Rebound Electronics

Market Insight Q3 2021

General Market Insight

- Microsoft recently announced the release of OS Windows 11 to occur later this year. The minimum requirement for Window 11 is Intel's 8th Gen Coffee Lake or AMD's Zen Pinnacle Ridge.

- Pricing has dropped by 5-7% for PC DIMMs amidst lower demand, customers are postponing their allocation owing to IC gating issues, which suppliers think is the reason for the high supply.

- Pricing for UMC foundry devices would increase by up to 30% in Q3. Prices are also likely to rise at TSMC, Powerchip and Vanguard International Semiconductor.

- European semiconductor distribution tops 25% growth. The COVID-19 dent in the European semiconductor distribution market seems to be over. While Q1 was still negative, Q2/CY21 more than compensated for it and ended up with 25.2% growth to over EUR 2.3 billion combined distribution revenue of all DMASS members (semi only).

- The United States, Japan, India and Australia are likely to sign an agreement to take steps to build secure semiconductor chip supply chains when they meet in Washington for the Indo-Pacific Quad summit, this is according to a report from Japan's Nikkei newspaper. The move is aimed at reducing the dependence for semiconductor chips on an increasingly assertive China. The U.S. Senate has already approved by an overwhelming majority the legislation to provide a staggering $190 billion package to beef up the country's ability to compete with Chinese technology.

- 10 Japanese manufactures are set to propose a $3B investment expansion in the Philippines. Japanese companies have chosen the Philippines as the manufacturing site of their most competitive products, leveraging mostly on the country's high-quality human resources. Collectively, these companies represent $2.5 billion in investments, $6.9 billion in exports, and over 83,000 in total employment. These Japanese firms include Brother Industries, Canon Inc., Seiko Epson Corp., Terumo Corp., JMS Co., Ltd., ROHM Co., Ltd., Nidec Corp., Minebea Mitsumi Inc., Murata Manufacturing Co., Ltd., and IBIDEN Co., Ltd.

- Worldwide IC market forecast to top $500 billion in 2021. The IC market is expected to increase again next year and in 2023, when global IC revenues are expected to surpass USD 600 billion for the first time. Throughout the projection period, 5G connectivity, artificial intelligence, deep learning, virtual reality, and other developing applications in mobile, data centre and cloud-computer servers, automotive, and industrial markets, resulting in a robust IC market CAGR of 10.7% from 2020-2025.

- Rising demand strains on MLCC supply. The demand for consumer electronics, particularly 5G smartphones, laptops, and vehicles, is continuing to put a strain on MLCC supply. As a result of this lead times have grown across the board. These continued shortages are also resulting in price increases.

- Official pricing for memory continues to rise by 3-5%, and market pricing is following suit. This has resulted in demand becoming very flat and supply issues are believed to worsen in Q3, prolonging the memory shortages experienced over the past quarter.

- Nine UK companies have said that they would be willing to jointly acquire Welsh semiconductor manufacturer Newport Wafer Fab, should the UK government block a proposed acquisition by a Chinese owned company. The identities of the companies have not been disclosed. Newport Wafer Fab is the UK's largest chip factory but is significantly smaller than most modern fabs. The company has over a dozen UK government research contracts, including defense-related projects.

- Singapore looks to bolster chipmaking amid Taiwanese domination of industry. Money for semiconductor investments has increased in Singapore over the past year, but the country still trails far behind Taiwan and other Asian chipmaking players. According to Nikkei, Singapore has set a target for 2030 to increase its electronics manufacturing by 50% with an eye on semiconductor development. In order to reach its target, foreign direct investment is expected to play a large role, as per the report. Singapore hopes to further develop its semiconductor sector by improving chip design, wafer manufacturing, assembly and testing, research and development, and regional distribution, according to the report. The problem for Singapore is that the foundry market is dominated by Taiwan, South Korea, and China.

- Rising Covid cases in Malaysia could exacerbate chip shortages. Infineon Technologies AG, NXP Semiconductors NV and STMicroelectronics NV are all feeling the pressure of Malaysia’s increase in Covid cases—spurred by the Delta variant—which has seen the seven-day average jump from 5,000 in June to beyond 20,000. While Malaysia doesn’t hold the same importance in the semiconductor chain as Taiwan or South Korea, it is a significant location for chip testing and packaging. The processes are less automated than wafer fabrication, relying more on the human workforce. Electronics and electrical products account for 39% of the country’s total exports, according to data from the Ministry of Trade and Industry.

- Car production in the UK fell to its lowest level since 1956 last month as the industry was hit by a combination of staff and component shortages.

- The amount of time it’s taking for chip-starved companies to get orders filled has stretched to more than 20 weeks, indicating the shortages that have held back automakers and computer manufacturers are getting worse.

- IDC expects that the semiconductor industry will normalize and balance by the middle of 2022. The same report states that there is a "potential for overcapacity in 2023" for semiconductors. This overcapacity would be caused by semiconductor manufacturing efforts coming online by the end of 2022.

- More Shortages Seen for Silicon Wafers. Customers sign LTAs in the silicon wafer market, especially during peak times, to assure a long-term consistent supply of wafers.

- SUMCO, a Japanese semiconductor company, plans to raise $1.1 billion from new shares to expand its silicon wafer production. SUMCO is also considering adding production in Taiwan, which has the world's biggest concentration of chip foundries.

- According to the semiconductor supply chain, most other foundries have increased their foundry pricing for 8-inch wafers, in addition to TSMC and Samsung Electronics. The price of foundry will rise by at least 20% in 2021, and the price of urgent orders may rise by as much as 40%.

- Semiconductor shortage to further impact passenger vehicles (PVs) sales. Currently, these shortages have pushed some OEMs to reduce manufacturing, stretching the waiting periods of popular, feature-rich, and high-end models even more.

- The compound semiconductor market is set to grow by USD 11.53 billion, progressing at a CAGR of 6.33% during 2021-2025. The report offers an up-to-date analysis regarding the current market scenario, the latest trends and drivers, and the overall market environment.

Allegro Microsystems

- Allegro Microsystems issued a notice to its customers informing them that the prices of its entire product line would be raised beginning in October. The notice mainly includes the following:
    - Allegro will increase prices by a flat percentage in all product portfolios.
    - The price increase will take effect on October 1, 2021 and is applicable to new orders and existing backlogs.
    - Non cancellable and non-reschedulable terms will apply to all orders (new orders and existing orders) until further notice.

Bosch

- According to sources in the semiconductor supply chain, the local government ordered part of a Bosch supplier's chip production line in Muar, Malaysia, to be stopped until August 21 affecting the delivery of Bosch's ESP/IPB, VCU, TCU, and other parts. It is expected that the supply will be cut off after August.

Brady

- Average price increase of 3% ~ 7% - this may vary part to part. Price increase will take effect from October 1st, 2021.

Compal

- Compal plans to acquire Cal Comp USA (Indiana) through a 100% - owned reinvestment company. The aim is to strengthen the competitiveness of their car and electronics business. The deal will cost USD 8.13 million and will be finalized in the fourth quarter of 2021.

Infineon

- Due to a 20-minute power outage in Saxony's capital, Infineon Technologies had to cease manufacturing activities at its chip facility in Dresden, Germany.

Intel

- Intel breaks ground on two new leading-edge chip factories in Arizona.
  New $20 billion capacity expansion will bring Intel's total Arizona investment to more than $50 billion.

Jauch

- Jauch is seeing a normal 2-3 days air shipment and get delivered in around 2 weeks and a normal sea freight delivery of 4-6 weeks turn into 12-14 weeks.

Klauke

- 9.5% price increase on its lugs and connectors while 4.5% price increase on all other products, including tooling. Price increase will take effect from October 1st, 2021.

Littelfuse

- Littelfuse have announced with immediate affect a price increase on its Electronic Business Unit products, which also includes semiconductors, on September 1st, 2021.

Maxim Integrated

- Maxim Integrated officially joined in Analog Devices since August 26th, 2021. China's State Administration for Market Regulation has given antitrust clearance for Analog Devices' previously announced acquisition of Maxim.
- Due to a shortage of wafers, the delivery timeline for all Dallas parts has been extended to 60 weeks.
- Beginning August 22 2021, Maxim will apply a 6% pricing hike across the board. This price increase will take effect for new quotations and orders placed on or after August 22, 2021. Existing quoted backlog will see this price increase reflected on December 1, 2021.

Maxlinear

- From Q3'21 onwards, all scheduled shipments will be subject to a price increases on their relevant products.

Microchip

- Devices belonging to most Microchip business unit are affected by the price adjustment and the percentage adjustment varies by devices and clients. Microchip's September 1st Distributor Price Book will include the new pricing. Although Microchip will make no formal or public announcement, channel partners will notify the clients they serve.

Micron

- Micron vendors announced that SSD allocation for Q3 remains finite, and to anticipate prices to rise by 5~10%.
  Some customers are holding off on making purchases until prices improve.

Nexperia

- Nexperia has completed the acquisition of Newport Wafer Fab (NWF), which will help the firm achieve its expansion goals and increase worldwide manufacturing capacity. Nexperia now has 100% ownership of the Welsh semiconductor manufacturing facility as a result of the transaction.

Omron

- Omron will have various price changes over the next months. All special pricing requests and other pricing agreements are currently under review and any price changes required as a result of these reviews will be communicated during the next months.

Onsemi

- ON Semiconductor faces a continual challenge as a result of the current surge in demand. On Semiconductor will take the following efforts to further enhance supply chain stability:
  - Implement further targeted price increase, as necessary, in the most negatively impacted portfolios. Changes in pricing will be incorporated in the Q3 2021 pricing cycle, which has already begun as planned on July 10, 2021.
  - Firm order window will be changed to 120 calendar days before current MRSD for all products, effective since June 15, 2021. This means no order cancellation or order change inside 120 calendar days of current MRSD.
  - Negotiated Non-Cancellable Orders (NNCO) will be utilized, as necessary, where MRSD is outside the firm window.
- The lockdown would have a major effect on ON Semiconductor's regional operations in Malaysia, according to the company. The BD135, 137, and 139 series transistors have lead periods of up to 40 weeks, while the NCP3, NCP1, NCP5, NCP6 and NCP7 series controllers have lead times of up to 60 weeks.
- Price increases were announced in early October, which will affect both new orders and current backlogs. The price increase will directly affect the next cycle of distribution of price lists as well as direct and indirect customer pricing.

Schaffner

- Due to the following ongoing pandemic-related delays and closures, non-stop demand for ocean freight out of Asia, severe lack of capacity, on the top of being volatile and extremely elevated air and ocean rates, the Schaffner Supply Chain has established a “follow of the sun” approach. This is a 24h follow up over its global organization (Europe; Asia and US), to follow and secure the freight bookings with their leading preferred carriers’ partners.

STMicroelectronics

- ST brings Tower Semi on board for fab being built in Italy. ST and Tower will join forces for an accelerated fab ramp-up, a key factor to reach a high utilisation level and therefore a competitive wafer cost. The fab is expected to be ready for equipment installation later this year and start production in the second half of 2022.
- Price increases will be implemented across all of its product lines, including existing backlog, beginning in the fourth quarter of 2021.

Taiyo Yuden

- The industrial factory of Taiyo Yuden in Malaysia was shut down from June 1 to 14th after workers tested positive for COVID. While activities have restarted, outbound shipments are currently two weeks behind schedule. The Malaysia plant mainly produces commercial MLCCs and its lead time is currently 16 weeks. Both commercial and automotive grade parts are facing tight allocation.

Texas Instruments

- Price increase notice effective from September 15th, 2021

TSMC

- The industrial factory of Taiyo Yuden in Malaysia was shut down from June 1 to 14th after workers tested positive for COVID. While activities have restarted, outbound shipments are currently two weeks behind schedule. The Malaysia plant mainly produces commercial MLCCs and its lead time is currently 16 weeks. Both commercial and automotive grade parts are facing tight allocation.

Wago

- All products will have 8% price increase which will take effect from October 1, 2021.

Western Digital

- Western Digital would acquire Kioxia for US$ 20 billion and the deal is likely to be concluded next month. Once Western Digital acquires Kioxia, the global NAND market will be led by Samsung Electronics, Western Digital and SK Hynix and the runner-up will be able to narrow its market share gap with Samsung Electronics to 0.8 % or so.

Winbond

- Winbond's production capacity in the third quarter was in short supply and the fourth quarter is expected to be the same. Pei Ming Chen, president of Winbond, emphasized that the overall market demand is extremely strong. Even if new capacity is released in the DRAM market next year, it will be for DDR4 or DDR5. The demand for DDR3 will not decrease any time soon. In addition, Arthur Chiao revealed that after Winbond's new fab in Kaohsiung has been put into operation, the annual output would increase by 15~20% allowing the company to satisfy additional customer demands.

Xilinx

- Xilinx will raise its prices on all existing and future orders, all quotations, and all shipments made on or after November 1st, 2021. All Versal series will have a 10% price increase, while all other goods will get a 20% price increase.

Yageo

- According to Yageo and Chilisin Electronics, in a stock-swap deal, Yageo will acquire all Chilisin's outstanding shares of common stock. Both businesses' boards of directors have unanimously approved the transaction. The two parties are expected to hold an extraordinary general meeting on September 7th, 2021, to approve the proposal. The transaction, which is expected to close on December 30th, 2021, is however still subject to customary closing conditions and the receipt of required regulatory approvals. After this transaction, Chilisin will become a wholly owned subsidiary of Yageo and will be delisted and void its public issues.

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ANALOG		PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Amplifiers & Comparators		↑	↑	26+
Standard	Analog Interface	↑	↑	26+
	Power Management	↑	↑	26+
	Converters	↑	↑	26+

MPU/MCU		PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
MPU		↑	↑	26++
MCU	8 Bit & Lower	↑	↑	26++
	16 Bit	↑	↑	26+
	32 Bit & Higher	↑	↑	26++
DSP		↑	↑	16+

PROGRAMMABLE LOGIC	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
	↑	↑	26++

STANDARD LOGIC	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Timing Products	↑	↑	16+
Interface	↑	↑	16+
Connectivity	↑	↑	16+
Standard Logic	↑	↑	26+

POWER	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
FET	↑	↑	26++
IGBT	↑	↑	26+
Rectifier	↑	↑	26++
Other Power	↑	↑	26++

MEMORY	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Flash	↑	↑	26+
eMMC	↑	↑	16+
EEPROM	↑	→	26++
DRAM	↑	↑	26+
SRAM	↑	↑	9-16
Solid State Drives	↑	↑	16+

SENSORS	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
	→	→	26++

OPTO	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
LEDs (Low Power)	→	↑	9-16
LEDs (Mid Power)	→	↑	9-16
LEDs (High Power)	→	↑	9-16
Couplers	↑	↑	16+
Fibre-Optic	↑	↑	16+
Infrared	↑	↑	16+
Other Opto	↑	↑	16+

DISCRETE	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Small Signal	↑	↑	26+
RF	↑	↑	26+

↔	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	Analog	10-40	↔	↗	
BOSCH	Sensors	32-54	↗	↔	
DIODES	Multi- Source Analog/Power	16-38	↗	↗	
	Switching Regulators	16-38	↗	↗	
FTDI Chip	Interface	20-42	↗	↗	
Infineon	Sensors	20-54	↗	↗	
	Switching Regulators	22-54+	↗	↗	
	Analog and Power for Automotive (CAN/LIN/Smart FET)	48-54	↗	↗	
Maxim Integrated	Signal Chain Amplifiers	12-22	↗	↔	**Maxim updates lead time often to keep up with market changes**
	Interface	12-22	↗	↗	
	Switching Regulators	8-30	↗	↗	
Maxlinear	Interface	42-54	↗	↗	
Melexis	Sensors	18-54	↗	↗	
Microchip	Signal Chain (Amplifiers and Data Converters)	32-42	↗	↗	
	Timing	22	↗	↗	
	Switching Regulators	18-54	↗	↗	
MPS	Switching Regulators	52-60	↗	↗	

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
NXP	Sensors	18-54	↗	↗	
	Interface	38-54	↗	↗	
	Analog and Power for Automotive (CAN/LIN/Smart FET)	48-54	↗	↗	
Omron	Sensors	36	↗	↗	Longer lead time
ON Semiconductor	Sensors	20-54	↗	↗	
	Signal Chain (Amplifiers and Data Converters)	38-44	↗	↗	
	Timing	22-26	↗	↗	
	Multi- Source Analog/Power	16-38	↗	↗	
	Switching Regulators	16-38	↗	↗	
Panasonic	Sensors	18-28	↗	↔	
3PEAK	Signal Chain (Amplifiers and Data Converters)	16-20	↔	↗	
Renesas	Signal Chain (Amplifiers and Data Converters)	42-52	↗	↗	
	Timing	52	↔	↗	
	Interface	42-52	↗	↔	
	Switching Regulators	42-52	↗	↗	
ROHM	Sensors	18-42	↗	↔	
	Switching Regulators	32	↗	↔	
ST Microelectronics	Sensors	28-36	↗	↗	
	Signal Chain (Amplifiers and Data Converters)	38-46	↗	↗	
	Multi- Source Analog/Power	14-26	↗	↗	
	Switching Regulators	14-28	↗	↗	
	Analog and Power for Automotive (CAN/LIN/Smart FET)	42-54	↗	↗	
TE Sensor Solutions	Sensors	18-32	↔	↔	
Vishay	Sensors	18-34	↔	↔	

Batteries

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
Energizer	Alkaline	12-14	↔	↔	
	Lithium Metal	14-16	↔	↔	
	Silver Oxide	10-12	↔	↔	
GP Batteries	Alkaline	16-18	↔	↔	
	Lithium Metal	18-20	↔	↔	
	Lithium Ion	18-20	↔	↔	
	Nickle Metal Hydride	12-14	↔	↔	
	Lead Acid	10-12	↔	↔	
	Carbon Zinc	10-12	↔	↔	
Panasonic	Alkaline	12-14	↔	↔	
	Lithium Metal	24-26	↔	↔	
	Nickle Metal Hydride	10-12	↔	↔	
	Lead Acid	14-16	↔	↗	
	Carbon Zinc	10-12	↔	↔	
Renata Batteries	Lithium Metal	18-20	↗	↔	
	Lithium Ion	20-22	↔	↔	
	Nickle Metal Hydride	12-14	↔	↔	
	Silver Oxide	10-12	↔	↔	
	Carbon Zinc	10-12	↔	↔	
VARTA	Alkaline	12-14	↔	↔	
	Lithium Metal	20-26	↔	↗	
	Lithium Ion	34-40	↔	↔	
	Nickle Metal Hydride	12-14	↔	↔	

Connectivity

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
AMS	RFID	30-32	↗	↔	
AVX	Antennas	10-12	↔	↔	
CEL	802.15.4/Zigbee Modules	28	↗	↗	
	Small Signal, Schottky Diodes, PIN Diodes,Bipolar Transistors,FETs/PHEMTs,Amplifiers,Mixers & Modulators, VCOs, SS Bipolar Transistors,Wideband Transistors	20-22	↔	↔	
Cypress	Bluetooth Modules	28-32	↗	↗	Cypress is now Infineon
Laird Connectivity	Wi-Fi Modules	38-42	↗	↗	
	Antennas	18-22	↗	↗	
Linx Technologies	Cellular Modules	8-12	↔	↔	
	Antennas	12-14	↗	↗	
	Transceivers/Receivers	8-12	↗	↗	
Melexis	Transceivers/Receivers	18	↔	↔	
	RFID	16-18	↔	↔	
Microchip	Wi-Fi Modules	26-28	↗	↗	
	Bluetooth Modules	26-28	↗	↗	
	Transceivers/Receivers	20-22	↔	↗	
Murata	Wi-Fi Modules	28-32	↗	↔	
	Bluetooth Modules	54-60	↗	↗	

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
NXP	Multi-Protocol/Chip Solutions	54	↗	↗	
	Transceivers/Receivers	26	↔	↗	
	RFID	54	↗	↗	Parts on allocation
	High Power IC's	54	↗	↗	
ON Semiconductor	Bluetooth Modules	18-32	↗	↗	
Panasonic	Bluetooth Modules	42	↗	↔	
	RFID	16-18	↔	↔	
Pulse Electronics	Antennas	10-12	↔	↔	SX1243IULTRT is on 40 weeks lead time
Semtech	Transceivers/Receivers	22	↗	↔	
Sierra Wireless	Multi-Protocol/Chip Solutions	26-28	↗	↔	
	Cellular Modules	28+	↗	↗	Certain devices are affected by AKM. LT's undertermined
Silex Technology	Wi-Fi Modules	26-30	↗	↗	
ST Microelectronics	Bluetooth Modules	32-42	↗	↗	
	Transceivers/Receivers	54	↗	↗	
	RFID	22-28	↗	↗	
Taoglas	Antennas	12-14	↔	↗	
U-Blox	Bluetooth Modules	28-54	↗	↔	
	Cellular Modules	54	↗	↗	Parts are on allocation
	GPS	28-32	↗	↗	Increased in pricing on some GPS modules

Discrete

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Alpha Power Solutions	SiC Diode	16	↗	↗	
	SiC MOSFETS	16	↗	↗	
AVX	Varistors	18-22	↔	↗	
CEL	Optocoupler Components	22	↔	↔	
Diodes Inc.	Low Voltage MOSFETS	44-54	↗	↗	
	TVS Diodes	32-38	↗	↔	
	Bridge Rectifiers	20-42	↗	↗	
	Schottky Diodes	18-54	↗	↗	
	Rectifiers	20-78	↗	↗	
	Switching Diodes	18-54	↗	↗	
	Small Signal MOSFETS	18-54	↗	↗	
	Zener Diodes	18-42	↗	↗	
	Bipolar Transistors	18-54	↗	↗	
	Digital Transistors	18-42	↗	↗	
	General Purpose Transistors	14-54	↗	↗	
	Logic	20-32	↗	↗	
EATON	ESD	14-16	↗	↗	
	Fuses	16-22	↗	↗	
	Clips and Holders	14-18	↔	↗	
Everlight	Optocoupler Components	26	↗	↗	
Fairchild (ON Semiconductor)	Low Voltage MOSFETS	44-54	↗	↗	
	High Voltage MOSFETS	28-38	↗	↗	
	IGBTs	28-54	↗	↗	
	Bridge Rectifiers	14-42	↗	↗	
	Schottky Diodes	18-54	↗	↗	
	Rectifiers	16-54	↗	↗	
	Switching Diodes	10-54	↗	↗	
	Small Signal MOSFETS	18-54	↗	↗	
	Zener Diodes	18-54	↗	↗	
	Bipolar Transistors	14-54	↗	↗	
	Optocoupler Components	32-52	↗	↗	
Goford Semiconductor	Low Voltage MOSFETS	16	↗	↔	
	Medium Voltage MOSFETS	16	↗	↔	
	High Voltage MOSFETS	20	↔	↔	No active parts at the moment
Hollyfuse	Fuses	12-14	↔	↔	

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Infineon	Low Voltage MOSFETS	42-54	↗	↗	
	High Voltage MOSFETS	28-42	↗	↗	
	IGBTs	42-52	↗	↗	
	Wide Bandgap Mosfets	38-52	↗	↗	
	Digital Transistors	14-54	↗	↗	
	General Purpose Transistors	14-54	↗	↗	
	Mil-Aero Transistors	32-52	↗	↗	
Isocom Components	Optocoupler Components	4-6	↔	SMA	
IXYS	High Voltage MOSFETS	32-42	↗	↗	
	IGBTs	32-42	↗	↗	
	Thyristors/Triacs	32-42	↗	↗	
Keystone	Clips and Holders	12-18	↗	SMA	
Lite-On	Optocoupler Components	26-32	↗	↔	
Littelfuse	ESD	32-50	↗	↗	
	Diode Arrays	32-50	↗	↗	
	Varistors	22-36	↗	↔	
	Wide Bandgap Mosfets	28-38	↗	↗	
	Fuses	16-28	↗	↗	
	PTC Fuses	20-28	↗	↗	
	Clips and Holders	12-22	↔	↗	
	Thyristors/Triacs	22-26	↗	SMA	
	TVS Diodes	30-38	↗	↗	
	Sensors	18-32	↗	↗	
Micro Commercial Components	Schottky Diodes	22-34	↗	↔	
	Switching Diodes	22-34	↗	↔	
	Zener Diodes	14-34	↗	↔	
	General Purpose Transistors	18-42	↗	↔	

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Microsemi	High Voltage MOSFETS	32-42	↗	↗	
	IGBTs	42-54	↗	↗	
	Mil-Aero Diodes	34-58	↗	↗	
	Mil-Aero Transistors	34-62	↗	↗	
Nexperia	Low Voltage MOSFETS	44-54	↗	↗	
	ESD	18-52	↗	↗	
	Schottky Diodes	18-54	↗	↗	
	Switching Diodes	18-54	↗	↗	
	Small Signal MOSFETS	18-54	↗	↗	
	Zener Diodes	18-54	↗	↗	
	Bipolar Transistors	18-54	↗	↗	
	Digital Transistors	18-54	↗	↗	
	General Purpose Transistors	18-54	↗	↗	
	Logic	42-52	↗	↗	
ON Semiconductor	Low Voltage MOSFETS	44-54	↗	↗	
	ESD	22-52	↗	↗	
	Wide Bandgap Mosfets	38-52	↗	↗	
	Schottky Diodes	18-54	↗	↗	
	Rectifiers	10-54	↗	↗	
	Switching Diodes	18-54	↗	↗	
	Small Signal MOSFETS	18-54	↗	↗	
	Zener Diodes	18-54	↗	↗	
	Bipolar Transistors	18-54	↗	↗	
	Digital Transistors	18-54	↗	↗	
	General Purpose Transistors	18-54	↗	↗	
	Logic	32-52	↗	↗	
ProTek Devices	Diode Arrays	14-18	↗	↗	
Renesas	Optocoupler Components	48	↗	↗	
ROHM	High Voltage MOSFETS	28-32	↗	↔	
	Wide Bandgap Mosfets	28-38	↗	↔	
	Schottky Diodes	14-54	↗	↔	
	Switching Diodes	14-54	↗	↔	
	Digital Transistors	16-54	↗	↔	
	General Purpose Transistors	14-54	↗	↔	

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Schurter	Fuses	14-22	↔	↔	
	Clips and Holders	14-18	↔	↗	
Semtech	Diode Arrays	22-24	↗	↔	
	Mil-Aero Diodes	42-52	↗	↔	
ST Microelectronics	Low Voltage MOSFETS	44-54	↗	↗	
	High Voltage MOSFETS	28-38	↗	↔	
	IGBTs	38-44	↗	↗	
	ESD	22-42	↗	↗	
	Wide Bandgap Mosfets	32-42	↗	↗	
	Thyristors/Triacs	44-54	↗	↗	
	TVS Diodes	32-42	↗	↗	
	Rectifiers	40-42	↗	↗	
	Bipolar Transistors	22-42	↗	↗	
Taiwan Semiconductor	Low Voltage MOSFETS	44-54	↗	↗	
	ESD	22-52	↗	↗	
	Wide Bandgap Mosfets	38-52	↗	↗	
	Schottky Diodes	18-54	↗	↗	
	Rectifiers	10-54	↗	↗	
	Switching Diodes	18-54	↗	↗	
	Small Signal MOSFETS	18-54	↗	↗	
	Zener Diodes	18-54	↗	↗	
	Bipolar Transistors	18-54	↗	↗	
	Digital Transistors	18-54	↗	↗	
	General Purpose Transistors	18-54	↗	↗	
	Logic	32-52	↗	↗	
TDK EPCOS	Varistors	24-30	↗	↔	
TE Connectivity	PTC Fuses	22-32	↗	↗	
Vishay	Low Voltage MOSFETS	44-54	↗	↗	
	High Voltage MOSFETS	42-52	↗	↗	
	TVS Diodes	32-48	↗	↗	
	Bridge Rectifiers	28-84	↗	↗	
	Rectifiers	38-74	↗	↗	
	Zener Diodes	22-42	↗	↗	
	Optocoupler Components	26-42	↗	↗	

Electromechanical

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
AVX	Timing	14-16	↔	↗	
Aavid	Fans	14-16	↔	↗	
	Heatsinks	14-16	↔	↗	
Abracon	Timing	14-54+	↗	SMA	
ADDA	Fans	16-18	↔	↗	
Alps Electric	Switches	14-26	↗	↔	
American Zettler	Relays	14-54+	↗	SMA	
Bivar	Hardware	8-10	↔	↔	
C&K	Switches	14-32	↗	↗	
Citizen Finedevice	Timing	14-54	↗	↗	
COSEL	Power Supplies (AC/DC)	14-22	↗	↔	
	Power Supplies (DC/DC)	14-18	↗	↔	
CTS	Switches	10-12	↔	↔	
	Timing	14-20	↗	↗	
CUI Inc	Power Supplies (AC/DC)	18-26	↗	↔	
	Power Supplies (DC/DC)	16-20	↔	↔	
	Heatsinks	12-14	↔	↔	
Delta	Fans	42	↗	↔	
Diodes Inc	Timing	12-52	↗	↔	

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
E-Switch	Switches	**12-14**	↔	↗	
EPSON Electronics America	Timing	**42+**	↗	↗	
Fox	Timing	**12-42+**	↗	↗	
Grayhill	Switches	**18-20**	↗	↔	
Heyco	Hardware	**8-10**	↔	↔	
Hongfa	Relays	**18-54+**	↗	↔	**Longer lead time on odd relay series**
Infineon	Relays	**20-24**	↔	↔	
IXYS	Relays	**12-32**	↗	↔	
Keystone	Hardware	**6-8**	↔	↗	
Kyocera International	Timing	**30**	↗	↔	
Meanwell	Power Supplies (AC/DC)	**20-34**	↗	↗	
Mornsun	Power Supplies (AC/DC)	**6-12**	↗	↗	
	Power Supplies (DC/DC)	**6-12**	↗	↗	
Murata	Timing	**10-12**	↔	↔	
Murata Power Solutions	Power Supplies (AC/DC)	**28-34**	↗	↗	
	Power Supplies (DC/DC)	**14-20**	↗	↔	

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Myrra	Power Supplies (AC/DC)	**20-28**	↗	↗	**Extended lead time and all ranges are in shortage**
NKK Switches	Switches	**12-20**	↔	↗	
NMB	Fans	**16-18**	↗	↔	
Ohmite	Fans	**12-14**	↗	↗	
Omron	Sensors	**36**	↗	↗	
	Switches	**22+**	↔	↔	
Panasonic	Relays	**16-38**	↔	↔	
	Switches	**12-14**	↔	↔	
Qualtek	Fans	**16-18**	↔	↔	
Ralton	Timing	**12-42**	↔	SMA	
RECOM	Power Supplies (AC/DC)	**20-26**	↗	↗	
	Power Supplies (DC/DC)	**16-26**	↔	↗	
Schneider Electric	Relays	**16-18**	↔	↔	
Song Chuan	Relays	**26-62**	↗	↔	
SUNON	Fans	**18-28**	↗	↗	
TE Connectivity Sensors	Relays	**14-16**	↔	↔	
	Switches	**12-14**	↔	↔	
Vicor	Power Supplies (AC/DC)	**28-34**	↗	↗	
	Power Supplies (DC/DC)	**28-34**	↗	↗	

High-End

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Compulab	SOM	**22**	↗	↗	
Cypress	8 bit MCU	48	↗	↔	
	32 bit MCU	48	↗	↔	
	USB	34-54	↗	↗	
	Automotive	22-26	↔	↔	
DKE	E-paper Display	52-75	↗	↗	**Virtually no capacity until 2023**
Formerica	Fibre Optic Transceivers	**20-22**	↗	↔	
Infineon	Automotive	34-48	↗	↔	
Lattice Semiconductor	FPGA	36-38	↗	↗	
Microchip	8 bit MCU	32-58	↗	↗	
	32 bit MCU	42-58	↗	↗	
	PHY/ Ethernet	32-54	↗	↗	
	USB	32-54	↗	↗	
	32 bit MPU	32-54	↗	↗	
Microsemi	FPGA	36-54	↗	↗	
	PHY/ Ethernet	32-54	↗	↗	
NXP	8 bit MCU	28-54	↗	↗	
	32 bit MCU	28-54	↗	↔	
	Automotive	**Allocation**	↗	↗	
	32 bit MPU	26-54	↗	↗	
	Network Processors	20-54	↗	↗	
Raystar	LCDs	24	↗	↗	
Renesas	8 bit MCU	28	↗	↗	
	32 bit MCU	28	↗	↔	
	Automotive	32	↔	↔	
	32 bit MPU	32	↔	↗	
Renesas Synergy	32 bit MCU	28	↗	SMA	
Sharp	LCDs	42-46	↗	↗	
ST Microelectronics	8 bit MCU	**Allocation**	↗	↗	
	Automotive	**Allocation**	↗	↗	
	32 bit MPU	22-28	↗	↗	
	STM32F0- 32 bit MCU	**Allocation**	↔	↗	
	STM32F1- 32 bit MCU	**Allocation**	↔	↗	
	STM32L- 32 bit MCU	38-54	↗	↗	
Zilog	8 bit MCU	26-42	↗	↗	

Interconnect

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Adam Tech	D-Sub Connectors	16-18	↗	↗	
	PCB Connectors	16-18	↗	↗	
Altech Corp.	Terminal Blocks & Crimps	8-10	↔	↗	
Amphenol ICC	D-Sub Connectors	10-12	↔	↗	
	Data & Telecom	10-12	↔	↗	
	PCB Connectors	10-12	↔	↗	
	FFC/FPC	10-12	↔	↗	
Amphenol Sine System	Circular Connectors	22	↗	↗	
AVX	Lighting Connectors	12-14	↔	↔	
Connfly	PCB Connectors	12-14	↔	↔	
Degson	Terminal Blocks & Crimps	20	↔	↔	
EDAC	PCB Connectors	12-16	↗	↗	
Greenconn Technology	PCB Connectors	4	↔	↔	

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
HALO Electronics	Data & Telecom	**32**	↗	↗	
HARTING	PCB Connectors	**12-14**	↗	↗	
Hirose Electric	PCB Connectors	**14-16**	↗	↗	
	RF Connectors	**12-16**	↗	↗	
	FFC/FPC	**14-16**	↗	↗	
JST	PCB Connectors	**24-42**	↗	↗	
Mil-Max	PCB Connectors	**8-10**	↔	↔	
	IC Sockets	**8-10**	↔	↔	
Omron	PCB Connectors	**22+**	↔	↔	**Extended lead time**
Sullins	PCB Connectors	**8-10**	↔	↔	
TE Connectivity	Automotive Connectors	**32-42**	↗	↔	**Price increases effective since July 5th 2021**
	Circular Connectors	**30-32**	↔	↗	
	Relays	**38-40**	↙	↔	
	D-Sub Connectors	**10-12**	↔	↔	
	Data & Telecom	**10-12**	↔	↔	
	PCB Connectors	**18-20**	↔	↔	
	RF Connectors	**14-16**	↔	↗	
	IC Sockets	**8-10**	↔	↔	
	Terminal Blocks & Crimps	**16-18**	↔	↔	
	Lighting Connectors	**10-12**	↔	↗	
WAGO	Terminal Blocks & Crimps	**10-12**	↗	↗	
	Lighting Connectors	**10-12**	↗	↗	
WECO	Terminal Blocks & Crimps	**14-18**	↗	↗	

Opto/Lighting

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

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Nichia	Illumination High Power LEDs (White)	14-16	↙	↔	
	Illumination High Power LEDs (Colors)	14-16	↙	↔	
	Illumination High Power LEDs (White & Colors)	16-18	↙	↔	
	Horitcultural Mid Power LEDs (White & Colors)	14-16	↙	↔	
	Chip On Board (CoB)	14-16	↙	↗	
Raystar	OLEDs	36	↗	↗	
	TFT Displays	36	↗	↗	
ROHM	Infrared Components/ LED	8-10	↔	↔	
	Indication LEDs	12-14	↔	↔	
Samsung LED	Illumination High Power LEDs (White)	14-16	↙	↔	
	Illumination High Power LEDs (White & Colors)	10-22	↙	↗	
	Horitcultural Mid Power LEDs (White & Colors)	16-18	↙	↔	
	Chip On Board (CoB)	14-16	↙	↔	
	Standard Light Engines (Level 2 Boards)	12-14	↗	↔	
Seoul Semiconductor	Illumination High Power LEDs (White)	12-14	↔	↔	
	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	↗	↔	
Seoul Viosys	UV LEDs	10-12	↗	↔	
Stanley Electric	LED Displays	14	↔	↔	
	Indication LEDs	12-14	↔	↔	
SunLed	LED Displays	14	↔	↔	
Team Source	TFT Displays	30-40	↗	↗	
TE Connectivity	6A (Heat Sinks, LED Holders)	14-22	↔	↔	
TT Electronics- Optek Technology	Infrared Components/ LED	18-22	↗	↔	
VCC	Indication LEDs	14	↔	↗	
Vishay	Infrared Components/ LED	22-54	↗	↗	
	Indication LEDs	22-54	↗	↗	
	UV LEDs	16-18	↗	↔	

Memory

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
ADATA	Memory Modules	12-14	↔	↔	
	eMMC	14-18	↔	↔	
	Memory Cards	12-14	↔	↔	
	Solid State Drives (SSD)	10-14	↗	↗	
Adesto Technologies	NOR Flash	20-42	↔	↗	
	DATA Flash	42-54	↔	↔	
Alliance Memory	PC (Commodity) DRAM	22-28	↔	↔	
	Mobile DRAM	28-32	↗	↔	
	SRAM	16-28	↔	↔	
	NOR Flash	18-22	↔	↔	
Cypress	SRAM	14-42	↔	↗	
	NOR Flash	22-54	↔	↗	
	FRAM & NVSRAM	18-38	↔	↗	
Everspin Technologies	MRAM	14-30	↔	↔	
Greenliant	NOR Flash	20-30	↔	↔	
	eMMC	24-26	↔	↔	
	Memory Cards	20-28	↗	↔	
	Solid State Drives (SSD)	20-28	↗	↗	
Kingston	PC (Commodity) DRAM	10-12	↔	↗	
	Mobile DRAM	54+	↔	↔	Kingston LPDDR4 is EOL
	Memory Modules	10-12	↔	↔	
	eMMC	12-14	↔	↔	
	Memory Cards	8-42	↔	↔	
	Solid State Drives (SSD)	10-14	↗	↗	
Macronix	NOR Flash	30-34	↗	↗	
	SLC NAND Flash	30-34	↗	↗	
	eMMC	54-56	↗	↗	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	NOR Flash	14-26	↔	↔	
	EEPROM	14-54	↔	↔	
	EPROM	14-22	↔	↔	
Micron	PC (Commodity) DRAM	54-56	↗	↗	
	Memory Modules	54-56	↗	↗	
	eMMC	54-56	↗	↗	
	Solid State Drives (SSD)	54	↗	↗	
ON Semiconductor	EEPROM	10-22	↔	↗	
Renesas	SRAM	22-24	↔	↔	
Samsung	PC (Commodity) DRAM	54-56	↗	↗	
	Memory Modules	54-56	↗	↗	Parts on allocation, Samsung is not quoting and not taking new orders for the time being
	eMMC	54-56	↗	↗	
	Solid State Drives (SSD)	54	↗	↗	
SkyHigh Memory	SLC NAND Flash	20-22	↗	↗	
	eMMC	20-22	↗	↗	
STMicroelectronics	EEPROM	28-38	↗	↔	

Passives

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Apl Delevan	Inductors	16-20	↔	↔	
AVX	Capacitors- Supercapacitors	16-18	↔	↗	
	Capacitors- Tantalum Molded	32-36	↔	↔	
	Capacitors- Tantalum Conformals	54	↔	↔	
	Capacitors- Polymer Tantalum	22	↔	↔	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	22-28	↔	↔	
	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	26-28	↔	↔	Excludes 1206+ sizes
	Leaded Capacitors- Ceramic	32	↔	↔	
	Specialty Capacitors	32-36	↔	↔	
Coilmaster Electronics	Filters- Common Mode Choke	8-10	↔	↔	
	High Frequency Transformer	10-12	↔	↗	
	Inductors	12-14	↔	↔	
	LAN Magnetics Transformer	6-8	↔	↔	
CTS	Resistor Networks	18-42	↗	↗	
Eaton	Capacitors- Supercapacitors	20-30	↗	↗	
	Inductors	18-30	↗	↗	
ELNA	Capacitors- Supercapacitors	24-36	↗	↗	
Faratronic	Capacitors- Film	12-18	↗	↔	
HALO Electronics	Inductors	44-54	↗	↔	
Murata	Filters	14-22	↗	↔	
	Inductor / Transformers	14-22	↗	↗	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	26-28	↔	↔	
	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	32-36	↔	↔	Excludes 1206+ sizes
	Leaded Capacitors- Ceramic	22-26	↔	↔	
	Specialty Capacitors	22-28	↔	↔	
NIC Components	Electrolytic	24-42	↗	↗	
	Filters	16-22	↗	↗	
	Inductors	16-22	↗	↔	
	Fixed Resistors	14-20	↗	↗	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	24-32	↔	↔	
	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	32-40	↔	↔	Excludes 1206+ sizes
	Leaded Capacitors- Ceramic	28-30	↔	↔	

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Nichicon	Electrolytic	32-52	↗	↗	
Nippon Chemi-Con	Electrolytic	28-36	↔	↗	
Panasonic	Electrolytic	26-52	↗	↗	
	Capacitors- Polymer Tantalum	22-24	↔	↗	
	Inductors	22-30	↔	↔	
	Fixed Resistors	28-54	↗	↗	
	Resistor Networks	28-54	↗	↗	
Pancon Corp.- Paktron	Capactors- Film	12-14	↔	↗	
Royal Ohm	Resistor Networks	12-20+	↔	↗	**Pricing volatile dependent on quarterly raw material pricing reviews**
Samwha Electric	Electrolytic	30+	↗	↔	
Samsung Electro-Mechanics	Fixed Resistors	48	↔	↗	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	26-28	↔	↔	
	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	26-28	↔	↔	**Excludes 1206+ sizes**
Stackploe Electronics	Fixed Resistors	20-32	↗	↗	
Sumida	Inductors	28-38	↗	↔	
Taiyo Yuden	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	32	↔	↔	
	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	32-36	↔	↔	
TDK	Filters	28-42	↗	↗	
	Inductors	16-32	↗	↗	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	22-24	↗	↔	
	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	24-30	↗	↔	**Excludes 1206+ sizes**
TDK EPCOS	Capacitors- Film	26-54	↗	↔	
	Filters	22-28	↔	↔	

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
TT Electronics- BI Technologies	Trimmers & Pots	14-22	↗	↗	
TT Electronics- IRC	Fixed Resistors	22-32	↗	↗	
United Chemi-Con	Electrolytic	30-42	↗	↗	
Viking	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	42	↔	↔	
	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	26-30	↗	↔	Excluding 1206+ sizes
Vishay	Trimmers & Pots	12-20	↗	↗	
	Capacitors- Film	18-26	↗	↗	
	Capacitors- Supercapacitors	16-22	↗	↔	
	Capacitors- Tantalum Molded	42-52	↔	↗	
	Capacitors- Tantalum Conformals	16-18	↔	↔	
	Capacitors- Polymer Tantalum	22-32	↗	↔	
	Inductors / Transformers	14-22	↔	↔	
	Fixed Resistors	32-54	↗	↗	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	22-32	↔	↔	
	Leaded Capacitors- Ceramic	14-18	↗	↔	
	Specialty Capacitors	14-16	↔	↔	
WIMA	Capacitors- Film	18-26	↗	↗	
Wurth Elektronik	Inductors / Transformers	28-42	↗	↗	
Yageo	Fixed Resistors	26-30	↗	↗	
	Resistor Networks	26-30	↗	↗	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	28-32	↔	↔	
	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	28-32	↔	↔	Excluding 1206+ sizes