

# Market Insights Q2 2023



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#### **Market Growth**

- The overall size of the semiconductor packaging materials market was US\$26.1 billion in 2022 and is expected to reach to roughly US\$30 billion by 2027 according to TECHCet's report last April 18, 2023. The market was dominated by Laminate substrate followed by Leadframes, Bonding Wire, Encapsulant Materials, Die attach, WLP Plating Chemicals, WLP Dielectrics, and Underfills, respectively.
- According to KPMG advisory, based on the Global semiconductor industry survey, 81% expect increase in company revenue this 2023; 52% feel that chip supply shortages will ease by mid 2023; 46% plan to diversify their supply chain geographies in the next 12 months; 67% say that talent risk remain top strategic priority for the next three years (baseline year 2022); and 24% believe that there is currently a semiconductor inventory excess, and the supply chain shortage is over.
- Survey respondents from KPMG advisory says that Automotive is the most important revenue driver in semiconductor company revenue followed by wireless communications, IoT, Cloud computing, and AI. The company predicts that this industry's revenue will reach USD 200 billion annually by mid-2030s and might surpass USD 250 billion by 2040.
- Leaders do not see that Russia-Ukraine war will materially impact semiconductor supply chain in 2023.
- California-based tech company, Nvidia, achieved a significant milestone by reaching USD 1 Trillion market valuation making it to the trillion-dollar club alongside Amazon, Apple, and Microsoft.

#### Semiconductor Industry

- There are constraints in supplies in the following commodities: Circuit protection, Capacitors ceramic and non-ceramic, Filter, SRAM and Legacy DRAM, Sensors, Diode, and Optoelectronics.
- The supplies in the following commodities are on allocation: Resistors General and Automotive, Timing IC, Analog Signal Chain, Transistor, and Prog Logic.
- There are price increase in the following commodities: Automotive Resistor, Sensors, Timing IC, Analog Signal Chain, Analog Power and Relays.
- Japan's Ministry of Industry aims to triple sales of semiconductors made in Japan to 15 trillion yen (USD 112 billion) by 2030 to strengthen Japan's economic security.
- The Japanese Government announced that they plan to restrict the export of 23 types of chip manufacturing equipment in 6 categories involving chip cleaning, deposition, etching, lithography, etc. starting July 2023 that may affect Japanese companies such as Nikon and Tokyo Electronics.
- The Japanese Ministry of Economy, Trade and Industry plans to grant an additional USD 2.27 billion from the initial funding of 70 billion yen to chipmaker Rapidus to build a semiconductor fab in Hokkaido.
- Due to changes in market demand, TSMC has cancelled orders for all production equipment for its 28 nm fab that were originally scheduled for mass production in year 2024. The company planned to build two fabs in Koahsiung for 7nm and 28nm factories.
- South Korea's global memory chip market dominance is set to expand as China alter the Semiconductor chain. SK's global DRAM chip share is likely to reach 64% in 2023, according to TrendForce.
- India aims to become the world's largest semiconductor manufacturing location with most competitive
  production cost in the next 4-5 years. The government will work by building on necessary ecosystem to support
  it.
- UK government announces partnership with Japan through R&D collaboration and skills exchange, strengthening each country's domestic sector as well as enhancing supply chain resilience.
- The primary Japanese suppliers' capacity for Film capacitors is sold out the whole year from Industrial and Automotive customers.



#### **Semiconductor Industry**

#### **Passive Commodities**

**Ceramic Capacitors** 

- Majority of supply bases' factory utilization is under 60% with some Taiwanese suppliers having as low as 50%. As a result, the industry must be aware that the possibilities of sudden increase in demand may cause another round of shortages unless the needs are well-anticipated and managed accordingly.
- Automotive backlogs are showing relaxed trend; however, utilization remains between ~80 90+% for Japanese suppliers; Taiwanese-based suppliers is slightly above 50%, whereas US manufacturers remain close to 100%.
- A reduction in backlogs is seen in Q2 2023 with suppliers averaging 2-3 months while backlogs for Automotive MLCCs is over 3-4 months.
- Manufacturer and distribution's inventory struggle from record levels in Q2 2023 with manufacturers inventory of around 2 months and Automotive MLCCs less than a month, on the average.
- Lead times have been further reduced by 2-4 weeks and are quoted to be at 14-18 weeks, on the average.
- The demand for large sizes remain stable therefore, the pricing trend remain flat to up. Products with palladium content remains high and trending upwards.
- Growth in Automotive market continued resulting in recovery in suppliers inventory this summer.
- Capacitor manufacturers are continuously increasing capacity for standard products by approximately 5% yearly.

#### Tantalum Capacitors

- Small case sizes such as A & B lead times are improved to 14-18 weeks due to supply relief while C, D, & E improved to 28-34 weeks. Despite improvements in supply, moderate supply constraints will continue to Q2 2023.
- Tantalum Capacitors pricing remain flat to until half of this year except for legacy product such as wet tantalum and military series, the prices will remain increasing due to a lack of long-term demand.

#### **Electrolytic/Film Capacitors**

- There are strong demand and backlogs for Aluminium capacitors for automotive, industrial, and renewable energy markets. Hybrid capacitors are still facing extreme supply constraints resulting in Aluminium capacitors' flat to upward trend.
- Lead times for Japanese suppliers are improved to 26-50 weeks and 16-26 weeks for Taiwan and China-based suppliers.

#### Magnetics

- Lead times are improving as a result of increased availability of capacity shortened raw material lead times. However, for some suppliers, specialty parts for automotive applications remain strained.
- Due to challenges in logistics and reduced demand, prices are flat.

#### **Circuit Protection**

- Lead times remain stable for majority of Circuit protection products. Fuses are quoted at 18-26 weeks; Varistors at 26 weeks; Circuit breakers 10 weeks up to a year.
- The price is stable across most product families, however, Price increase in Circuit Breakers and GDTs are due to elevated level of raw materials and logistic cost.



#### Semiconductor Industry

#### Passive Commodities

#### Resistors

- For automotive-grade parts, capacity constraints, supply allocation, and extended lead times are expected due to high demand driven by Automotive and industrial markets. As a result, Inventory pressure is increasing among manufacturers and distributors.
- Prices for general grade parts remain flat to decrease, while the pricing have increased for Automotive grade parts.
- Downward price trend is expected for general parts due to inventory dumping.

#### Semiconductor Commodities

#### Analog Market Overview

- The major concern across most Semiconductor companies, EMS, OEM, and even distribution is excess inventory.
- Some manufacturers are still imposing non-cancellable and non-returnable (NCNR) terms for this year's backlog management, but some are open to exploring pushout and cancellation requests if necessary.
- Due to declining demand and general market softness, Semiconductor industry has entered a downward cycle after 2-3 years of significant price increase.

#### Standard Logic

- Demands in Consumer, PC, and Smartphone end markets decreased. Shrinking demand for consumer electronics is forcing orders to be cancelled resulting in build-up in inventory at the manufacturers.
- The availability of supply for some products has improved, however, it is not resulting in price drop. Pricing is generally flat as there is still an imbalance in supply-demand, particularly in Automotive and Industrial markets.

#### Discrete

- Increased in inventory is due to market slowdown.
- Prices are predicted to remain stable throughout the whole year for most suppliers.

Optoelectronics

- The supply situation have improved but will remain quite constrained for Japanese and non-asian manufacturers.
- For Asian manufacturers, it is expected to have lead times of below 12 weeks and up to 30 weeks for US & Japanese manufacturers.
- High price in China is due to high labour costs.

#### Volatile Memory: DRAM

- Supply in DDR4 have some constraints while DDR3 have some constraints but with some available production options. Legacy (SDRAM, DDR1, 2) is stable.
- Lead times are normalizing, and Prices decreased.



#### Semiconductor Industry

#### Semiconductor Commodities

Volatile Memory: DRAM

• Supply and prices are all stable.

#### Non-Volatile Memory: NAND Flash, NOR Flash, EEPROM

- There are some constraints for the supply of Planar NAND and 3D NAND Flash while supply of EEPROM remain stable.
- NAND Flash and NOR Flash's pricing will remain flat to decreasing while EEPROM's pricing is stable.

#### Solid State Drives

- Supply will be stable to having few constraints.
- The demand and SSD market in Automotive applications is expected to increase.
- There is decreased in pricing for Q2 of 2023.

#### Sensors

- Supply will face constrains. The automotive is driving the growth momentum.
- The sensor market will experience moderate price increase.

#### **Timing Devices**

- The market is experiencing constraints but will have an ease after half of the year.
- There is no change in price.

#### **High-End Semiconductors**

Connectors

- Raw material availability has improved, and no signs of short-term supply constraints.
- The supply remains stable.
- Generally, the overall pricing in Q2 2023 will remain flat though some suppliers are still experiencing higher manufacturing costs due to high energy costs in EU.

#### Relay

- The market demand is expected to grow due to the increasing demand for Automation and electrification in various industries like automotive, manufacturing, and telecommunications.
- The overall pricing will remain flat.

#### Switch

• Lead times and pricing remain flat.

#### Battery

- Lead time ranges from 8-14 weeks.
- Prices will remain under pressure.



#### **Analog Devices**

- Analog Devices will invest €630 Million in next generation semiconductor R&D and manufacturing facility in Limerick, Ireland. The facility is intended to help accelerate advances in cutting-edge applications, including digital biology, electric vehicles, and robotics.
- The company revenue this quarter is USD 3.26 Billion -- increased 10% year-over-year.

#### Bourns

- The company released Model SM91534AL AEC-Q200 Compliant, Automotive Grade BMS (Battery Management System) Signal Transformer - a single channel, reinforced insulation transformer includes common mode chokes for noise rejections for BMS applications.
- Bourns expanded their facility in Cork, Ireland creating 35 new jobs in Application engineering, development engineering, project management, and marketing management positions.

#### Broadcom

• The company announced a multi-billion-dollar deal with Apple to produce 5G components to be used for Apple's products.

#### Diodes Inc.

- Diodes Incorporated released a new bidirectional, space-saving transient voltage suppressor (TVS) diode with superior ESD which addresses market needs for robust protection of high-speed data ports.
- AP7387Q low dropout (LDO) linear voltage regulator was introduced.
- Lead times have been improved but remain well above 30 weeks.

#### Infineon

- Infineon launched a two-European Union-wide three-year research projects dedicated to gallium nitride (GaN) integration and AI application. Partners in the project include Imec, Nexpria, Ballard Power Systems, EPFL, and Ericsson.
- Infineon and Foxxcon aim to establish a long-term partnership in EVs. The two companies signed an MOU focusing on Silicon Carbide (SiC) development.
- Infineon lead times remains stable with slight improvements to approximately 50 weeks.

#### Intel

- Intel's chip foundry manufacturing unit will have partnership with UK-based chip design company--Arm, to ensure that mobile phone chips and other products using Arm technology will be produced in Intel's fab.
- The company will discontinue the production of Bitcoin mining chip Blockscale ASIC. Intel will no longer accept orders after October 20, 2023 and the last batch of shipments will be no later than April 20, 2024.



#### Kyocera

- Kyocera plans to invest USD 470 million in new factory in Isahaya City, Nagasaki Prefecture, Japan for fine ceramic components for semiconductor-related applications and semiconductor packaging materials.
- Kyocera AVX has engineered new four- and five-position models to its 9176-700 series of capped insulation-displacement contact (IDC) connectors for 18–24AWG wires to satisfy the demanding requirements of automotive, transportation, industrial, lighting, and medical applications.
- The company will invest 400 million yen (~USD 2.9 million) in the construction of semi-conductor-related production facilities in AI and other fields by March 2026.
- Kyocera will restart production for their KHz Oscillator products in Q2 2023 and will set up a new manufacturing line for Crystals production in Hanoi, Vietnam with shipments to be ready in this quarter.

#### Lattice

- Lattice Semiconductor launched its official training portal called Lattice Insights to enable customers and partners to maximize their low power FPGA experience. This platform offers a variety of learning plans covering all aspects of FPGA-based development including silicon, software, solutions, boards and more.
- Frontgrade Technologies and Lattice semiconductor collaboration produces First low SWAP-C FPGA.

#### Micron

 Micron will receive about 200 billion yen (~USD 1.5 billion) in financial subsidies from Japanese Government to produce nextgeneration memory chips in Japan to boost domestic semiconductor production in the country. The funds will be used to install ASML's EUV advanced chip manufacturing equipment at its factory in Hiroshima to manufacture DRAM chips.

#### Molex

• Molex introduced the industry's first chip-to-chip 224G product portfolio.

#### Murata

• Murata's GRM series MLCCs are now available in 10μF capacitance values (±20% tolerance) in 0201inch/0603M package sizes.

#### Nexpria

- Nexpria announced the release of NEH2000BY, a high-performance power management integrated circuit (PMIC). The additional
  product to the expansion efforts is an energy-harvesting PMIC that enables environmentally friendly energy-autonomous lowpower device.
- The company introduced a 650 V Silicon Carbide (SiC) Schottky diode designed for power applications which require ultra-high performance, low loss, and high efficiency which delivers leading-edge performance encapsulated in Real-2-Pin TO-220-2 throughhole power plastic package.
- Nexpria continues to negotiate and add external foundries for additional wafer supply.



#### NXP

• NXP's CEO, Kurt Sievers said that the company is in discussions with foundry partners to set up fabs in India.

#### Onsemi

- Onsemi initiated a liquidation of assets for its subsidiary Kvantenna in Russia.
- The company is considering investing USD 2 billion for "end-to-end" production to increase production of silicon carbide chips in the US, Czech Republic, or South Korea.
- Onsemi has successfully completed its acquisition of Global Foundries' 300 mm East Fishkill (EFK), New York site and fabrication facility.

#### Panasonic

- Despite the supply-chain risks, China remains a high-priority market for Panasonic.
- The company plans to set up a new battery production line in Gigafactory Nevada as part of the company's strategies for EV growth.

#### Rapidus

 Rapidus will build more than two production buildings; 1nm chip factories in addition to 2nm chip factory in the Chitose factory in Hokkaido, Japan. The company plans to focus on high-performance computing (HPC) and ultra-low power consumption and will conduct trial-produce logic chips in 2025 and start production in 2027.

#### Renesas

- The company released new RISC-V MCUs designed specifically for voice-controlled Human machine interface.
- Renesas Electronics Corporation produced its first MCU based on advanced 22-nm process technology.
- Renesas Electronics plans to further increase the production capacity of automotive semiconductors by 10% by 2026. The company will invest approximately 48 billion yen to install manufacturing equipment at three fabs in Japan.
- Analog Power Product lead time is 20-38 weeks effective April 1, 2023.

#### Samsung

• Establishing a chip packaging and testing production plant in Kanagawa Prefecture, Japan is in company's considerations to strengthen its advanced packaging business and build closer ties with Japanese semiconductor material equipment manufacturers.



#### Siemens

- The Investment Promotion in Qatar signed a new Memorandum of Understanding with international companies, namely Emerson and Siemens to contribute to the launch of centre of excellence in Lusail City that will support development and promote leadership in technology and software design in the state of Qatar.
- Chemical industry to partner with Siemens for Pilot to decarbonize its supply chain. Pilot Project aims to demonstrate the scalability of PCF data exchange across an entire industry.

#### ST Microelectronics

- ST Microelectronics has signed a multi-year supply contract with ZF Group and will supply silicon carbide devices to ZF starting in 2025. The company will manufacture the silicon carbide chips at its production fabs in Italy and Singapore.
- The company introduced the second generation of its STM32 MPUs (microprocessors) that are ready for emerging opportunities in secure Industry 4.0, IoT, and rich user-interface applications.

#### TDK

- TDK Corporation launched its first EMC filters for high current converter applications.
- The company launched its new series (B74111U0055M060 and B74121U0055M060) of extremely compact TVS diodes with parameters matching a wide variety of USB-C ports and other high-speed interfaces.
- To cope with industrial and automotive market demands, TDK aims a 20% capacity expansion annually.

#### Toshiba

- Toshiba launched TLP3476S small photo relay with Highspeed Turn-on time that helps shorten test time for semiconductor testers.
- The company is working with Japan Industrial Partners (JIP) to quickly complete a USD 15 billion buyout by the private equity firm due to weak earnings.

#### **Texas Instruments**

- Texas Instruments and NXP semiconductors has complaints from ParkerVision for the infringement of four of its U.S patents.
- The company debuted UCC5880-Q1, a highly integrated, functional, safety-complaint, isolated gate driver that enables engineers to design more innovative and efficient traction inverters and maximize electric vehicle (EV) driving range.

#### Vishay

- Supply disruption by company caused by labour shortages has slowly improved but still requires close monitoring over the coming months.
- Vishay continues to be the technology leader in resistors but is increasingly facing competition from the lower technology players.



	ANALOG	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
	Amplifiers & Comparators	÷	<b>→</b>	28+
dard	Analog Interface	÷	•	28+
itan	Power Management		÷	28+
01	Converters	÷ +	<b>→</b>	28+
Standa	rd Analog Total	÷	•	28+
Advano	ced		<b>→</b>	28+

	MOS MICROLOGIC		PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)	
MPU					÷	28+
			8 Bit & Lower		<b>→</b>	28+
	MCU		16 Bit		<b>→</b>	28+
		L	32 Bit & Higher		<b>→</b>	28+
MCU	Total				÷	28+
Automotive MCU					÷	28+
DSP					<b>→</b>	28+

PROGRAMMABLE LOGIC	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
			28
STANDARD LOGIC	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Timing Products		<b>→</b>	28+
Interface		•	28+
Connectivity		÷	28+
Standard Logic	÷	<b>→</b>	54

F	POWER	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
FET		<b>→</b>	÷	54
IGBT		÷		54
Rectifier		÷		22+
Other Power		÷		54

REBOUND ELECTRONICS Liaise with your account manager for more information.



	MEMORY		PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)	
	sh	Г	NOR	÷		18+
	Fla		NAND		ę	12-18
eMMC						12-18
EEPROM				÷	÷	28+
DRAM						18+
SRAM				÷	÷	12-18
Solid State	e Drives				¢.	12-18

SENSORS	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
	÷	<b>,</b>	28+

ОРТО	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
LEDs (Low Power)	÷	÷	12-18
LEDs (Mid Power)	ę	÷	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	÷		18+
RF	÷	÷	54



	Stable
Я	Increasing
ĸ	Decreasing
SMA	Selective Market Adjustment
EOL	End-of-Life

click on a category below:



## Analog

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
ams	Sensors	18-26	$\leftrightarrow$	SMA	
Bosch Sensortec	Sensors	14-22	$\leftrightarrow$	$\leftrightarrow$	
Diadas Incorporated	Multi- Source Analog/Power	32-42	$\leftrightarrow$	$\leftrightarrow$	
	Switching Regulators	28-48	$\leftrightarrow$	$\leftrightarrow$	
FTDI Chip	Interface	32-42	$\leftrightarrow$	$\leftrightarrow$	
	Sensors	20-54	$\leftrightarrow$	٦	
Infineon	Switching Regulators	42-54	$\leftrightarrow$	$\leftrightarrow$	
	Analog and Power for Automotive (CAN/LIN/Smart FET)	48-54	$\leftrightarrow$	7	
Maxlinear	Interface	28-38	⊾	Я	
Melexis	Sensors	38-42	Ľ	Я	
	Signal Chain (Amplifiers and Data Converters)	32-42	$\leftrightarrow$	$\leftrightarrow$	
Microchip	Timing	32-42	$\leftrightarrow$	$\leftrightarrow$	
	Switching Regulators	42-52	$\leftrightarrow$	Я	
Monolithic Power Systems	Switching Regulators	48-52	Ľ	$\leftrightarrow$	
	Sensors	18-54	R	R	
NXP	Interface	28-32	Ľ	$\leftrightarrow$	
	Analog and Power for Automotive (CAN/LIN/Smart FET)	48-54	$\leftrightarrow$	ע	



MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
	Sensors	20-54	7	7	
	Signal Chain (Amplifiers and Data Converters)	28-44	Ľ	$\leftrightarrow$	
Onsemi	Timing	38-44	$\leftrightarrow$	$\leftrightarrow$	
	Multi- Source Analog/Power	38-44	$\leftrightarrow$	$\leftrightarrow$	
	Switching Regulators	38-52	$\leftrightarrow$	R	
Panasonic	Sensors	18-28	R	$\leftrightarrow$	
Pericom Saronix-eCera	Timing	22-28	$\leftrightarrow$	$\leftrightarrow$	
Power Integrations	Switching Regulators	18-20	$\leftrightarrow$	$\leftrightarrow$	
	Signal Chain (Amplifiers and Data Converters)	38-42	$\leftrightarrow$	$\leftrightarrow$	
Renesas	Timing	52	$\leftrightarrow$	$\leftrightarrow$	
nenesus	Interface	38-42	$\leftrightarrow$	R	
	Switching Regulators	38-42	Ľ	Я	
вонм	Sensors	26-54	R	Я	
	Switching Regulators	52	$\leftrightarrow$	$\leftrightarrow$	
	Sensors	16-22	ピ	$\leftrightarrow$	
	Signal Chain (Amplifiers and Data Converters)	30-42	Ľ	$\leftrightarrow$	
ST Microelectronics	Multi- Source Analog/Power	42-52	$\leftrightarrow$	$\leftrightarrow$	
	Switching Regulators	42-52	$\leftrightarrow$	$\leftrightarrow$	
	Analog and Power for Automotive (CAN/LIN/Smart FET)	42-54	$\leftrightarrow$	$\leftrightarrow$	
TE Sensor Solutions	Sensors	18-54	7	7	
Vishay	Sensors	26-54	л	$\leftrightarrow$	



## Batteries

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
Alium Batteries	Lithium Ion	2224	$\leftrightarrow$	л	
	Alkaline	12-14	$\leftrightarrow$	$\leftrightarrow$	
Energizer	Lithium Metal	16-18	$\leftrightarrow$	$\leftrightarrow$	
	Silver Oxide	10-12	$\leftrightarrow$	7	
	Alkaline	16-18	$\leftrightarrow$	$\leftrightarrow$	
	Lithium Metal	20-22	$\leftrightarrow$	$\leftrightarrow$	
GP Batteries	Lithium Ion	18-20	$\leftrightarrow$	$\leftrightarrow$	
Gr barrenes	Nickle Metal Hydride	12-14	$\leftrightarrow$	$\leftrightarrow$	
	Lead Acid	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Carbon Zinc	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Alkaline	12-14	$\leftrightarrow$	$\leftrightarrow$	
Panasonic	Lithium Metal	18-20	ĸ	$\leftrightarrow$	
Fallasonic	Nickle Metal Hydride	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Carbon Zinc	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Alkaline	10-12	$\leftrightarrow$	$\leftrightarrow$	
Rayovac	Lithium Metal	12-14	$\leftrightarrow$	$\leftrightarrow$	
	Nickle Metal Hydride	10-12	$\leftrightarrow$	7	
	Carbon Zinc	10-12	$\leftrightarrow$	Я	
	Lithium Metal	18-20	$\leftrightarrow$	7	
	Lithium Ion	22-24	л	$\leftrightarrow$	
Renata Batteries	Nickle Metal Hydride	12-14	$\leftrightarrow$	7	
	Silver Oxide	10-12	٦	٨	
	Carbon Zinc	10-12	$\leftrightarrow$	Я	



## Batteries

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
Tadiran Batteries	Lithium Metal	14-16	$\leftrightarrow$	$\leftrightarrow$	
	Alkaline	12-14	$\leftrightarrow$	я	
VADTA	Lithium Metal	20-26	$\leftrightarrow$	л	
VARTA	Lithium Ion	34-40	$\leftrightarrow$	л	
	Nickle Metal Hydride	12-14	$\leftrightarrow$	я	



## Connectivity

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
AMS	RFID	30-32	٦	$\leftrightarrow$	
	802.15.4/Zigbee Modules	28-34	٦	л	
CEL	Small Signal, Schottky Diodes, PIN Diodes, Bipolar Transistors, FETs/PHEMTs, Amplifiers, Mixers & Modulators, VCOs, SS Bipolar Transistors, Wideband Transistors	32	R	х	
	Bluetooth Modules	28-38	Ľ	$\leftrightarrow$	
Infineon + Cypress	Small Signal, Schottky Diodes, PIN Diodes, Bipolar Transistors, FETs/PHEMTs, Amplifiers, Mixers and Modulators, VCOs, SS Bipolar Transistors, Wideband Transistors	28- 54	٨	٨	Cypress is now Infineon
Fibocom	Cellular Modules	18-22	$\leftrightarrow$	$\leftrightarrow$	
Kyocera AVX	Antennas	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Wi-Fi Modules	28-54	Ľ	$\leftrightarrow$	
Laird Connectivity	Antennas	18-22	R	$\leftrightarrow$	
	LoRa	~32-54	٦	$\leftrightarrow$	
	Cellular Modules	8-12	$\leftrightarrow$	$\leftrightarrow$	
Linx Technologies	Antennas	12-14	7	$\leftrightarrow$	
	Transceivers/Receivers	12-14	٦	$\leftrightarrow$	
Melexis	Transceivers/Receivers	18	$\leftrightarrow$	$\leftrightarrow$	
	RFID	16-18	$\leftrightarrow$	$\leftrightarrow$	
	Wi-Fi Modules	26-28	Ľ	$\leftrightarrow$	
Microchip	Bluetooth Modules	26-28	$\leftrightarrow$	$\leftrightarrow$	
	Transceivers/Receivers	20-22	$\leftrightarrow$	л	
	LoRa	34	2	$\leftrightarrow$	
MultiTech	Cellular Modules	18-22	$\leftrightarrow$	$\leftrightarrow$	
	LoRa	~22	$\leftrightarrow$	$\leftrightarrow$	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
	Wi-Fi Modules	28-52	л	$\leftrightarrow$	
	Bluetooth Modules	28-52	Ľ	$\leftrightarrow$	
Murata	Small Signal, Schottky Diodes, PIN Diodes, Bipolar Transistors, FETs/PHEMTs, Amplifiers, Mixers and Modulators, VCOs, SS Bipolar Transistors, Wideband Transistors	14-22	$\leftrightarrow$	$\leftrightarrow$	
	LoRa	54	$\leftrightarrow$	$\leftrightarrow$	
Nearson	Antennas	18	$\leftrightarrow$	$\leftrightarrow$	
	Multi-Protocol/Chip Solutions	54-58	2	م	
	Transceivers/Receivers	26	$\leftrightarrow$	R	
	RFID	22-42	л	R	Parts on allocation
NXP	High Power IC's	54	7	7	
	Small Signal, Schottky Diodes, PIN Diodes, Bipolar Transistors, FETs/PHEMTs, Amplifiers, Mixers and Modulators, VCOs, SS Bipolar Transistors, Wideband Transistors	28-54	7	٦	
Onsemi	Bluetooth Modules	18-32	$\leftrightarrow$	$\leftrightarrow$	
Panasonic	Bluetooth Modules	42-44	Ľ	$\leftrightarrow$	
	RFID	16-18	$\leftrightarrow$	$\leftrightarrow$	
Pulse Electronics	Antennas	10-12	$\leftrightarrow$	$\leftrightarrow$	
Semtech	Transceivers/Receivers	38	7	я	
Semech	LoRa	18-54	$\leftrightarrow$	$\leftrightarrow$	
Sierra Wireless	Multi-Protocol/Chip Solutions	42-48	Ľ	$\leftrightarrow$	
Sierra Wireless	Cellular Modules	32-42	Ľ	$\leftrightarrow$	Intel based radios are at 52 weeks
Silex Technology	Wi-Fi Modules	30-54	я	٨	
	Bluetooth Modules	14-18	Ľ	$\leftrightarrow$	
	Transceivers/Receivers	54	я	я	Capacity constraints on Spirit Radio
ST Microelectronics	RFID	32-42	$\leftrightarrow$	$\leftrightarrow$	ST25R39xx on allocation
	GPS	42-54	$\leftrightarrow$	$\leftrightarrow$	
	High Power IC's	54	$\leftrightarrow$	$\leftrightarrow$	
	LoRa	18	$\leftrightarrow$	$\leftrightarrow$	



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



## Discrete

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
	Low Voltage MOSFETS	28-56	Ľ	$\leftrightarrow$	
	TVS Diodes	20-26	Ľ	$\leftrightarrow$	
	Bridge Rectifiers	16-34	Ľ	$\leftrightarrow$	
	Schottky Diodes	16-38	Ľ	$\leftrightarrow$	
	Rectifiers	16-34	$\leftrightarrow$	$\leftrightarrow$	
Diodes Inc.	Switching Diodes	14-54	$\leftrightarrow$	$\leftrightarrow$	
	Small Signal MOSFETS	32-48	$\leftrightarrow$	$\leftrightarrow$	
	Zener Diodes	16-38	⊻	$\leftrightarrow$	
	Bipolar Transistors	16-48	Ľ	$\leftrightarrow$	
	Digital Transistors	16-48	Ľ	$\leftrightarrow$	
	General Purpose Transistors	16-48	Ľ	$\leftrightarrow$	
	Logic	22-24	Ľ	$\leftrightarrow$	
	ESD	18-22	$\leftrightarrow$	$\leftrightarrow$	
EATON	Fuses	16-22	$\leftrightarrow$	SMA	
	Clips and Holders	14-18	$\leftrightarrow$	я	
Everlight	Optocoupler Components	32	Ľ	SMA	
	IGBTs	42-54	$\leftrightarrow$	$\leftrightarrow$	
Fairchild (ON Semiconductor)	Bridge Rectifiers	36-54	$\leftrightarrow$	$\leftrightarrow$	
	Rectifiers	52-58	$\leftrightarrow$	$\leftrightarrow$	
	Optocoupler Components	20-32	$\leftrightarrow$	$\leftrightarrow$	
	Low Voltage MOSFETS	28-56	Ľ	$\leftrightarrow$	
	High Voltage MOSFETS	52-56	$\leftrightarrow$	$\leftrightarrow$	
	IGBTs	42-52	$\leftrightarrow$	$\leftrightarrow$	
Infineon	Wide Bandgap Mosfets	44-54	$\leftrightarrow$	$\leftrightarrow$	
	Digital Transistors	14-54	$\leftrightarrow$	$\leftrightarrow$	
	General Purpose Transistors	14-54	$\leftrightarrow$	$\leftrightarrow$	
	Mil-Aero Transistors	20-48	$\leftrightarrow$	7	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Isocom Components	Optocoupler Components	4-6	$\leftrightarrow$	$\leftrightarrow$	
	High Voltage MOSFETS	52-56	$\leftrightarrow$	$\leftrightarrow$	
IXYS	IGBTs	52-56	$\leftrightarrow$	$\leftrightarrow$	
	Thyristors/Triacs	32-52	Ľ	SMA	
Keystone	Clips and Holders	12-18	$\leftrightarrow$	SMA	
Kyocera	Varistors	16-24	$\leftrightarrow$	$\leftrightarrow$	
Lite-On	Optocoupler Components	22-24	Ľ	$\leftrightarrow$	
	ESD	16-32	$\leftrightarrow$	$\leftrightarrow$	
	Diode Arrays	18-32	Ľ	SMA	
	Varistors	18-24	Ľ	$\leftrightarrow$	
	Wide Bandgan Mosfets	44-54	$\leftrightarrow$	$\leftrightarrow$	
Littalfuca		16-22	$\leftrightarrow$	SMA	
Littenuse	PTC Fuses	22-32	$\leftrightarrow$	$\leftrightarrow$	
	Clips and Holders	16-22	$\leftrightarrow$	$\leftrightarrow$	
	Thyristors/Triacs	20-32	Ľ	$\leftrightarrow$	
	TVS Diodes	22-32	Ľ	SMA	
	Sensors	18-32	$\leftrightarrow$	SMA	
	Low Voltage MOSFETS	18-22	Ľ	$\leftrightarrow$	
		19.76	V	⇔	
		10-20	-		
	ESD	18-22	$\leftrightarrow$	$\leftrightarrow$	
	TVS Diodes	18-22	$\leftrightarrow$	$\leftrightarrow$	
Micro Commercial Components	Schottky Diodes	12-22	$\leftrightarrow$	$\leftrightarrow$	
	Switching Diodes	12-22	$\leftrightarrow$	$\leftrightarrow$	
	Small Signal Mosfets	14-22	$\leftrightarrow$	$\leftrightarrow$	
	Zener Diodes	14-28	$\leftrightarrow$	$\leftrightarrow$	
	Bipolar Transistors	10-16	$\leftrightarrow$	$\leftrightarrow$	
	General Purpose Transistors	10-16	$\leftrightarrow$	$\leftrightarrow$	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
	High Voltage Mosfets	44-54	$\leftrightarrow$	7	
Microchip	Wide BandGap Mosfets	26-30	$\leftrightarrow$	$\leftrightarrow$	
	High Voltage MOSFETS	44-54	$\leftrightarrow$	$\leftrightarrow$	
Microsemi	IGBTs	44-54	$\leftrightarrow$	$\leftrightarrow$	
Wilciosetti	Mil-Aero Diodes	34-62	$\leftrightarrow$	7	
	Mil-Aero Transistors	34-62	$\leftrightarrow$	7	
	Low Voltage MOSFETS	50-54	$\leftrightarrow$	$\leftrightarrow$	
	ESD	14-42	$\leftrightarrow$	$\leftrightarrow$	
	Schottky Diodes	6-22	⊾	$\leftrightarrow$	
	Switching Diodes	10-52	Ľ	$\leftrightarrow$	
Nexperia	Small Signal MOSFETS	12-28	Ľ	$\leftrightarrow$	
	Zener Diodes	8-22	Ľ	$\leftrightarrow$	
	Bipolar Transistors	8-22	Ľ	$\leftrightarrow$	
	Digital Transistors	8-22	Ľ	$\leftrightarrow$	
	General Purpose Transistors	8-22	⊾	$\leftrightarrow$	
	Logic	8-10	$\leftrightarrow$	$\leftrightarrow$	
	Low Voltage MOSFETS	38-54	⊾	7	
	High Voltage MOSFETS	38-54	$\leftrightarrow$	7	
	ESD	22-52	$\leftrightarrow$	$\leftrightarrow$	
	Wide Bandgap Mosfets	44-54	$\leftrightarrow$	$\leftrightarrow$	
	Schottky Diodes	22-68	$\leftrightarrow$	$\leftrightarrow$	
	Rectifiers	50-55	$\leftrightarrow$	$\leftrightarrow$	
ON Semiconductor	Switching Diodes	22-68	$\leftrightarrow$	SMA	
	Small Signal MOSFETS	54-68	$\leftrightarrow$	↔ snaa	
	Zener Diodes	22-68	$\leftrightarrow$	SIVIA	
	Bipolar Transistors	22-68	$\leftrightarrow$	SIVIA	
	Digital Transistors	22-54	$\leftrightarrow$	SIVIA	
	General Purpose Transistors	22-54	$\leftrightarrow$	SIVIA	
	Logic	22-32	2	4	
ProTek Devices	Diode Arrays	14-18		7	
Renesas	Optocoupler Components	54	$\leftrightarrow$		
	High Voltage MOSFETS	44-54	$\leftrightarrow$	$\leftrightarrow$	
	Wide Bandgap Mosfets	44-54	$\leftrightarrow$	$\rightarrow$	
вонм	Schottky Diodes	18-54	$\leftrightarrow$	$\leftrightarrow$	
	Switching Diodes	22-54	$\leftrightarrow$	$\leftrightarrow$	
	Digital Transistors	22-54	$\leftrightarrow$	$\leftrightarrow$	
	General Purpose Transistors	22-54	$\leftrightarrow$	$\leftrightarrow$	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Schurter	Fuses Clins and Holders	22-42	7	7	
Semtech	Diode Arrays	22-32	$\leftrightarrow$	$\leftrightarrow$	
	Low Voltage MOSFETS	52-56	$\leftrightarrow$	$\leftrightarrow$	
	High Voltage MOSFETS	50-54	$\leftrightarrow$	$\leftrightarrow$	
	IGBTs	50-54	$\leftrightarrow$	$\leftrightarrow$	
	ESD	32-48	$\leftrightarrow$	$\leftrightarrow$	
ST Microelectronics	Wide Bandgap Mosfets	44-54	$\leftrightarrow$	$\leftrightarrow$	
	Thyristors/Triacs	18-20	$\leftrightarrow$	$\leftrightarrow$	
	TVS Diodes	32-42	$\leftrightarrow$	$\leftrightarrow$	
	Rectifiers	46-48	$\leftrightarrow$	$\leftrightarrow$	
	Bipolar Transistors	42-54	$\leftrightarrow$	$\leftrightarrow$	
TDK EPCOS	Varistors	18-32	$\leftrightarrow$	$\leftrightarrow$	
TE Connectivity	PTC Fuses	32-36	$\leftrightarrow$	$\leftrightarrow$	
	Low Voltage MOSFETS	36-62	Ľ	$\leftrightarrow$	
	High Voltage MOSFETS	54-68	$\leftrightarrow$	$\leftrightarrow$	
	TVS Diodes	12-26	Ľ	$\leftrightarrow$	
Vishay	Bridge Rectifiers	24-58	$\leftrightarrow$	$\leftrightarrow$	
	Rectifiers	14-18	$\leftrightarrow$	$\leftrightarrow$	
	Zener Diodes	20-62	Ľ	$\leftrightarrow$	
	Optocoupler Components	54+	7	SMA	



## Electromechanical

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Abracon	Timing	14-54+	Ľ	SMA	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
ADDA	Fans	22-26	$\leftrightarrow$	$\leftrightarrow$	
Alps Electric	Switches	26-34	я	$\leftrightarrow$	
American Zettler	Relays	18-54+	$\leftrightarrow$	$\leftrightarrow$	
Bivar	Hardware	12-18	$\leftrightarrow$	$\leftrightarrow$	
	Fans	14-16	я	я	
Boyd	Heatsinks	18-26	$\leftrightarrow$	я	
С&К	Switches	14-32	$\leftrightarrow$	$\leftrightarrow$	
Churod Electronics	Relays	10-32	$\leftrightarrow$	$\leftrightarrow$	
Citizen Finedevice	Timing	14-54	$\leftrightarrow$	$\leftrightarrow$	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
COSEL	Power Supplies (AC/DC)	50	я	$\leftrightarrow$	
	Power Supplies (DC/DC)	50	7	$\leftrightarrow$	
	Switches	10-12	$\leftrightarrow$	$\leftrightarrow$	
cts	Timing	14-54	$\leftrightarrow$	$\leftrightarrow$	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
	Power Supplies (AC/DC)	26-54+	7	$\leftrightarrow$	
CUI Inc	Power Supplies (DC/DC)	18-54+	Ľ	$\leftrightarrow$	
	Heatsinks	12-14	$\leftrightarrow$	$\leftrightarrow$	
Delta	Fans	42-54	я	я	
Diodes Inc	Timing	12-52	$\leftrightarrow$	$\leftrightarrow$	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	$\leftrightarrow$	$\leftrightarrow$	
ECS Inc.	Timing	16-54+	Ľ	SMA	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
EPSON Electronics America	Timing	28-42+	Ľ	$\leftrightarrow$	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
Essentra Components	Hardware	14-16	я	R	
Fox	Timing	12-42+	$\leftrightarrow$	л	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
Grayhill	Switches	22-26	$\leftrightarrow$	$\leftrightarrow$	
Неусо	Hardware	12-14	$\leftrightarrow$	$\leftrightarrow$	
Hongfa	Relays	18-54+	$\leftrightarrow$	SMA	
Infineon	Relays	42-54	$\leftrightarrow$	7	
IXYS	Relays	12-32	$\leftrightarrow$	$\leftrightarrow$	
Keystone	Hardware	14-16	$\leftrightarrow$	7	
Kyocera International	Timing	30	$\leftrightarrow$	$\leftrightarrow$	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	Ľ	7	
Microchip	Timing	14-28	$\leftrightarrow$	я	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
Murata	Timing	10-12	$\leftrightarrow$	$\leftrightarrow$	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	7	Я	
	Power Supplies (DC/DC)	22-42	7	7	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
NKK Switches	Switches	12-20	7	7	
NMB	Fans	40-52	$\leftrightarrow$	$\leftrightarrow$	
Ohmite	Fans	12-14	я	7	
Orion Fans	Fans	18-20	$\leftrightarrow$	$\leftrightarrow$	
Panasonic	Relays	16-32	$\leftrightarrow$	7	
	Switches	12-14	$\leftrightarrow$	$\leftrightarrow$	
Qualtek	Fans	22-26	$\leftrightarrow$	$\leftrightarrow$	
Raltron	Timing	12-42	$\leftrightarrow$	$\leftrightarrow$	Tuning Fortks-32.7668KHZ and 40-52+ weeks, TCXO's are on allocation due to AKM fire
RECOM	Power Supplies (AC/DC)	26-74+	7	$\leftrightarrow$	
RECOIVI	Power Supplies (DC/DC)	16-38	7	$\leftrightarrow$	
Rosenberg	Fans	18-20	$\leftrightarrow$	$\leftrightarrow$	
Schneider Electric	Relays	18-20	$\leftrightarrow$	$\leftrightarrow$	
Song Chuan	Relays	26-38	$\leftrightarrow$	$\leftrightarrow$	
SUNON	Fans	32-44	$\leftrightarrow$	$\leftrightarrow$	
TF Connectivity Sensors	Relays	14-16	$\leftrightarrow$	$\leftrightarrow$	All stable except the IM ready Series- allocation 52+ weeks
TE connectivity sensors	Switches	12-14	$\leftrightarrow$	$\leftrightarrow$	
Vicor	Power Supplies (AC/DC)	28-54	7	7	
	Power Supplies (DC/DC)	28-54	7	7	
Wakefield Thermal	Heatsinks	12-14	$\leftrightarrow$	$\leftrightarrow$	
Wall Industries	Power Supplies (AC/DC)	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Power Supplies (DC/DC)	10-12	$\leftrightarrow$	$\leftrightarrow$	
ZF Electronics	Switches	20-22	$\leftrightarrow$	7	



## High-End

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
AZ Displays	LCD's	22-26	Ľ	$\leftrightarrow$	
Compulab	SOM	30-40	$\leftrightarrow$	$\leftrightarrow$	
	8 bit MCU	28-54	$\leftrightarrow$	$\leftrightarrow$	
Cypress	32 bit MCU	28-54	Ľ	$\leftrightarrow$	
	USB	44-54	Ľ	$\leftrightarrow$	
	Automotive	34-48	$\leftrightarrow$	$\leftrightarrow$	
Formerica	Fibre Optic Transceivers	14-18	Ľ	$\leftrightarrow$	
Infineon	Automotive	Allocation	$\leftrightarrow$	$\leftrightarrow$	
iWave Systems	SOM	44	$\leftrightarrow$	$\leftrightarrow$	
Lattice Semiconductor	FPGA	30-44	Ľ	$\leftrightarrow$	
	8 bit MCU	38-54+	Ľ	$\leftrightarrow$	
Microchip	32 bit MCU	38-54+	Ľ	$\leftrightarrow$	
	PHY/ Ethernet	30-52	$\leftrightarrow$	$\leftrightarrow$	
	USB	44	Ľ	$\leftrightarrow$	
	32 bit MPU	32-54	$\leftrightarrow$	$\leftrightarrow$	
Microsemi	FPGA	34-44	Ľ	$\leftrightarrow$	
	8 bit MCU	38-54	Ľ	$\leftrightarrow$	
	32 bit MCU	28-54	Ľ	$\leftrightarrow$	
NXP	Automotive	38-54	$\leftrightarrow$	$\leftrightarrow$	
	32 bit MPU	34-54	Ľ	$\leftrightarrow$	
	Network Processors	28-44	Ľ	$\leftrightarrow$	
Renesas RA	32 bit MCU	20-26	ピ	$\leftrightarrow$	
	8 bit MCU	20-26	Ľ	$\leftrightarrow$	
Renesas	32 bit MCU	20-26	⊻	$\leftrightarrow$	
	Automotive	48	$\leftrightarrow$	$\leftrightarrow$	
	32 bit MPU	20-26	$\leftrightarrow$	$\leftrightarrow$	
Sharp	LCDs	40	Ľ	$\leftrightarrow$	
	8 bit MCU	38-54	Ľ	$\leftrightarrow$	
	Automotive	42-54	$\leftrightarrow$	$\leftrightarrow$	
	32 bit MPU	18-22	Ľ	$\leftrightarrow$	
	STM32F0- 32 bit MCU	18-22	Ľ	$\leftrightarrow$	
ST Microelectronics	STM32F1- 32 bit MCU	18-22	Ľ	$\leftrightarrow$	
	STM32L- 32 bit MCU	18-22	Ľ	$\leftrightarrow$	
	Balance 32 bit MCU	14-22	Ľ	$\leftrightarrow$	
	STM32F2/F4/F7/H7	38-50	Ľ	$\leftrightarrow$	
Zilog	8 bit MCU	26-42	7	$\leftrightarrow$	



## Interconnect

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Adam Tech	I/O Connectors	18-24	Ľ	$\Leftrightarrow$	
	PCB Connectors	18-24	Ľ	$\leftrightarrow$	
Altech Corp.	Terminal Blocks & Crimps	14	$\leftrightarrow$	$\leftrightarrow$	
	D-Sub Connectors	10-12	$\leftrightarrow$	$\leftrightarrow$	
Amphenol Communications	Data & Telecom	10-12	$\leftrightarrow$	$\leftrightarrow$	
Solutions	PCB Connectors	10-12	$\leftrightarrow$	$\leftrightarrow$	
	FFC/FPC	10-12	$\leftrightarrow$	$\leftrightarrow$	
Amphenol Sine System	Circular Connectors	26	Ľ	٦	
	Data & Telecom	22	$\leftrightarrow$	$\leftrightarrow$	
ASSMAN WSW Components	PCB Connectors	22	$\leftrightarrow$	$\leftrightarrow$	
	IC Sockets	22	$\leftrightarrow$	$\leftrightarrow$	
Bulgin	Circular Connectors	18-20	я	$\leftrightarrow$	
EDAC	PCB Connectors	16-24	$\leftrightarrow$	$\leftrightarrow$	
Global Connector Technology	PCB Connectors	10-12	$\leftrightarrow$	$\leftrightarrow$	
Construction recimology	FFC/FPC	10-12	$\leftrightarrow$	$\leftrightarrow$	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
HALO Electronics	Data & Telecom	10-22	Ľ	$\leftrightarrow$	
HARTING	PCB Connectors	12-14	$\leftrightarrow$	$\leftrightarrow$	
Hirose Electric	PCB Connectors	18-28	Ľ	$\leftrightarrow$	
	RF Connectors	18-28	Ľ	$\leftrightarrow$	
	FFC/FPC	18-28	Ľ	$\leftrightarrow$	
JST	PCB Connectors	18-46	Ľ	$\leftrightarrow$	
Mil-Max	PCB Connectors	6-8	$\leftrightarrow$	$\leftrightarrow$	
	IC Sockets	6-8	$\leftrightarrow$	$\leftrightarrow$	
Ouipiin	PCB Connectors	16-22	Ľ	$\leftrightarrow$	
Sullins	PCB Connectors	8-10	$\leftrightarrow$	$\leftrightarrow$	
	Automotive Connectors	28-32	Ľ	я	
	Circular Connectors	24-28	Ľ	7	
	Relays	38-42	7	$\leftrightarrow$	
	Data & Telecom	10-12	Ľ	$\leftrightarrow$	
TE Connectivity	PCB Connectors	14-18	Ľ	$\leftrightarrow$	
	RF Connectors	14-16	$\leftrightarrow$	$\leftrightarrow$	
	IC Sockets	8-10	$\leftrightarrow$	$\leftrightarrow$	
	Terminal Blocks & Crimps	22-26	$\leftrightarrow$	$\leftrightarrow$	
	Lighting Connectors	10-12	$\leftrightarrow$	7	
WAGO	Terminal Blocks & Crimps	16	$\leftrightarrow$	$\leftrightarrow$	
	Lighting Connectors	16	$\leftrightarrow$	$\leftrightarrow$	
	Terminal Blocks & Crimps	22	$\leftrightarrow$	$\Leftrightarrow$	



## Lighting Solutions & Opto

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Bridgelux	Chip On Board (CoB)	8-10	Ľ	$\leftrightarrow$	
Dialight	Indication LEDs 6V (LED Optics)	12-18 12-18	$\leftrightarrow \leftrightarrow$	⊼ ↔	
	Automotive LEDs (AEC-Q101 Certified)	10-12	$\leftrightarrow$	$\leftrightarrow$	
Everlight	Infrared Components/ LED Indication LEDs	16-18 16-18	ת ת	ת ת	
	UV LEDs	10-12	$\leftrightarrow$	$\leftrightarrow$	
Excellence Optoelectronics Inc.	Automotive LEDs (AEC-Q101 Certified)	10-12	$\leftrightarrow$	$\leftrightarrow$	
General Luminaire	Standard Light Engines (Level 2 Boards)	16-18	$\leftrightarrow$	$\leftrightarrow$	
Inolux	Indication LEDs	8-10	$\leftrightarrow$	$\leftrightarrow$	
Kingbright	LED Displays Indication LEDs	12-14 10-12	$\leftrightarrow \leftrightarrow$	↔ SMA	
	Infrared Components/ LED	16-18	$\leftrightarrow$	$\leftrightarrow$	
Lite-On	LED Displays	16-18	$\leftrightarrow$	$\leftrightarrow$	
	Indication LEDs	18-22	$\leftrightarrow$	$\leftrightarrow$	
Lumex	LED Displays Indication LEDs	18 10-16	$\leftrightarrow \leftrightarrow$	$\leftrightarrow \leftrightarrow$	
	Illumination High Power LEDs (White)	10-14	Ľ	SMA	
	Illumination High Power LEDs (Colors)	10-12	$\leftrightarrow$	SMA	
	Illumination High Power LEDs (White & Colors)	10-12	$\leftrightarrow$	SMA	
	Horitcultural Mid Power LEDs (White & Colors)	10-12	$\leftrightarrow$	$\leftrightarrow$	
Lumileds	Automotive LEDs (AEC-Q101 Certified)	18-20	$\leftrightarrow$	$\leftrightarrow$	
	Chip On Board (CoB)	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Standard Light Engines (Level 2 Boards)	20-28	$\leftrightarrow$	$\leftrightarrow$	
	Infrared Components/ LED	28	$\leftrightarrow$	$\leftrightarrow$	
	UV LEDs	14-18	Ľ	$\leftrightarrow$	
Meanwell	LED Drivers	12-22	Ľ	$\leftrightarrow$	
Murata	Lighting Controls	28-32	$\leftrightarrow$	7	



### Rebound Electronics

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
	Illumination High Power LEDs (White)	8-12	$\leftrightarrow$	$\leftrightarrow$	
Nichia	Illumination High Power LEDs (Colors)	8-12	$\leftrightarrow$	$\leftrightarrow$	
	Illumination High Power LEDs (White & Colors)	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Horitcultural Mid Power LEDs (White & Colors)	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Chip On Board (CoB)	14-16	$\leftrightarrow$	$\leftrightarrow$	
ROHM	Infrared Components/ LED Indication LEDs	8-10 12-14	$\leftrightarrow \leftrightarrow$	↔ ⊼	
	Illumination High Power LEDs (White)	8-10	$\leftrightarrow$	SMA	
	Illumination High Power LEDs (White & Colors)	10-12	$\leftrightarrow$	$\leftrightarrow$	
Samsung LED	Horitcultural Mid Power LEDs (White & Colors)	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Chip On Board (CoB)	8-10	$\leftrightarrow$	$\leftrightarrow$	
	Standard Light Engines (Level 2 Boards)	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Illumination High Power LEDs (White)	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Illumination High Power LEDs (White & Colors)	8-10	$\leftrightarrow$	$\leftrightarrow$	
Seoul Semiconductor	Horitcultural Mid Power LEDs (White & Colors)	8-10	$\leftrightarrow$	SMA	
	Chip On Board (CoB)	10-12	$\leftrightarrow$	$\leftrightarrow$	
	Standard Light Engines (Level 2 Boards)	12-14	$\leftrightarrow$	$\leftrightarrow$	
Seoul Viosys	UV LEDs	10-12	$\leftrightarrow$	$\leftrightarrow$	
Stanley Electric	LED Displays	14	$\leftrightarrow$	$\leftrightarrow$	
	Indication LEDs	12-14	$\leftrightarrow$	$\leftrightarrow$	
TE Connectivity	6A (Heat Sinks, LED Holders)	22-52	$\leftrightarrow$	$\leftrightarrow$	
TT Electronics- Optek Technology	Infrared Components/ LED	28-46	7	7	
vcc	Indication LEDs	14	$\leftrightarrow$	7	
	Infrared Components/ LED	10-22	Ľ	7	
Vishay	Indication LEDs	10-32	$\leftrightarrow$	7	
	UV LEDs	16-18	$\leftrightarrow$	$\leftrightarrow$	



## Memory

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
	Memory Modules	8-10	$\leftrightarrow$	SMA	
	eMMC	10-12	Ľ	SMA	
	Memory Cards	10-12	Ľ	SMA	
	Solid State Drives (SSD)	10-14	Ľ	SMA	
	PC (Commodity) DRAM	4-22	Ľ	SMA	
	Mobile RAM	14-18	$\leftrightarrow$	$\leftrightarrow$	
	SRAM	14-48	Ľ	$\leftrightarrow$	
Alliance Memory	NOR Flash	14-22	$\leftrightarrow$	$\leftrightarrow$	
	NAND Flash	10-26	Ľ	$\leftrightarrow$	
	eMMC	10-14	Ľ	$\leftrightarrow$	
Cypress	SRAM	14-54	Ľ	$\leftrightarrow$	
	NOR Flash	14-28	Ľ	7	
	FRAM & NVSRAM	14-28	Ľ	$\leftrightarrow$	
Everspin Technologies	MRAM	14-30	$\leftrightarrow$	7	
	NOR Flash	18-28	$\leftrightarrow$	$\leftrightarrow$	
Greenliant	eMMC	18-28	Ľ	$\leftrightarrow$	
Greenhant	Memory Cards	10-18	Ľ	SMA	
	Solid State Drives (SSD)	10-18	Ľ	SMA	
	PC (Commodity) DRAM	6-8	Ľ	SMA	
	Memory Modules	4-8	$\leftrightarrow$	SMA	
Kingston	eMMC	6-10	Ľ	SMA	
	Memory Cards	4-12	Ľ	SMA	
	Solid State Drives (SSD)	4-10	Ľ	SMA	
	NOR Flash	10-14	Ľ	SMA	
Macronix	NAND Flash	10-14	$\leftrightarrow$	SMA	
	eMMC	54-56	$\leftrightarrow$	7	Parts on allocation, MXIC is not quoting and not taking new orders for the time being



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
	SRAM	48-50	$\leftrightarrow$	7	
Microchip	NOR Flash	54-102	7	7	
	EEPROM	54-102	7	7	
	EPROM	14-28	$\leftrightarrow$	7	
	SRAM	22-42	$\leftrightarrow$	$\leftrightarrow$	
Onsemi	EEPROM	22-42	$\leftrightarrow$	$\leftrightarrow$	
	SRAM	22-24	Ľ	$\leftrightarrow$	
Renesas	NOR FLASH	22-42	Ľ	7	
	DATA FLASH	42-54	Ľ	$\leftrightarrow$	
	PC (Commodity) DRAM	54-56	$\leftrightarrow$	$\leftrightarrow$	
Samsung LED	Memory Modules	54-56	$\leftrightarrow$	SMA	Parts on allocation, Samsung is not quoting and not taking new orders
	eMMC	54-56	$\leftrightarrow$	$\leftrightarrow$	for the time being
	Solid State Drives (SSD)	54-56	$\leftrightarrow$	$\leftrightarrow$	
SkyHigh Memory	SLC NAND Flash	10-14	Ľ	SMA	
,,	eMMC	10-14	Ľ	SMA	
STMicroelectronics	EEPROM	26-28	Ľ	$\leftrightarrow$	Now on allocation



## Passives

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Apl Delevan	Inductors	16-20	$\leftrightarrow$	$\leftrightarrow$	
Cornell Dubilier Electronics	Electrolytic	32-52	$\leftrightarrow$	7	
	Capacitor	28-42	⊻	7	
стѕ	Resistor Networks	18-42	7	7	
Eaton	Capacitors- Supercapacitors	32-54+	$\leftrightarrow$	7	
	Inductors	22-32	Ľ	$\leftrightarrow$	
ELNA	Capacitors- Supercapacitors	32-54+	$\leftrightarrow$	$\leftrightarrow$	
HALO Electronics	Inductors	22-35	Ľ	$\leftrightarrow$	
	Filters	14-18	ピ	$\leftrightarrow$	
	Inductor / Transformers	14-22	$\leftrightarrow$	$\leftrightarrow$	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf) Surface Mount General Capacitors-	12-16	$\leftrightarrow$	7	
Murata	Ceramic (Greater than 1 uf)	12-14	⊾	7	
	Leaded Capacitors- Ceramic	18-20	$\leftrightarrow$	$\leftrightarrow$	
	Specialty Capacitors	18-20	$\leftrightarrow$	$\leftrightarrow$	
	Surface Mount General Capacitors	16-18	$\leftrightarrow$	7	
	Electrolytic	24-42	Ľ	$\leftrightarrow$	
	Filters	16-22	$\leftrightarrow$	$\leftrightarrow$	
	Inductors	16-22	$\leftrightarrow$	$\leftrightarrow$	
	Fixed Resistors	14-20	$\leftrightarrow$	$\leftrightarrow$	
NIC Components	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	20-22	$\leftrightarrow$	$\leftrightarrow$	
	(Greater than 1 uf)	18-20	$\leftrightarrow$	$\leftrightarrow$	
	Leaded Capacitors- Ceramic	28-30	$\leftrightarrow$	$\leftrightarrow$	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Nichicon	Electrolytic	26-28	Ľ	$\leftrightarrow$	
	Electrolytic	32-34	Ľ	$\leftrightarrow$	
	Capacitors- Polymer Tantalum	18	$\leftrightarrow$	$\leftrightarrow$	
Panasonic	Inductors / Transformers	24-30	$\leftrightarrow$	$\leftrightarrow$	
	Fixed Resistors	22-54	Ľ	$\leftrightarrow$	
	Resistor Networks	54+	7	$\leftrightarrow$	
Paktron Capacitors	Capactors- Film	14-18	$\leftrightarrow$	$\leftrightarrow$	
	Fixed Resistors	46-48	$\leftrightarrow$	7	
Samsung Electro-Mechanics	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	16-18	$\leftrightarrow$	$\leftrightarrow$	
	Surface Mount General Capacitors- Ceramic ( Greater than 1 uf )	18-20	$\leftrightarrow$	$\leftrightarrow$	
	Surface Mount General Capacitors-Ceramic *Automotive Upgrade	20-22	$\leftrightarrow$	$\leftrightarrow$	
Stackploe Electronics	Fixed Resistors	20-32	$\leftrightarrow$	$\leftrightarrow$	
Sumida	Inductors	28-42	$\leftrightarrow$	$\leftrightarrow$	
	Surface Mount General Capacitors- Ceramic ( Less than 1 uf )	20-22	$\leftrightarrow$	$\leftrightarrow$	
Taiyo Yuden	Surface Mount General Capacitors- Ceramic ( Greater than 1 uf )	32-36	$\leftrightarrow$	$\leftrightarrow$	
	Surface Mount General Capacitors-Ceramic *Automotive Upgrade	32-54	$\leftrightarrow$	$\leftrightarrow$	
	Filters	18-32	7	$\leftrightarrow$	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf )	20-22	$\leftrightarrow$	$\leftrightarrow$	
ток	Surface Mount General Capacitors- Ceramic ( Greater than 1 uf )	32-35	$\leftrightarrow$	$\leftrightarrow$	
	Surface Mount General Capacitors-Ceramic *Automotive Upgrade	32-54	$\leftrightarrow$	$\leftrightarrow$	
	Capacitors- Film	26-54+	$\leftrightarrow$	$\leftrightarrow$	
TDK EPCOS	Filters	42-58	7	$\leftrightarrow$	
	Inductors / Transformers	18-22	$\leftrightarrow$	$\leftrightarrow$	





MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
TT Electronics- BI Technologies	Trimmers & Pots	42-54	$\leftrightarrow$	$\leftrightarrow$	
TT Electronics- IRC	Fixed Resistors	22-54	7	7	
United Chemi-Con	Electrolytic	32-42	Ľ	$\leftrightarrow$	
Viking	Surface Mount General Capacitors- Ceramic ( Less than 1 uf ) Surface Mount General Capacitors- Ceramic ( Greater than 1 uf )	18-20 18	$\leftrightarrow \leftrightarrow$	$\leftrightarrow \leftrightarrow$	
	Trimmers & Pots	12-28	7	7	
	Capacitors- Film	22-32	$\leftrightarrow$	7	
	Capacitors- Supercapacitors	16-22	$\leftrightarrow$	$\leftrightarrow$	
	Capacitors- Tantalum Molded	22-26	Ľ	$\leftrightarrow$	
	Capacitors- Tantalum Conformals	26	$\leftrightarrow$	$\leftrightarrow$	
Vishay	Capacitors- Polymer Tantalum	22-26	$\leftrightarrow$	$\leftrightarrow$	
	Inductors / Transformers	14-22	$\leftrightarrow$	$\leftrightarrow$	
	Fixed Resistors	54+	$\leftrightarrow$	7	
	Surface Mount General Capacitors- Ceramic ( Less than 1 uf )	22-28	$\leftrightarrow$	$\leftrightarrow$	
	Leaded Capacitors- Ceramic	26-32	Ľ	$\leftrightarrow$	
	Specialty Capacitors	42-46	$\leftrightarrow$	$\leftrightarrow$	
WIMA	Capacitors- Film	22-28	Ľ	$\leftrightarrow$	
Wurth Elektronik	Inductors / Transformers	28-42	$\leftrightarrow$	$\leftrightarrow$	
	Fixed Resistors	16-18	$\leftrightarrow$	$\leftrightarrow$	
	Resistor Networks	16-18	$\leftrightarrow$	$\leftrightarrow$	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf )	18-20	Ľ	$\leftrightarrow$	
Yageo	Surface Mount General Capacitors- Ceramic ( Greater than 1 uf )	20-22	$\leftrightarrow$	$\leftrightarrow$	
	Surface Mount General Capacitors- Ceramic *Automotive Upgrade	16-18	$\leftrightarrow$	$\leftrightarrow$	

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