment; overall market softening leads to an increase in order cancellations due to excess inventory, prompting suppliers to reduce inventory levels and anticipate continued rebalancing until the end of 2023.
- **Price** - Pricing remains generally flat.

### Relay

- **Supply** - Supplier factory utilization rates generally at 60%, tight allocation conditions persist for electric vehicle and renewable energy-related relays, BB ratio is less than 1 overall, lead times remain flat but end customer demands are shortening, TE has items under allocation with reluctance to increase production capacity, and market demand for relays is expected to grow in electric vehicle and renewable energy businesses while weak in home appliances, measuring equipment, and capital equipment.
- **Price** - The overall price of relays has been flat to rising.

### Switch

- **Supply** - Lead times remain flat overall, but there are no constraints on production capacity or raw materials
- **Prices** - Overall prices remain flat.



## General Market Insight

### Battery

- **Supply** - Lead times remain stable with estimates ranging from 8 to 18 weeks on average, with no signs of supply constraints.
- **Price** - Lithium carbonate prices decrease due to weak demand from major battery manufacturers; major suppliers like Panasonic, Tadiran, and GP Battery maintain stable prices; suppliers reconsider pricing strategies with increased production capacity; Varta and Renata legacy batteries experience price increases.

### High-end Semiconductors

#### MCU/MCP/Chipset/ASIC/Prog Logic

- Stable prices anticipated in Q4 2023; potential revisions for 2024; Taiwan Semiconductor Manufacturing hints at lower wafer costs for new generation technologies and higher costs for older ones; suppliers prioritize legacy devices amidst rising prices and accelerated end-of-life production.

REBOUND ELECTRONICS

Liaise with your account manager for more information.

### We are Rebound:

- PPV
- Component Sourcing
- Data Driven BOM Analytics
- Nuvonix
- Obsolescence Management
- Reverse Logistics
- Shortage Management





## Analog Devices

- Evonetix announces a joint development agreement and commercial supply agreement with Analog Devices, Inc. (ADI) to advance their semiconductor-based gene synthesis platform, aiming to revolutionize current gene synthesis approaches and accelerate the design-build-test cycle for biologic therapies, potentially increasing gene delivery productivity by up to 10-fold.
- Analog Devices (ADI) is set to debut at Industrial Transformation ASIA-PACIFIC 2023, showcasing innovative solutions for sustainable practices, including energy and industry automation solutions, with key highlights like the OtoSense Smart Motor Sensor and Trinamic motor control products, while also serving as the Platinum Sponsor for the event.
- Analog Devices, Inc. faces short-and long-term concerns despite an exceptional growth track record, with declining markets and a planned cut in investment, reflected in rising inventories and a dip in accounts receivable, raising worries about accelerated share buybacks at high valuations and potential value destruction at the end of a successful growth cycle.

## Broadcom

- Broadcom Inc., a major chip supplier for Apple and other tech giants, anticipates AI computing expansion to offset its recent slowdown, with networking semiconductors supporting AI systems expected to constitute over 25% of total chip sales in fiscal 2024; while the company's overall sales growth is slowing, CEO Hock Tan is optimistic about the AI sector's potential and the growth in computer network spending to support AI services.
- Semiconductor giant Broadcom, after its \$69 billion acquisition of VMware, is relocating its San Jose headquarters to the 1.6 million-square-foot campus in Palo Alto acquired in the deal, with CEO Hock Tan emphasizing a return-to-office policy for employees, citing that "remote work does not exist at Broadcom," and plans to consolidate former VMware employees into its operations while issuing WARN notifications for impending layoffs in multiple states.

## Infineon

- Infineon reports better-than-expected 2023 revenue of €16.31 billion (\$17.72 billion), up 15% from the previous year, driven by strong demand for semiconductors in the electromobility and renewable energy sectors, with CEO Jochen Hanebeck highlighting unabated growth in these areas, while forecasting slightly slower revenue growth of €17 billion for the 2024 fiscal year.
- Infineon has officially closed its acquisition of GaN Systems for \$830 million, consolidating its power components position in high-growth markets such as automotive, motor control, and green industrial power; Infineon's focus on energy efficiency is expected to benefit from GaN Systems' E-HEMT technology, which allows for higher switching speeds and higher power densities.
- Hyundai and Kia have entered a strategic collaboration with Infineon Technologies to advance the power performance of their upcoming electric and hybrid models, aiming to procure a portion of power semiconductors from Infineon by 2030, as the companies plan to increase their annual electric car production from 600,000 to 3.6 million units by 2030.

## Intel

- At the IEEE International Electron Devices Meeting 2023, Intel showcased significant breakthroughs in transistor scaling, presenting advancements in 3D stacked CMOS transistors with backside power and direct backside contacts, incorporating gallium nitride (GaN) transistors on a single wafer, and demonstrating prototypes of high-mobility transition metal dichalcogenide transistors, all contributing to the ongoing evolution of Moore's Law and high-performance computing demand.
- Intel accused AMD of "selling half-truths to unsuspecting customers" in a now-deleted presentation, focusing on the confusing naming of AMD's Ryzen 7000 series mobile processors, particularly the Ryzen 5 7520U based on the older Zen 2 architecture, and likening AMD's naming scheme to selling "snake oil." Intel's attack comes amid its own history of confusing processor naming schemes and architectures and follows its recent launch of 14th Gen desktop processors that critics argue lack significant architecture changes from the 13th Gen.
- Intel and Siemens have entered a memorandum of understanding (MoU) to collaborate on enhancing the digitalization and sustainability of microelectronics manufacturing, focusing on areas like energy management optimization, carbon footprint reduction, and utilizing "digital twins" for complex manufacturing facilities.





## Kyocera

- Kyocera, in collaboration with UScellular, has launched the rugged DuraSport 5G smartphone, providing durability with a sleek form factor. The MIL-STD-810H certified Android 13 phone is being offered free of charge to both new and existing UScellular customers during the holiday season.

## Lattice

- Lattice Semiconductor has introduced a new reference sensor-bridging design at the Lattice Developers Conference, aiming to accelerate the development of edge AI applications using NVIDIA Jetson Orin and IGX Orin platforms.
- Lattice Semiconductor has announced that its Board of Directors has authorized the company to repurchase up to an additional \$250 million of its outstanding common stock through the end of December 2024. The company executed its thirteenth consecutive quarter of share buybacks in Q4 2023, repurchasing \$50 million or approximately 900,000 shares. The latest share repurchase program expansion reflects the financial strength of Lattice Semiconductor's business, confidence in its long-term financial model, and a continued commitment to delivering shareholder value.

## Micron

- US chipmaker Micron's semiconductor unit in Gujarat is on track for completion within 12 months after the Union Cabinet greenlit the project in June, securing a capital investment of INR 22,516 crore with 50% fiscal support from the government. The ATMP facility, specializing in memory and storage products, aims to create up to 5,000 direct jobs and an additional 15,000 indirect jobs, while attracting interest from over 30 ancillary industries. The project is expected to significantly impact global semiconductor manufacturing.
- Micron Technology has initiated the construction of its \$2.75 billion assembly, testing, and packaging plant (ATMP) in Sanand, Gujarat, marking the largest investment under the India Semiconductor Mission.

## Molex

- Molex has expanded its manufacturing footprint by opening a new campus in Katowice, Poland, with an initial 23,000 square meters of manufacturing space that will serve as a strategic central location for delivering advanced medical devices for Phillips - Medisize and electric vehicle solutions for Molex customers.

## Murata

- HaiLa Technologies, a Canadian fabless semiconductor and software company specializing in power-efficient radio communications solutions, has raised \$10.35 million in funding from new strategic investor Murata Electronics, as well as existing investors, including Stanford University, Mika, Ecofuel Fund, Chrysalix, and TandemLaunch. The funds will be used for R&D development, team expansion, and to bring HaiLa's ultra-low-power system-on-chip (SoC) solutions to market, with the aim of providing breakthrough power-efficient communication solutions for ambient IoT and reducing wireless sensor battery waste.

## Murata

- The Dutch government has announced that it won't block the Chinese-owned Nexperia's acquisition of Dutch chip startup Nowi after an assessment, stating that there are no legal objections to the deal.
- Vishay Intertechnology has acquired the Newport Wafer Fab from Nexperia for \$177 million in cash, following the UK government's blocking of Nexperia's sale; Newport Wafer Fab is the largest semiconductor manufacturing site in the UK, primarily supplying automotive markets.
- Mitsubishi Electric has partnered with Nexperia to jointly develop silicon carbide (SiC) power semiconductors, with Mitsubishi Electric providing Nexperia with SiC MOSFET chips for use in developing SiC discrete devices, as the electric vehicle market drives growth in SiC power semiconductors with lower energy loss and faster switching speeds than conventional silicon power semiconductors.



## NXP

- NXP Semiconductors' shares rose in after-hours trading after the company reported third-quarter results and provided guidance for the fourth quarter that exceeded expectations, with adjusted earnings forecast between \$2.71 and \$3.13 per share and sales expected to be between \$3.3 billion and \$3.55 billion.

## Onsemi

- Onsemi (ON) shares plunged over 18% after the chipmaker provided guidance for the current quarter that fell below expectations, citing "pockets of softness" in sales and expressing concerns about risks from higher interest rates. The company reported third-quarter earnings per share (EPS) of \$1.39, down from \$1.45 a year ago, and revenue declined 0.5% to \$2.18 billion. The guidance for the current quarter is for EPS of \$1.13 to \$1.27 and revenue in the range of \$1.95 billion to \$2.05 billion, below analysts' expectations.
- The company has completed a silicon carbide (SiC) wafer manufacturing facility, named S5 Line, near Seoul, South Korea, with a capacity of over 1 million 200mm SiC wafers per year when fully operational, catering to the demand for SiC-based semiconductors used in electric vehicles and high-powered EV chargers. The facility is part of onsemi's \$1.04 billion project to expand its power semiconductor manufacturing facilities in Bucheon, and is expected to create up to 1,000 new jobs in the next three years.

## Panasonic

- Tesla shares dropped nearly 5% following Panasonic's announcement of reduced battery cell production, raising concerns about sluggish electric vehicle (EV) demand, particularly for higher-priced models like Tesla's older Model X SUVs and Model S sedans, which use Panasonic cells. CEO Elon Musk had earlier highlighted challenges with the Cybertruck and warned about the impact of higher interest rates on EV affordability during Tesla's Q3 earnings call on October 18, contributing to an over 18% decline in Tesla shares since that call.
- Panasonic showcased its vision of coexistence between humans and robots at the 25th International Robot Exhibition (iREX) in Tokyo. The booth's theme was "Augment Possibility with Robots," featuring about 10 robots and technologies covering healthcare, logistics, and communications. Highlights included a unique robotic gripper for delicately handling objects, and the HOSPI Trail autonomous delivery robot for hospitals. Panasonic aims to enrich people's lives by using robotics to address various challenges and enhance human potential. The gripper's light touch and versatile capabilities make it suitable for tasks like piece picking in logistics, while HOSPI Trail helps alleviate staffing shortages in hospitals.
- Panasonic Energy has announced a partnership with Sila for the procurement of next-generation silicon anode material for electric vehicle (EV) batteries.
- Panasonic has commenced operations at its new R&D building in Malaysia, equipped with advanced facilities, including its first multi-purpose laboratory, to expedite the development of air conditioning equipment for the global market, primarily in ASEAN and Europe, and cater to local needs.

## Panasonic

- Japanese chip start up Rapidus, a consortium backed by major firms including Toyota, Sony, and NTT, faces challenges including labour shortages, housing, and noise concerns as it aims to revive Japan's semiconductor industry by achieving mass production of 2nm logic chips by 2027.

## Samsung

- Samsung's semiconductor business reported losses of 4.58 trillion won and 4.36 trillion in the first and second quarters, respectively, facing challenges due to oversupply and reduced demand for devices; however, Q3 is expected to show a better-than-expected 3 trillion won loss, indicating potential for recovery.
- Samsung and SK Hynix have received indefinite waivers to ship U.S. semiconductor manufacturing equipment to their China factories without separate U.S. approvals, resolving a significant trade issue for the South Korean semiconductor companies.
- Samsung's "Micro Miracles" is a ground-breaking 60-second film that utilizes state-of-the-art 3D nanoprinting and nanoflight® technology to showcase the diverse applications of semiconductors through microscopic models of everyday and extraordinary technologies, such as a woman conducting a video call in the palm of her hand and launching rockets into space.



## Samsung

- Samsung is intensifying its research and development efforts in the 2-nanometer fabrication space, aiming to challenge TSMC's dominance in the semiconductor foundry market by emphasizing cutting-edge technology; some speculate Samsung might bypass extensive 3-nanometer production and leap into 2-nanometer fabrication directly.
- Samsung is set to expand its semiconductor chip factory in Taylor, Texas, with the addition of a new building, "Samsung Fabrication Plant 2," as part of its broader plan to boost chip production capacity.

## Siemens

- Intel and Siemens have entered a memorandum of understanding (MoU) to collaborate on enhancing the digitalization and sustainability of microelectronics manufacturing, focusing on areas like energy management optimization, carbon footprint reduction, and utilizing "digital twins" for complex manufacturing facilities.
- Siemens plans to invest more than \$500 million in U.S. manufacturing for critical infrastructure in 2023, with a new \$150 million investment in a high-tech manufacturing plant in Dallas-Fort Worth to support American data centres and accelerate the adoption of artificial intelligence (AI), creating around 1,700 jobs in total.
- Mouser Electronics has entered into a distribution agreement with Siemens, a global leader in industrial automation, expanding its product offerings to include Siemens' industrial automation solutions such as networking devices, human-machine interface (HMI) solutions, circuit protection, and power supplies.

## ST Microelectronics

- STMicroelectronics, a global automotive semiconductor leader, emphasizes its commitment to sustainability and carbon neutrality, anticipating it will be a key factor for customers in selecting suppliers for their supply chain, giving ST an advantage in the industry.
- STMicroelectronics has been ordered by a jury in West Texas to pay Purdue University \$32.5 million in damages for infringing a patent related to transistor technology, with the jury finding that ST's silicon carbide metal oxide semiconductor field effect transistors (MOSFETs) used in electric-vehicle chargers and other products violated Purdue's patent rights.

## Toshiba

- Toshiba and Rohm have announced plans to collaborate on the power semiconductor business and invest a combined 388.3 billion yen (\$3.37 billion) to expand production, with the Japanese Ministry of Economy, Trade, and Industry providing subsidies of up to 129.4 billion yen.
- Toshiba has launched the "TLP3475W," a photorelay in a small, thin WSON4 package designed for high-frequency signal switches in semiconductor testers, reducing insertion loss and suppressing power attenuation in high-frequency signals.

## Texas Instruments

- Texas Instruments (TI) has broken ground on its new 300-mm semiconductor wafer fabrication plant (fab) in Lehi, Utah, LFAB2, marking the largest economic investment in Utah's history at \$11 billion.
- The company reported a 14% YoY decline in third-quarter revenue to \$4.5 billion, with the Analog segment down 16%, while Embedded Processing grew 8%, and the "Other" segment fell 32%. Despite ongoing macroeconomic challenges, TI plans to maintain its capex budget at around \$5 billion per year for the next three years to support manufacturing expansion efforts, which are expected to provide geopolitically dependable capacity and facilitate growth in semiconductor content.

## Vishay

- Vishay Intertechnology has acquired the Newport Wafer Fab from Nexperia for \$177 million in cash, following the UK government's blocking of Nexperia's sale; Newport Wafer Fab is the largest semiconductor manufacturing site in the UK, primarily supplying automotive markets.
- Vishay has released the R3T2FPHM3, an industry-first standard rectifier and transient voltage suppressor (TVS) two-in-one device designed for automotive applications, featuring a 3 A, 600 V standard rectifier and a 200 W TRANSZORB TVS in a compact FlatPAK 5 x 6 package.
- Vishay has acquired Newport Wafer Fab for \$177 million in cash, securing its ownership after discussions with Nexperia, owned by Chinese company Wingtech. Vishay plans to establish a SiC line to produce Trench MOSFETs and diodes at Newport Wafer Fab



ANALOG		PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Standard	Amplifiers & Comparators	↓	→	18+
	Analog Interface	↓	→	18+
	Power Management	↓	→	18+
	Converters	↓	→	18+
Standard Analog Total		↓	→	18+
Advanced		→	↓	18+

MOS MICROLOGIC		PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
MPU		→	→	18+
MCU	8 Bit & Lower	→	→	18+
	16 Bit	→	→	18+
	32 Bit & Higher	→	→	18+
MCU Total		→	→	18+
Automotive MCU		→	→	28+
DSP		→	→	28+

PROGRAMMABLE LOGIC	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
	→	↓	18+

STANDARD LOGIC	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Timing Products	→	→	28+
Interface	→	→	28+
Connectivity	→	→	28+
Standard Logic	↓	↓	12-18

POWER	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
FET	↓	↓	18+
IGBT	→	→	28+
Rectifier	→	↓	12-18
Other Power	→	↓	12-18



MEMORY		PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Flash	NOR	↑	→	18+
	NAND	→	→	12-18
eMMC		↑	↑	12-18
EEPROM		→	→	28+
DRAM		↑	↑	18+
SRAM		→	→	12-18
Solid State Drives		↑	↑	28+

SENSORS	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
	→	→	28+

OPTO	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
LEDs (Low Power)	→	→	12-18
LEDs (Mid Power)	→	→	12-18
LEDs (High Power)	→	→	18+
Couplers	→	→	18+
Fibre-Optic	→	→	18+
Infrared	→	→	18+
Other Opto	→	→	18+

DISCRETE	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Small Signal	→	→	4-10
RF	→	→	12-18

REBOUND ELECTRONICS  
Liase with your account manager for more information.



**Global  
Reach**

**Local  
Support**

41 offices in 27 countries, with dedicated purchasing hubs in Asia, Europe & the Middle East.





↔	Stable
↗	Increasing
↖	Decreasing
SMA	Selective Market Adjustment
EOL	End-of-Life

Click on a category below:

- [Analog](#)
- [High - End](#)
- [Battery](#)
- [Interconnect](#)
- [Connectivity](#)
- [Opto / Lighting](#)
- [Discrete](#)
- [Memory](#)
- [Electromechanical](#)
- [Passives](#)

## Analog

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
ams	Sensors	10-26	↔	SMA	
Bosch Sensortec	Sensors	8-14	↔	↔	
Diodes Incorporated	Multi- Source Analog/Power	22-32	↔	↔	
	Switching Regulators	22-48	↔	↔	
FTDI Chip	Interface	16-26	↖	↔	
	Sensors	20-54	↔	↗	
Infineon	Switching Regulators	22-54	↔	↔	
	Analog and Power for Automotive (CAN/LIN/Smart FET)	48-54	↔	↔	
Maxlinear	Interface	14-26	↖	↔	
Melexis	Sensors	22-44	↖	↔	
	Signal Chain (Amplifiers and Data Converters)	22-44	↔	↔	
Microchip	Timing	22-42	↔	↔	
	Switching Regulators	22-42	↔	↔	
Monolithic Power Systems	Switching Regulators	48-52	↖	↔	
NXP	Sensors	18-54	↔	↔	
	Interface	22-32	↖	↔	
	Analog and Power for Automotive (CAN/LIN/Smart FET)	26-38	↖	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
Onsemi	Sensors	20-54	↔	SMA	
	Signal Chain (Amplifiers and Data Converters)	20-54	↙	↔	
	Timing	22-44	↔	↔	
	Multi- Source Analog/Power	22-44	↔	↔	
	Switching Regulators	22-44	↔	↗	
Panasonic	Sensors	18-28	↗	↔	
Pericom Saronix-eCera	Timing	22-28	↔	↔	
Power Integrations	Switching Regulators	18-20	↔	↔	
Renesas	Signal Chain (Amplifiers and Data Converters)	26-38	↙	↔	
	Timing	52	↔	↔	
	Interface	26-38	↙	↔	
	Switching Regulators	38-42	↙	↗	
ROHM	Sensors	26-54	↗	↗	
	Switching Regulators	22-42	↔	↔	
ST Microelectronics	Sensors	14-20	↙	↔	
	Signal Chain (Amplifiers and Data Converters)	16-26	↙	↔	
	Multi- Source Analog/Power	22-44	↔	↔	
	Switching Regulators	22-42	↔	↔	
	Analog and Power for Automotive (CAN/LIN/Smart FET)	42-54	↔	↔	
TE Sensor Solutions	Sensors	18-54	↗	SMA	
vishay	Sensors	26-54	↗	↔	



# Batteries

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
Alium Batteries	Lithium Ion	22-24	↔	↔	
	Alkaline	12-14	↔	↔	
Energizer	Lithium Metal	16-18	↔	↔	
	Silver Oxide	10-12	↔	↗	
GP Batteries	Alkaline	16-18	↔	↔	
	Lithium Metal	20-22	↔	↔	
	Lithium Ion	18-20	↔	↔	
	Nickle Metal Hydride	12-14	↔	↔	
	Lead Acid	10-12	↔	↔	
	Carbon Zinc	10-12	↔	↔	
Panasonic	Alkaline	12-14	↔	↔	
	Lithium Metal	18-20	↔	↔	
	Nickle Metal Hydride	10-12	↔	↔	
	Carbon Zinc	10-12	↔	↔	
Rayovac	Alkaline	12-14	↔	↔	
	Lithium Metal	18-20	↔	↔	
	Nickle Metal Hydride	10-12	↔	↔	
	Carbon Zinc	10-12	↔	↔	
Renata Batteries	Lithium Metal	18-20	↔	↔	
	Lithium Ion	22-24	↔	↔	
	Nickle Metal Hydride	12-14	↔	↗	
	Silver Oxide	10-12	↔	↔	
	Carbon Zinc	10-12	↔	↗	



# Batteries

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
Tadiran Batteries	Lithium Metal	14-16	↔	↔	
	Alkaline	12-14	↔	↔	
VARTA	Lithium Metal	20-26	↔	↗	
	Lithium Ion	34-40	↔	↔	
	Nickle Metal Hydride	12-14	↔	↗	

REBOUND ELECTRONICS  
Liaise with your account manager for more information.

## When Quality is Key - Choose Rebound.

Maintaining the integrity of the supply chain is paramount to us. We back this up with industry-leading quality control and certification.



SC21 Silver Award



AS9120 Rev B



ISO 13485:2016

## Enhanced Inspection

In-house enhanced inspection including Creative Electron Truview prime X-Ray system with reel-to-reel capability, Abi Sentry Counterfeit IC detector as well as Keyence VHX-5000 Series microscope and RKD – Chemical Decapsulation.





## Connectivity

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
AMS	RFID	30-32	↗	↔	
	802.15.4/Zigbee Modules	28-34	↗	↔	
CEL	Small Signal, Schottky Diodes, PIN Diodes, Bipolar Transistors, FETs/PHEMTs, Amplifiers, Mixers & Modulators, VCOs, SS Bipolar Transistors, Wideband Transistors	32	↗	↗	
	Bluetooth Modules	28-38	↘	↔	
Infineon + Cypress	Small Signal, Schottky Diodes, PIN Diodes, Bipolar Transistors, FETs/PHEMTs, Amplifiers, Mixers and Modulators, VCOs, SS Bipolar Transistors, Wideband Transistors	28- 54	↗	↗	Cypress is now Infineon
Fibocom	Cellular Modules	18-22	↔	↔	
Kyocera AVX	Antennas	10-12	↔	↔	
	Wi-Fi Modules	28-54	↔	↔	
Laird Connectivity	Antennas	18-22	↗	↔	
	LoRa	~32-54	↗	↔	
	Cellular Modules	8-12	↔	↔	
Linx Technologies	Antennas	12-14	↗	↔	
	Transceivers/Receivers	12-14	↗	↔	
Melexis	Transceivers/Receivers	18	↔	↔	
	RFID	16-18	↔	↔	
	Wi-Fi Modules	18 -28	↘	↔	
Microchip	Bluetooth Modules	14-28	↔	↔	
	Transceivers/Receivers	20-22	↔	↗	
	LoRa	34	↗	↔	
MultiTech	Cellular Modules	18-22	↔	↔	
	LoRa	~22	↔	↔	





MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Murata	Wi-Fi Modules	28-52	↔	↔	
	Bluetooth Modules	28-52	↔	↔	
	Small Signal, Schottky Diodes, PIN Diodes, Bipolar Transistors, FETs/PHEMTs, Amplifiers, Mixers and Modulators, VCOs, SS Bipolar Transistors, Wideband Transistors	14-22	↔	↔	
	LoRa	54	↔	↔	
Nearson	Antennas	18	↔	↔	
NXP	Multi-Protocol/Chip Solutions	54-58	↙	↗	
	Transceivers/Receivers	26	↔	↗	
	RFID	22-42	↔	↗	Parts on allocation
	High Power IC's	54	↗	↗	
Onsemi	Small Signal, Schottky Diodes, PIN Diodes, Bipolar Transistors, FETs/PHEMTs, Amplifiers, Mixers and Modulators, VCOs, SS Bipolar Transistors, Wideband Transistors	28-54	↗	↗	
	Bluetooth Modules	18-32	↔	↔	
Panasonic	Bluetooth Modules	42-44	↔	↔	
	RFID	16-18	↔	↔	
Pulse Electronics	Antennas	10-12	↔	↔	
Semtech	Transceivers/Receivers	38	↗	↗	
	LoRa	18-54	↔	↔	
Sierra Wireless	Multi-Protocol/Chip Solutions	42-48	↙	↔	
	Cellular Modules	32-42	↙	↔	Intel based radios are at 52 weeks
Silex Technology	Wi-Fi Modules	30-54	↔	↔	
ST Microelectronics	Bluetooth Modules	14-18	↙	↔	
	Transceivers/Receivers	54	↗	↗	Capacity constraints on Spirit Radio
	RFID	32-42	↔	↔	ST25R39xx on allocation
	GPS	42-54	↔	↔	
	High Power IC's	54	↔	↔	
	LoRa	18	↔	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Synapse Wireless	802.15.4/Zigbee Modules	20-22	↗	↔	
Taoglas	Antennas	22-24	↗	↔	
TDK	Small Signal, Schottky Diodes, PIN Diodes, Bipolar Transistors, FETs/PHEMTs, Amplifiers, Mixers and Modulators, VCOs, SS Bipolar Transistors, Wideband Transistors	14-22	↔	↔	
Thales	Cellular Modules	20-22	↗	↔	
	Bluetooth Modules	14-28	↔	↔	
U-Blox	Cellular Modules	14-28	↘	↔	Parts are on allocation, lead time is 26+
	GPS	14-28	↘	↔	Parts are on allocation and increasing in cost
	WiFi Modules	14-28	↔	↔	

REBOUND ELECTRONICS  
 Liaise with your account manager for more information.



Preventing problems in your supply chain.



## Discrete

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Diodes Inc.	Low Voltage MOSFETS	10-18	↙	SMA	
	TVS Diodes	10-16	↙	↔	
	Bridge Rectifiers	10-32	↔	↔	
	Schottky Diodes	16-32	↙	↔	
	Rectifiers	10-32	↔	↔	
	Switching Diodes	14-22	↔	↔	
	Small Signal MOSFETS	14-32	↔	↔	
	Zener Diodes	14-22	↙	↔	
	Bipolar Transistors	16-22	↙	↔	
	Digital Transistors	14-22	↙	↔	
	General Purpose Transistors	14-22	↙	↔	
	Logic	10-12	↔	↔	
EATON	ESD	18-22	↔	↔	
	Fuses	16-22	↔	SMA	
	Clips and Holders	14-18	↔	↔	
Everlight	Optocoupler Components	32	↙	↔	
Fairchild (ON Semiconductor)	IGBTs	42-54	↔	↔	
	Bridge Rectifiers	50-52	↔	↔	
	Rectifiers	28-34	↙	↔	
	Optocoupler Components	18-22	↔	↔	
Infineon	Low Voltage MOSFETS	12-38	↙	SMA	
	High Voltage MOSFETS	14-42	↙	↔	
	IGBTs	16-54	↔	↔	
	Wide Bandgap Mosfets	28-54	↔	↔	
	Digital Transistors	8-52	↔	↔	
	General Purpose Transistors	8-52	↔	↔	
	Mil-Aero Transistors	22-54	↔	↗	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Isocom Components	Optocoupler Components	4-6	↔	↔	
IXYS	High Voltage MOSFETS	52-56	↔	↔	
	IGBTs	52-56	↔	↔	
Keystone	Clips and Holders	12-18	↔	SMA	
Kyocera	Varistors	16-20	↔	↔	
Lite-On	Optocoupler Components	22-24	↔	↔	
Littelfuse	ESD	52-56	↔	↔	
	Diode Arrays	52-56	↔	SMA	
	Varistors	14-18	↔	↔	
	Wide Bandgap Mosfets	44-54	↔	↔	
	Fuses	16-22	↔	SMA	
	PTC Fuses	12-16	↔	↔	
	Clips and Holders	16-22	↔	↔	
	Thyristors/Triacs	14-22	↔	↔	
	TVS Diodes	10-16	↙	SMA	
	Sensors	18-32	↔	SMA	
Micro Commercial Components	Low Voltage MOSFETS	12-22	↙	↔	
	High Voltage MOSFETS	18-26	↔	↔	
	ESD	14-18	↔	↔	
	TVS Diodes	10-16	↔	↔	
	Schottky Diodes	12-22	↔	↔	
	Switching Diodes	12-22	↔	↔	
	Small Signal Mosfets	12-22	↔	↔	
	Zener Diodes	14-20	↔	↔	
Bipolar Transistors	10-16	↔	↔		
General Purpose Transistors	10-16	↔	↔		



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Microchip	High Voltage Mosfets	44-54	↔	↔	
	Wide BandGap Mosfets	26-38	↙	↔	
Microsemi	High Voltage MOSFETS	44-54	↔	↔	
	IGBTs	44-54	↔	↔	
	Mil-Aero Diodes	28-54	↔	↔	
	Mil-Aero Transistors	34-62	↔	↔	
Nexperia	Low Voltage MOSFETS	6-22	↙	SMA	
	ESD	8-20	↔	↔	
	Schottky Diodes	6-20	↙	↔	
	Switching Diodes	6-20	↙	↔	
	Small Signal MOSFETS	10-18	↙	↔	
	Zener Diodes	6-18	↙	↔	
	Bipolar Transistors	6-18	↙	↔	
	Digital Transistors	6-18	↙	↔	
	General Purpose Transistors	6-18	↙	↔	
	Logic	8-10	↔	↔	
ON Semiconductor	Low Voltage MOSFETS	28-54	↙	SMA	
	High Voltage MOSFETS	38-54	↙	↗	
	ESD	18-42	↙	↔	
	Wide Bandgap Mosfets	44-54	↔	↔	
	Schottky Diodes	14-68	↔	SMA	
	Rectifiers	26-34	↙	SMA	
	Switching Diodes	14-48	↙	SMA	
	Small Signal MOSFETS	32-52	↙	SMA	
	Zener Diodes	14-48	↔	SMA	
	Bipolar Transistors	14-42	↔	SMA	
	Digital Transistors	14-42	↙	SMA	
	General Purpose Transistors	14-48	↔	SMA	
Logic	16-22	↙	↔		
ProTek Devices	Diode Arrays	16-20	↗	↗	
Renesas	Optocoupler Components	54	↔	SMA	
	High Voltage MOSFETS	18-22	↙	↔	
	Wide Bandgap Mosfets	22-54	↔	↔	
ROHM	Schottky Diodes	15-32	↔	↔	
	Switching Diodes	15-32	↔	↔	
	Digital Transistors	15-32	↙	↔	
	General Purpose Transistors	15-32	↔	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Schurter	Fuses	22-42	↔	↗	
	Clips and Holders	22-32	↗	↗	
Semtech	Diode Arrays	22-24	↔	↔	
	Low Voltage MOSFETS	52-56	↘	↔	
	High Voltage MOSFETS	16-42	↘	↔	
	IGBTs	16-54	↘	↔	
	ESD	24-34	↘	↔	
ST Microelectronics	Wide Bandgap Mosfets	44-54	↔	↔	
	Thyristors/Triacs	18-20	↔	↔	
	TVS Diodes	28-32	↔	↔	
	Rectifiers	16-18	↔	SMA	
	Bipolar Transistors	42-54	↔	↔	
	TDK EPCOS	Varistors	16-28	↔	↔
TE Connectivity	PTC Fuses	12-16	↔	↔	
	Low Voltage MOSFETS	18-54	↘	↔	
Vishay	High Voltage MOSFETS	14-54	↘	↔	
	TVS Diodes	10-16	↘	↔	
	Bridge Rectifiers	22-42	↘	SMA	
	Rectifiers	14-18	↔	SMA	
	Zener Diodes	16-32	↘	↔	
	Optocoupler Components	12-42	↘	↔	

REBOUND ELECTRONICS

Liaise with your account manager for more information.

# INDUSTRIES

Our experience spans multiple industries including automotive, aerospace and defence, renewable energy and medical. Futureproof your supply chain through multiple offerings including data insights, dedicated account management and global reach.

Automotive



Aerospace & Defence



Renewable Energy



Medical







## Electromechanical

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Abracon	Timing	14-54+	↙	SMA	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKMf ire
ADDA	Fans	22-26	↔	↔	
Alps Electric	Switches	26-34	↗	↔	
American Zettler	Relays	18-54+	↔	↔	
Bivar	Hardware	12-18	↔	↔	
Boyd	Fans	14-16	↗	↗	
	Heatsinks	18-26	↔	↗	
C&K	Switches	14-32	↔	↔	
Churod Electronics	Relays	10-32	↔	↔	
Citizen Finedevice	Timing	14-54	↔	↔	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
COSEL	Power Supplies (AC/DC)	50	↔	↔	
	Power Supplies (DC/DC)	50	↔	↔	
CTS	Switches	10-12	↔	↔	
	Timing	14-54	↙	↔	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
CUI Inc	Power Supplies (AC/DC)	26-54+	↔	↔	
	Power Supplies (DC/DC)	14-38	↙	↔	
	Heatsinks	12-14	↔	↔	
Delta	Fans	42-54	↗	↗	
Diodes Inc	Timing	12-52	↔	↔	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
E-Switch	Switches	18-20	↔	↔	
ECS Inc.	Timing	16-54+	↙	SMA	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
EPSON Electronics America	Timing	28-42+	↙	↔	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
Essentra Components	Hardware	14-16	↗	↗	
Fox	Timing	12-42+	↔	↔	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
Grayhill	Switches	22-26	↔	↔	
Heyco	Hardware	12-14	↔	↔	
Hongfa	Relays	18-54+	↔	SMA	
Infineon	Relays	42-54	↔	↗	
IXYS	Relays	12-32	↔	↔	
Keystone	Hardware	14-16	↔	↗	
Kyocera International	Timing	18-30	↙	↔	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
MEAN WELL	Power Supplies (AC/DC)	22-30	↙	↗	
Microchip	Timing	14-28	↔	↗	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
Murata	Timing	10-12	↔	↔	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
Murata Power Solutions	Power Supplies (AC/DC)	28-54	↔	↗	
	Power Supplies (DC/DC)	22-42	↔	↗	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
NKK Switches	Switches	12-20	↗	↗	
NMB	Fans	40-52	↔	↔	
Ohmite	Fans	12-14	↗	↗	
Orion Fans	Fans	18-20	↔	↔	
Panasonic	Relays	16-32	↔	↗	
	Switches	12-14	↔	↔	
Qualtek	Fans	22-26	↔	↔	
Raltron	Timing	12-42	↔	↔	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
RECOM	Power Supplies (AC/DC)	26-74+	↔	↔	
	Power Supplies (DC/DC)	16-38	↗	↔	
Rosenberg	Fans	18-20	↔	↔	
Schneider Electric	Relays	18-20	↔	↔	
Song Chuan	Relays	26-38	↔	↔	
SUNON	Fans	32-44	↔	↔	
TE Connectivity Sensors	Relays	14-16	↔	↔	All stable except the IM ready Series- allocation 52+ weeks
	Switches	12-14	↔	↔	
Vicor	Power Supplies (AC/DC)	28-54	↗	↗	
	Power Supplies (DC/DC)	28-54	↗	↗	
Wakefield Thermal	Heatsinks	12-14	↔	↔	
Wall Industries	Power Supplies (AC/DC)	10-12	↔	↔	
	Power Supplies (DC/DC)	10-12	↔	↔	
ZF Electronics	Switches	20-22	↔	↗	

REBOUND ELECTRONICS

Liase with your account manager for more information.

**Nuvox**  
By Rebound  
Hybrid Semiconductor Distributor



Competitive Price Vs.  
Tier 1 Manufacturers



Reduced Lead  
Times



De-risk your  
supply chain





## High - End

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
AZ Displays	LCD's	18-20	↙	↔	
Compulab	SOM	20-28	↔	↔	
Cypress	8 bit MCU	12-18	↙	↔	
	32 bit MCU	12-54	↙	↔	
	USB	44-54	↙	↔	
	Automotive	34-48	↔	↔	
Formerica	Fibre Optic Transceivers	14-18	↙	↔	
Infineon	Automotive	Allocation	↔	↔	
iWave Systems	SOM	28-32	↔	↔	
Lattice Semiconductor	FPGA	22-34	↙	↔	
Microchip	8 bit MCU	28-54+	↙	↔	
	32 bit MCU	28-54+	↙	↔	
	PHY/ Ethernet	28-28	↔	↙	
	USB	18-22	↙	↔	
	32 bit MPU	32-54	↔	↔	
Microsemi	FPGA	30-44	↙	↔	
NXP	8 bit MCU	15-42	↙	↔	
	32 bit MCU	15-42	↙	↔	
	Automotive	20-54	↙	↔	
	32 bit MPU	20-54	↙	↔	
	Network Processors	20-44	↙	↔	
Renesas RA	32 bit MCU	20	↙	↔	
Renesas	8 bit MCU	14-20	↙	↔	
	32 bit MCU	20	↙	↔	
	Automotive	48	↔	↔	
	32 bit MPU	20-28	↔	↔	
Sharp	LCDs	30-32	↙	↔	
ST Microelectronics	8 bit MCU	12-26	↙	↔	
	Automotive	42-54	↔	↔	
	32 bit MPU	18-22	↙	↔	
	STM32F0- 32 bit MCU	12-14	↙	↔	
	STM32F1- 32 bit MCU	18-22	↙	↔	
	STM32L- 32 bit MCU	18-22	↙	↔	
	Balance 32 bit MCU	12-14	↙	↔	
STM32F2/F4/F7/H7	12-22	↙	↔		
Zilog	8 bit MCU	26-42	↔	↔	



## Interconnect

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Adam Tech	I/O Connectors	18-20	↙	↔	
	PCB Connectors	18-20	↙	↔	
Altech Corp.	Terminal Blocks & Crimps	14	↔	↔	
	D-Sub Connectors	10-12	↔	↔	
Amphenol Communications Solutions	Data & Telecom	10-12	↔	↔	
	PCB Connectors	10-12	↔	↔	
	FFC/FPC	10-12	↔	↔	
Amphenol Sine System	Circular Connectors	10-22	↙	↔	
	Data & Telecom	22	↔	↔	
ASSMAN WSW Components	PCB Connectors	22	↔	↔	
	IC Sockets	22	↔	↔	
Bulgin	Circular Connectors	18-20	↔	↔	
EDAC	PCB Connectors	16-24	↔	↔	
Global Connector Technology	PCB Connectors	10-12	↔	↔	
	FFC/FPC	10-12	↔	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
HALO Electronics	Data & Telecom	14-20	↙	↔	
HARTING	PCB Connectors	12-14	↔	↔	
	PCB Connectors	18-28	↙	↔	
Hirose Electric	RF Connectors	18-28	↙	↔	
	FFC/FPC	18-28	↙	↔	
JST	PCB Connectors	18-40	↙	↔	
Mil-Max	PCB Connectors	6-8	↔	↔	
	IC Sockets	6-8	↔	↔	
Ouipiin	PCB Connectors	16-22	↙	↔	
Sullins	PCB Connectors	8-10	↔	↔	
TE Connectivity	Automotive Connectors	22-30	↙	*	
	Circular Connectors	18-28	↙	*	
	Relays	22-28	↙	*	
	Data & Telecom	8-10	↔	*	
	PCB Connectors	14-18	↔	*	
	RF Connectors	14-16	↔	*	
	IC Sockets	8-10	↔	*	
	Terminal Blocks & Crimps	18-26	↙	*	
WAGO	Lighting Connectors	10-12	↔	*	
	Terminal Blocks & Crimps	16	↔	↔	
WECO	Lighting Connectors	16	↔	↔	
	Terminal Blocks & Crimps	22	↔	↔	





## Lighting Solutions & Opto

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Bridgelux	Chip On Board (CoB)	8-10	↔	↔	
Dialight	Indication LEDs	12-18	↔	↗	
	6V (LED Optics)	12-18	↔	↔	
	Automotive LEDs (AEC-Q101 Certified)	10-12	↔	↔	
Everlight	Infrared Components/ LED	16-18	↔	↔	
	Indication LEDs	16-18	↔	↔	
	UV LEDs	10-12	↔	↔	
Excellence Optoelectronics Inc.	Automotive LEDs (AEC-Q101 Certified)	10-12	↔	↔	
General Luminaire	Standard Light Engines (Level 2 Boards)	16-18	↔	↔	
Inolux	Indication LEDs	8-10	↔	↔	
Kingbright	LED Displays	12-14	↔	↔	
	Indication LEDs	10-12	↔	SMA	
	Infrared Components/ LED	16-18	↔	↔	
Lite-On	LED Displays	16-18	↔	↔	
	Indication LEDs	18-22	↔	↔	
Lumex	LED Displays	18	↔	↔	
	Indication LEDs	10-16	↔	↔	
	Illumination High Power LEDs (White)	10-14	↘	SMA	
	Illumination High Power LEDs (Colors)	10-12	↔	SMA	
	Illumination High Power LEDs (White & Colors)	10-12	↔	SMA	
	Horitcultural Mid Power LEDs (White & Colors)	10-12	↔	↔	
Lumileds	Automotive LEDs (AEC-Q101 Certified)	16-18	↔	↔	
	Chip On Board (CoB)	10-12	↔	↔	
	Standard Light Engines (Level 2 Boards)	20-28	↔	↗	
	Infrared Components/ LED	28	↔	↔	
	UV LEDs	14-18	↘	↔	
Meanwell	LED Drivers	12-22	↔	↔	
Murata	Lighting Controls	28-32	↔	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Nichia	Illumination High Power LEDs (White)	8-12	↔	↔	
	Illumination High Power LEDs (Colors)	8-12	↔	↔	
	Illumination High Power LEDs (White & Colors)	10-12	↔	↔	
	Horitcultural Mid Power LEDs (White & Colors)	10-12	↔	↔	
	Chip On Board (CoB)	14-16	↔	↔	
ROHM	Infrared Components/ LED	8-10	↔	↔	
	Indication LEDs	12-14	↔	↔	
Samsung LED	Illumination High Power LEDs (White)	8-10	↔	SMA	
	Illumination High Power LEDs (White & Colors)	10-12	↔	SMA	
	Horitcultural Mid Power LEDs (White & Colors)	10-12	↔	↔	
	Chip On Board (CoB)	8-10	↔	↔	
	Standard Light Engines (Level 2 Boards)	8-10	↙	SMA	
Seoul Semiconductor	Illumination High Power LEDs (White)	8-10	↔	↔	
	Illumination High Power LEDs (White & Colors)	8-10	↔	↔	
	Horitcultural Mid Power LEDs (White & Colors)	8-10	↔	SMA	
	Chip On Board (CoB)	10-12	↔	↔	
	Standard Light Engines (Level 2 Boards)	12-14	↔	SMA	
Seoul Viosys	UV LEDs	10-12	↔	↔	
Stanley Electric	LED Displays	14	↔	↔	
	Indication LEDs	12-14	↔	↔	
TE Connectivity	6A (Heat Sinks, LED Holders)	22-52	↔	↔	
TT Electronics- Optek Technology	Infrared Components/ LED	28-46	↔	↗	
VCC	Indication LEDs	14	↔	↗	
Vishay	Infrared Components/ LED	10-22	↙	↔	
	Indication LEDs	10-32	↔	↗	
	UV LEDs	16-18	↔	↔	





## Memory

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
ADATA	Memory Modules	8-10	↔	SMA	
	eMMC	8-10	↔	SMA	
	Memory Cards	10-12	↔	SMA	
	Solid State Drives (SSD)	10-14	↔	SMA	
Alliance Memory	PC (Commodity) DRAM	4-22	↔	SMA	
	Mobile RAM	14-18	↔	↔	
	SRAM	10-32	↙	↔	
	NOR Flash	14-22	↔	↔	
	NAND Flash	10-26	↙	↔	
	eMMC	10-14	↔	↔	
Cypress	SRAM	14-54	↙	↔	
	NOR Flash	14-28	↙	↔	
	FRAM & NVSRAM	14-28	↙	↔	
Everspin Technologies	MRAM	14-30	↔	↗	
Greenliant	NOR Flash	10-18	↔	↔	
	eMMC	14-20	↔	↗	
	Memory Cards	10-18	↔	↔	
	Solid State Drives (SSD)	10-18	↗	↗	
Kingston	PC (Commodity) DRAM	4-8	↔	SMA	
	Memory Modules	4-8	↔	SMA	
	eMMC	4-8	↔	SMA	
	Memory Cards	4-12	↔	SMA	
	Solid State Drives (SSD)	6-10	↔	SMA	
Macronix	NOR Flash	10-14	↔	SMA	
	NAND Flash	10-14	↔	SMA	
	eMMC	20-28	↔	↔	Parts on allocation, MXIC is not quoting and not taking new orders for the time being



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Microchip	SRAM	48-50	↔	↗	
	NOR Flash	28-54	↔	↔	
	EEPROM	54-102	↔	↔	
	EPROM	14-28	↔	↗	
Onsemi	SRAM	22-42	↔	↔	
	EEPROM	22-32	↔	↔	
Renesas	SRAM	22-24	↙	↔	
	NOR FLASH	20-42	↔	↔	
	DATA FLASH	30-32	↔	↔	
Samsung LED	PC (Commodity) DRAM	54-56	↔	↔	Parts on allocation, Samsung is not quoting and not taking new orders for the time being
	Memory Modules	54-56	↔	↔	
	eMMC	54-56	↔	↔	
	Solid State Drives (SSD)	54-56	↔	↔	
SkyHigh Memory	SLC NAND Flash	10-14	↙	SMA	
	eMMC	10-14	↔	↔	
STMicroelectronics	EEPROM	14-28	↔	↔	Now on allocation



## Passives

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Apl Delevan	Inductors	16-18	↙	↔	
Cornell Dubilier Electronics	Electrolytic	24-48	↔	↗	
	Capacitor	28-42	↙	↗	
CTS	Resistor Networks	18-42	↔	↗	
Eaton	Capacitors - Supercapacitors	12-22	↙	↗	
	Inductors	22-32	↙	↔	
ELNA	Capacitors - Supercapacitors	32-54+	↔	↔	
HALO Electronics	Inductors	16-18	↙	↔	
Murata	Filters	14-18	↔	↔	
	Inductor / Transformers	14-22	↙	↔	
	Surface Mount General Capacitors - Ceramic (Less than 1 uf)	12-16	↔	↔	
	Surface Mount General Capacitors - Ceramic (Greater than 1 uf)	12-14	↔	↔	
	Leaded Capacitors - Ceramic	18-20	↔	↔	
	Specialty Capacitors	18	↔	↔	
	Surface Mount General Capacitors	16-18	↔	↔	
NIC Components	Electrolytic	24-32	↙	↔	
	Filters	16-22	↔	↔	
	Inductors	16-22	↔	↔	
	Fixed Resistors	14-20	↔	↔	
	Surface Mount General Capacitors - Ceramic (Less than 1 uf)	20-22	↔	↔	
	Surface Mount General Capacitors - Ceramic (Greater than 1 uf)	16	↔	↔	
	Leaded Capacitors - Ceramic	28-30	↔	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Nichicon	Electrolytic	20-32	↙	↔	
Panasonic	Electrolytic	20-32	↙	↔	
	Capacitors- Polymer Tantalum	12	↙	↔	
	Inductors / Transformers	24-30	↔	↔	
	Fixed Resistors	22-54	↙	↔	
	Resistor Networks	20-30	↔	↔	
Paktron Capacitors	Capacitors- Film	14-18	↔	↗	
Samsung Electro-Mechanics	Fixed Resistors	46-48	↔	↗	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	12	↙	↔	
	Surface Mount General Capacitors – Ceramic (Great than 1 uf)	16-18	↔	↔	
	Surface Mount General Capacitors-Ceramic *Automotive Upgrade	20-22	↙	↔	
Stackploe Electronics	Fixed Resistors	20-32	↔	↔	
Sumida	Inductors	28-42	↔	↔	
	Surface Mount General Capacitors- Ceramic ( Less than 1 uf )	20-22	↔	↔	
Taiyo Yuden	Surface Mount General Capacitors- Ceramic ( Greater than 1 uf )	22-24	↔	↔	
	Surface Mount General Capacitors-Ceramic *Automotive Upgrade	22-24	↔	↔	
	Filters	42-58	↗	↗	
TDK	Surface Mount General Capacitors- Ceramic ( Less than 1 uf )	24-26	↔	↔	
	Surface Mount General Capacitors- Ceramic ( Greater than 1 uf )	32-42	↔	↔	
	Surface Mount General Capacitors-Ceramic *Automotive Upgrade	22-24	↔	↔	
	Capacitors- Film	26-54+	↔	↔	
TDK EPCOS	Filters	14-18	↗	↔	
	Inductors / Transformers	18-22	↔	↔	





MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
TT Electronics- BI Technologies	Trimmers & Pots	42-54	↔	↔	
TT Electronics- IRC	Fixed Resistors	22-54	↗	↗	
United Chemi-Con	Electrolytic	24-36	↙	↔	
Viking	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	18-20	↔	↔	
	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	16-18	↔	↔	
Vishay	Trimmers & Pots	12-28	↗	↗	
	Capacitors- Film	14-28	↔	↗	
	Capacitors- Supercapacitors	16-22	↔	↔	
	Capacitors- Tantalum Molded	12-14	↔	↔	
	Capacitors- Tantalum Conformals	26	↔	↔	
	Capacitors- Polymer Tantalum	18-22	↔	↔	
	Inductors / Transformers	14-22	↔	↔	
	Fixed Resistors	54+	↔	↔	
	Surface Mount General Capacitors - Ceramic (Less than 1 uf)	18	↔	↔	
	Leaded Capacitors - Ceramic	18	↙	↔	
WIMA	Specialty Capacitors	42-46	↔	↔	
	Capacitors- Film	14-18	↙	↔	
Würth Elektronik	Inductors / Transformers	28-42	↔	↔	
Yageo	Fixed Resistors	20-22	↔	↔	
	Resistor Networks	22-26	↔	↔	
	Surface Mount General Capacitors - Ceramic (Less than 1 uf)	18-20	↔	↔	
	Surface Mount General Capacitors - Ceramic (Greater than 1 uf)	20-22	↔	↔	
	Surface Mount General Capacitors- Ceramic *Automotive Upgrade	16-18	↔	↔	

Although every effort has been made to provide complete and accurate information, Rebound Electronics makes no warranties, express or implied, or representations as to the accuracy of content within this document. Rebound Electronics assumes no liability or responsibility for any error or omissions in the information contained in the Market Watch Journal.



# Market Insights Q4 2023

## DISCLAIMER

The Market Insights document created by the Senior Commercial Analyst of Rebound Electronics is intended for informational purposes only. The document provides analyses of Semiconductor Industry's market trends, forecasts, and other relevant information based on the analyst's expertise, and available data online.

While every effort has been made to ensure the accuracy and reliability of the information presented in the Market Insights document, Rebound Electronics and the Senior Commercial Analyst do not guarantee the completeness, timeliness, or accuracy of the analyses. The document may contain forward-looking statements, assumptions, or opinions that are subject to change without notice.

The Market Insights document does not constitute financial, investment, or business advice, and it should not be relied upon as the sole basis for making investment and business decisions. Readers are advised to conduct their own research, analysis, and due diligence before making any financial and business decisions. Investment decisions involve risks, and it is important to consult with a qualified financial advisor or professional before making any investment choices.

Rebound Electronics and the Senior Commercial Analyst shall not be held liable for any losses, damages, or consequences resulting from the use of or reliance on the information provided in the Q4 2023 Market Insights document. Users are solely responsible for their actions and decisions based on the information presented in the document.

The Market Insights document is the property of Rebound Electronics, and any unauthorized reproduction or distribution is prohibited.

Contact us to  
secure your supply  
chain today.

