



Market Insight Q4 2021



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General Market Insight

- The 1GB edition of the Raspberry Pi 4 was discontinued in February of last year, and the 2GB product was moved to its signature price of \$35. However, due to ongoing supply chain challenges which is expected to continue through much of 2022, the 2GB Raspberry Pi 4 is temporarily moves back to \$45.
- The demand for server memory is still extremely low. As a result, market supply is enough, and price has dropped 3-5%, considerably below official pricing.
- According to the US- based Semiconductor Equipment Materials International (SEMI), global silicon wafer shipments are expected to rise strongly through 2024, with wafer area increasing 13.9% year-over-year in 2021 to a record high of approximately 14,000 millions of square inches (MSI).
- The French government has announced a plan for technology development to 2030. The strategy contains ten objectives to strengthen the IT economy, including €6 billion for the semiconductor industry, according to reports. The goal of France 2030 is to increase semiconductor production, smart farming, electric vehicles, and small nuclear reactor development.
- The Department of Trade and Industry encouraged Malaysian companies to invest more in the Philippines after five of them infused \$1.66 billion worth of capital in the Philippines from 2018 to 2020. According to Lopez, Malaysia was the Philippines' sixth largest source of foreign direct investment in the first half of 2021. Despite the pandemic, Malaysian businesses are eager to engage in or grow their operations in the Philippines.
- As Beijing strives for global domination in chip manufacturing, China's semiconductor industry is facing a growing talent shortage. The shortfall of talent in the country's semiconductor industry doubled in 2019 to about 300,000 from 150,000 in 2015, according to a report published this year by the China Institute for Educational Finance Research at Peking University.
- Alibaba unveils self-developed chip as part of China's campaign for technological self-reliance. Developed by Alibaba's in-house semiconductor unit Pingtoug, the chip, named Yitian 710, is based on architecture from UK-based ARM. As the most powerful ARM-based server chip, its performance exceeds the industry benchmark by 2%, the company said. However, the chip will not be commercially available as it will be mainly used for in-house business, and the mass deployment of Yitian might take three to five years, according to the source.
- According to a government study released, South Korea's automotive exports dropped by double digits due to a continuing scarcity of semiconductors used in automobiles.
- The disruption of global supply networks caused by the pandemic has hastened China's manufacturing migration. Other Asian countries, particularly South Korea and Vietnam, stand to benefit from this trend and should encourage reshoring and relocation. The returning firms represent a diverse group of industries – from electronics to jewelry to automobiles – and most of them are relocating from China.



- Global semiconductor sales in Q3 increased by 27.6% year-to-year with a total of US\$144.8 billion. Regionally, year-to-year sales increased in the Americas (33.5%), Europe (32.3%), Asia Pacific/All Other(27.2%), Japan (24.5%), and China (24.0%). Month-to-month sales increased in the Americas (3.9%), Europe (2.0%), Japan (2.0%), Asia Pacific/All Other (1.9%), and China (1.5%).
- Counterfeiters are extremely driven to benefit from the worldwide counterfeit chip market, which today exceeds \$75 billion. This problem isn't going away anytime soon, especially with so many complex dynamics at work.
- As it announced a 65 % increase in second-quarter earnings, China's Lenovo Group, the world's largest producer of personal computers, indicated that a global chip shortage would linger throughout the first half of next year.
- AT&S has begun work on its Southeast Asia expansion. AT&S, an Austrian printed circuit board and IC substrates maker, has announced its plans to invest in a new IC substrates facility in Kulim Hi-Tech Park, Kedah in Malaysia.
- One of the world's top chipmakers, Taiwan Semiconductor Manufacturing Company (TSMC), has revealed intentions to develop a new factory in Japan, a move that analysts believe would aid Japan's weakening chipmaking sector and strengthen its economic security. The new plant is slated to begin operation in 2024.
- In the face of China's economic rise, Japan and the US announced an initiative to facilitate regular discussions on trade matters that are important to both countries. According to officials from both countries, the first round of discussions under the US-Japan Partnership on Trade would take place early next year, with the primary topics of attention being "third country concerns" and collaboration in building a rules-based economic order in the Indo-Pacific region.
- Google has suggested the US government's National Institute of Standards and Technology develop standards for some silicon, in hopes of improving the semiconductor supply chain. Google's opinion emerged in a submission to the Department of Commerce in response to the Biden administration's 100-Day Supply Chain Review of semiconductors and advanced packaging. According to Google, increased chiplet standardization would allow designers to use dies made by a variety of foundries, hence promoting competitiveness and diversity.
- South Korea will invest 20 billion won (\$16.9 million) next year in developing local industries for materials, parts and equipment for chips, future cars, as well as bio products and nanotechnologies.



- The Japanese government welcomed Taiwan Semiconductor Manufacturing Co (2330.TW) (TSMC)'s announcement that it would establish a \$7 billion chip facility in Japan alongside Sony Group (6758.T). Sony has announced that it will invest \$500 million in the facility.
- Commerce Secretary Gina Raimondo encouraged the House of Representatives to pass legislation supporting U.S. semiconductor chip production as soon as possible to avoid future supply disruptions and lower the country's dependence on parts from China.
- European Semiconductor distribution sales sets new records. In both Semiconductors and IP&E (Interconnect, Passive, and Electromechanical) components, the slow start into 2021 has been totally replaced by a double-digit rally. According to DMASS members, semiconductor distribution revenue increased by 31.8 percent to EUR 2.46 billion in Q3, while IP&E distribution sales increased by 44.7 percent to EUR 1.13 billion. For the time, DMASS members reported a 35.6 percent increase in revenue to EUR 3.6 billion.



Allegro Microsystems

- All series have a lead time of 40-81 weeks or more, and capacity is still extremely tight, with no signs of improvement.
- 10% average price increase starting January 01, 2022

Altera

- The Enpirion series (Enxxx) will have its last time buy on March 18, 2022, with a lead time of 22-50 weeks or above at this time.

Analog Devices

- 12-16% price increase across all MSOP series, followed by another price increase in January 2022.

BOSCH

- Bosch confirmed to spend €400 million at its Dresden, Reutlingen and Penang factories. Bosch, being the world's largest automotive supplier has announced that it will take advantage of the catastrophic superconductor supply crisis to increase chip manufacturing at its German and Malaysian facilities.

Broadcom

- BCMxxxx having a 52 weeks or longer lead time. Due to shortage of wafer, mainly for 40nm or older technology, lead time is over 12 months.
- Broadcom announced price increases ranging from 21% to 40% on orders placed from October 15th, depending on the series.
- PEX series lead times are now 68 weeks while the BCM6xxx and BCM8xxx LT stretched to 2022.



Cypress

- FRAM, ex-Ramtron, FM24xxx/FM25xxx series, has a lead time of 30-55 weeks or more, with an unstable price.

Hirose

- Metal resources such as Phosphor Bronze, Brass, and Corson Alloys are tough to come by for Hirose. This aggravates the recent situation as connectors require these specific metals to function.

Infineon

- The BSSxxx BSCxxx / BTSxxx / BSZxxx series (MOSFET) has a lead time of 34-52 weeks or above with no improvement. INF backlog all delayed to Q2 2022 with high allocation, and price is also increasing.

Intel

- 5-20% price increased which started last Dec. 5, 2021
- Due to raw material shortages and strong demand during the pandemic, as well as increased application in IoT and AI technologies, the Intel/Altera 10M xxx series pricing has risen significantly.

Kemet

- The T49 series tantalum capacitor has a lead time of 22-24 weeks, with prices increasing. Lead time subjected to different cap size. Size A & C will need 4 months from the date of confirmation, while Sizes B, D, and X will take 7 months or more from the date of confirmation. Due to a shortage of wafers, the delivery timeline for all Dallas parts has been extended to 60 weeks.



Littelfuse

- With no supply production from its Philippines facility, Littelfuse's usual lead time now is 48 to 50 weeks. PGB/SP series fuses are all made in the Philippines, and costs are likely to rise by 20-30% owing to limited production capacity and raw material shortages.

Marvell

- On November 1, 2021, Marvell implemented a 23 % pricing increase that will apply to all shipments made after that date.

Maxim Integrated

- Maxim, which is now a part of Analog Devices Inc., is expected to raise prices across the board by 16%.

Microchip

- The ex Atmel MCU, ATTiny series, has a lead time of 50 weeks or more, and the ex Atmel series, EEPROM, has a lead time of 45 52 weeks, with scheduled orders continuing to push out, whilst the general Microchip series has a lead time of 26 68 weeks, and spot buy prices are continuing to increase.

Micron

- Micron is considering constructing a new memory plant in the United States, but it will require state and federal subsidies to offset costs that are greater than those of its Asian factories. Micron's chief commercial officer, Sumit Sadana , told Reuters that memory chips account for around 30% of the worldwide semiconductor market, but only 2% is manufactured in the United States. According to Sadana , Micron plans to spend up to US\$12 billion in capital expenditures and US\$3 billion on research and development next year, and up to US\$150 billion over the next decade.



NXP

- NXP is projected to raise prices by 20% at the end of Q4. Following its earlier stoppage due to COVID 19, the NXP facility in Malaysia is said to have reopened at full capacity.
- NXP is canceling orders for the MPC and LPC MCU series without notice.
- Automotive parts have a 52 weeks lead time.
- The FS32K and MCIMX series have already been extensively allocated, and the shutdown is projected to aggravate the situation for these two series, which have been severely limited for months. The cost of the MCIM series is predicted to increase by 15%.
- Affected series: MKExxxx , MKLxxxx , MCIMxxx , TJAxxx , industrial application MCUs; MPXxxx pressure sensors, S9S08xxx, MCIMX6xxx, LPC177xxx, LPC24xxx, MCU 32BIT ARM CORTEX

Onsemi

- Market price for its rectifiers (BASxxx series) is volatile and on allocation. Price is also increasing with a lead time of 65 weeks or above.
- On Semiconductor (Onsemi) has completed its acquisition of silicon carbide producer, GT Advanced Technologies (GTAT). The acquisition will enhance Onsemi's ability to secure and grow supply of SiC.
- Due to unstable manufacturing capacity, Onsemi is unable to meet demand across several series, forcing customers to turn to Sony for parts. Sony's production line, on the other hand, is fully booked through 2022.
- Onsemi series is seeing a possible of 40% price increase on existing and backlogged components in Q4. The reduced capacity in Vietnam, as well as plant closures in Malaysia, has resulted in lead times of 70 weeks or more, which has contributed to price increases.
- Lead time for Onsemi MOSFETs are said to be stretching to 77 weeks.

Phoenix Contact

- Phoenix has announced to have an 8% price increase starting January 01, 2021. Some distributors also advised to order any stock at old price before the end of the year.



Qualcomm

- Qualcomm is expected to increase prices by 40%
- CSR8670/8675 have quick price increases of 5-15%. CSRxx series contract pricing has doubled with customers forecasted to receive 30-50% in 2022.

Realtek

- Realtek's RTL8211 and RTL83 series are in short supply due to a lack of wafers and reduced stock allocation.

Renesas

- Majority of Renesas Electronics' products, as well as its newly acquired Dialog products, will see a price increase beginning January 1, 2022.

Silicon Laboratories

- Silicon Laboratories increased prices on all its product lines, including existing backlog, which began last November 28, 2021, due to an industry wide capacity crisis and widespread inflation across almost all industries.

SK Hynix

- SK hynix Inc., South Korea's second largest chipmaker, announced on Friday that it has agreed to acquire Key Foundry, a local chip contract manufacturer for 575.68 billion won (US\$492 million), as part of efforts to enhance its presence in the non memory sector.



Skyworks

- Skyworks, which acquired Silicon Labs in Q3 2021, is raising prices on all open orders by 30%, backlog orders will be affected.

STMicroelectronics

- ST Micro increased prices by 16-30% across all series with lead times stretching up to 70 weeks. Customers are not expected to receive deliveries until Q4 2022 or Q1 2023 on all series. STM32 is particularly impacted.

Taiyo Yuden

- Japanese manufacturer Taiyo Yuden, will invest MYR 680 million (EUR 140 million) to expand its multilayer ceramic capacitors manufacturing facility in Kuching, Malaysia as the company is looking to increase its production capacity in the ASEAN region.

Texas Instruments

- Texas Instruments has a lead time of more than 70 weeks for all series parts.
- Dallas based Texas Instruments has announced plans to develop up to four new semiconductor chip manufacturing units in Sherman, with a total investment of 30 billion According to the company, construction on the first two fabrication units will begin in 2022 while production of TI's 300-millimeter wafers would begin in 2025.

Toshiba

- Toshiba is focusing production on automotive parts and prioritizing customers in Japan as some factories are only operating 3-4 days per week due to China's government mandated power cuts which affects the manufacturing.



Traco Power

- 5-6% average price increase beginning December 01, 2021

TSMC

- According to the CEO of the world's leading chip maker, Taiwan Semiconductor Manufacturing Co (TSMC), building on a new fab in Japan will begin next year, with mass production beginning in 2024.

Vishay

- The lead time for SFHxxx series, opto coupler components is 43-70 weeks or longer. Certain components have reached the 99-week mark.

Xilinx

- On November 8, 2021, Xilinx increased prices on all existing and future orders, all quotes, and all shipments across all its product lines. Prices for their products will go up as follows:
 - 10% increase on all Versal™Series.
 - 20% increase on all other products
- Xilinx is holding all Spartan 6 shipments and will allocate them, including a stock, which started last October 1, 2021. The Spartan 6 series is currently facing substantial production issues, hence SP6 has been delayed until January 4, 2025. According to source, approximately 30% of total orders will be supported by Xilinx against SP6 now.
- Due to restricted production capacity, the XC6 series' lead time has been extended to 72 weeks. Some delivery dates have been reported as far out as 2024.



ANALOG		PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Standard	Amplifiers & Comparators	→	→	26+
	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		↑	↑	26+

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

STANDARD LOGIC	PRICING TREND	LEAD TIME TREND	LEAD TIME (WEEKS)
Timing Products	↑	↑	26+
Interface	↑	↑	26+
Connectivity	↑	↑	26+
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	↑	↑	26++
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	↑	↑	26++
Fibre-Optic	↑	↑	26+
Infrared	↑	↑	26+
Other Opto	↑	↑	26+

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	↔	SMA	
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	↗	↗	Some lead times are out to 18+ weeks
	Interface	18-26	↗	↗	
	Switching Regulators	8-30	↗	↗	
Maxlinear	Interface	12-22	↗	↗	
Melexis	Sensors	18-54	↗	↗	
	Signal Chain (Amplifiers and Data Converters)	32-42	↗	↗	
Microchip	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	52	↗	↗	
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	18-26	↗	↔	



Batteries

MANUFACTURER	PRODUCT	LEAD TIME (WEEKS)	TREND	PRICING	COMMENTS
Energizer	Alkaline	12-14	↔	↔	
	Lithium Metal	16-18	↔	↔	
	Silver Oxide	10-12	↔	↔	
GP Batteries	Alkaline	16-18	↔	↔	
	Lithium Metal	20-22	↔	↔	
	Lithium Ion	18-20	↔	↔	
	Nickle Metal Hydride	12-14	↔	↔	
	Lead Acid	10-12	↔	↔	
	Carbon Zinc	10-12	↔	↔	
Panasonic	Alkaline	12-14	↔	↔	
	Lithium Metal	26-28	↔	↔	
	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	↔	↔	
	802.15.4/Zigbee Modules	28-34	↗	↗	
CEL	Small Signal, Schottky Diodes, PIN Diodes,Bipolar Transistors,FETs/PHEMTs,Amplifiers,Mixers & Modulators, VCOs, SS Bipolar Transistors,Wideband Transistors	20-22	↔	↔	
Cypress	Bluetooth Modules	28-32	↗	↗	Cypress is now Infineon
Laird Connectivity	Wi-Fi Modules	38-42	↗	↗	
	Antennas	18-22	↗	↗	
	Cellular Modules	8-12	↔	↔	
Linx Technologies	Antennas	12-14	↗	↗	
	Transceivers/Receivers	8-14	↗	↗	
Melexis	Transceivers/Receivers	18	↔	↔	
	RFID	16-18	↔	↔	
	Wi-Fi Modules	26-28	↗	↗	
Microchip	Bluetooth Modules	26-28	↗	↗	
	Transceivers/Receivers	20-22	↔	↗	
Murata	Wi-Fi Modules	54-66	↗	↗	
	Bluetooth Modules	54-66	↗	↗	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
NXP	Multi-Protocol/Chip Solutions	54	↗	↗	
	Transceivers/Receivers	26	↔	↗	
	RFID	28-54	↗	↗	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	↔	↔	
Semtech	Transceivers/Receivers	38	↗	↗	
Sierra Wireless	Multi-Protocol/Chip Solutions	32-42	↗	↔	
	Cellular Modules	32-42	↗	↗	Intel based radios are at 52 weeks
Silex Technology	Wi-Fi Modules	26-30	↗	↗	
ST Microelectronics	Bluetooth Modules	32-42	↗	↗	
	Transceivers/Receivers	54	↗	↗	
	RFID	22-28	↗	↗	
Taoglas	Antennas	22-24	↗	↗	
U-Blox	Bluetooth Modules	28-54	↗	↗	
	Cellular Modules	28-54	↗	↗	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	22	↗	↗	
	SiC MOSFETS	22	↗	↗	
AVX	Varistors	16-24	↔	↗	
CEL	Optocoupler Components	22	↔	↔	
Diodes Inc.	Low Voltage MOSFETS	44-54	↗	↗	
	TVS Diodes	34-42	↗	↔	
	Bridge Rectifiers	20-42	↔	↗	
	Schottky Diodes	18-54	↗	↗	
	Rectifiers	20-78	↔	↗	
	Switching Diodes	18-54	↗	↗	
	Small Signal MOSFETS	18-54	↗	↗	
	Zener Diodes	18-54	↗	↗	
	Bipolar Transistors	18-54	↗	↗	
	Digital Transistors	18-54	↗	↗	
	General Purpose Transistors	14-54	↗	↗	
EATON	Logic	20-32	↗	↗	
	ESD	14-16	↗	↗	
	Fuses	16-22	↗	↗	
Everlight	Clips and Holders	14-18	↔	↗	
	Optocoupler Components	26	↗	↗	
Fairchild (ON Semiconductor)	Low Voltage MOSFETS	44-54	↗	↗	
	High Voltage MOSFETS	28-38	↗	↗	
	IGBTs	28-54	↗	↗	
	Bridge Rectifiers	20-36	↔	↗	
	Schottky Diodes	18-54	↗	↗	
	Rectifiers	22-44	↔	↗	
	Switching Diodes	10-54	↗	↗	
	Small Signal MOSFETS	18-54	↗	↗	
	Zener Diodes	18-54	↗	↗	
	Bipolar Transistors	22-54	↗	↗	
Goford Semiconductor	Optocoupler Components	32-52	↗	↗	
	Low Voltage MOSFETS	16	↗	↔	
	Medium Voltage MOSFETS	16	↗	↔	
Hollyfuse	High Voltage MOSFETS	20	↔	↔	Not active parts now
	Fuses	14-16	↔	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Infineon	Low Voltage MOSFETS	44-54	↔	↗	
	High Voltage MOSFETS	38-54	↔	↗	
	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	22-42	↗	↗	
	Wide Bandgap Mosfets	28-38	↗	↗	
	Fuses	22-26	↗	↔	
	PTC Fuses	32-36	↗	SMA	
	Clips and Holders	16-22	↔	↔	
	Thyristors/Triacs	26-42	↗	↗	
	TVS Diodes	32-48	↗	↔	
Sensors	18-32	↗	SMA		
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	↗	SMA	
	Small Signal MOSFETS	18-54	↗	SMA	
	Zener Diodes	18-54	↗	SMA	
	Bipolar Transistors	18-54	↗	SMA	
	Digital Transistors	18-54	↗	SMA	
	General Purpose Transistors	18-54	↗	SMA	
	Logic	42-52	↗	↔	
ON Semiconductor	Low Voltage MOSFETS	44-54	↗	↗	
	ESD	22-52	↗	↗	
	Wide Bandgap Mosfets	38-52	↗	↗	
	Schottky Diodes	18-54	↗	↗	
	Rectifiers	22-46	↔	↗	
	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	42-54	↗	↔	
	Schottky Diodes	22-54	↗	↔	
	Switching Diodes	22-54	↗	↔	
	Digital Transistors	22-54	↗	↔	
	General Purpose Transistors	22-54	↗	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Schurter	Fuses	22-42	↗	↗	
	Clips and Holders	22-32	↗	↗	
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	32-38	↙	↗	
	Thyristors/Triacs	42-54	↗	↗	
	TVS Diodes	32-42	↗	↗	
	Rectifiers	50-52	↔	↗	
	Bipolar Transistors	22-42	↗	↗	
	Taiwan Semiconductor	Low Voltage MOSFETS	44-54	↗	↗
ESD		22-52	↗	↗	
Wide Bandgap Mosfets		38-52	↗	↗	
Schottky Diodes		18-54	↗	↗	
Rectifiers		22-46	↔	↗	
Switching Diodes		18-54	↗	↗	
Small Signal MOSFETS		18-54	↗	↗	
TDK EPCOS	Zener Diodes	18-54	↗	↗	
	Bipolar Transistors	18-54	↗	↗	
	Digital Transistors	18-54	↗	↗	
	General Purpose Transistors	18-54	↗	↗	
	Logic	32-52	↗	↗	
	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	28-82	↔	↗	
	Rectifiers	38-78	↔	↗	
	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	18-26	↗	↗	
Abracon	Timing	14-54+	↗	SMA	
ADDA	Fans	16-18	↔	↗	
Alps Electric	Switches	26-34	↗	↔	
American Zettler	Relays	18-54+	↗	SMA	
Bivar	Hardware	8-10	↔	↔	
C&K	Switches	14-32	↗	↔	
Citizen Finedevice	Timing	14-54	↗	↗	
COSEL	Power Supplies (AC/DC)	18-32	↗	↔	
	Power Supplies (DC/DC)	18-32	↗	↔	
CTS	Switches	10-12	↔	↗	
	Timing	14-20	↗	↗	
CUI Inc	Power Supplies (AC/DC)	26-54+	↗	↗	
	Power Supplies (DC/DC)	18-54+	↗	↗	
	Heatsinks	12-14	↔	↔	
Delta	Fans	42-54	↗	↔	
Diodes Inc	Timing	12-52	↗	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
E-Switch	Switches	18-20	↗	↗	
EPSON Electronics America	Timing	42+	↗	↗	
Fox	Timing	12-42+	↗	↗	
Grayhill	Switches	18-20	↗	↔	
Heyco	Hardware	8-10	↔	↔	
Hongfa	Relays	18-54+	↗	↗	
Infineon	Relays	20-24	↔	↔	
IXYS	Relays	12-32	↗	↔	
Keystone	Hardware	6-8	↔	↗	
Kyocera International	Timing	30	↗	↔	
Meanwell	Power Supplies (AC/DC)	20-38	↗	↔	
Mornsun	Power Supplies (AC/DC)	14-16	↗	↗	
	Power Supplies (DC/DC)	6-8	↔	↔	
Murata	Timing	10-12	↔	↔	
Murata Power Solutions	Power Supplies (AC/DC)	28-54	↗	↗	
	Power Supplies (DC/DC)	14-20	↗	↗	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Myrra	Power Supplies (AC/DC)	14-16	↗	↗	
NKK Switches	Switches	12-20	↔	↔	
NMB	Fans	16-18	↗	↔	
Ohmite	Fans	12-14	↗	↗	
Omron	Switches	14-52	↗	↔	
Panasonic	Relays	16-38	↔	↔	
	Switches	12-14	↔	↔	
Qualtek	Fans	16-18	↔	↔	
Raltron	Timing	12-42	↔	↔	
RECOM	Power Supplies (AC/DC)	26-54+	↗	↔	
	Power Supplies (DC/DC)	16-38	↗	↔	
Schneider Electric	Relays	16-18	↔	↔	
Song Chuan	Relays	26-62	↗	↔	
SUNON	Fans	32-44	↗	↗	
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	32-48	↗	↔	
	E-paper Display	52	↔	↔	Major shortages for ICs and substrates
Formerica	Fibre Optic Transceivers	20-22	↗	↔	
Infineon	Automotive	Allocation	↗	↔	
Lattice Semiconductor	FPGA	36-38	↗	↗	
Microchip	8 bit MCU	54+	↗	↗	
	32 bit MCU	54+	↗	↗	
	PHY/ Ethernet	32-54	↗	↗	
	USB	32-54	↗	↗	
	32 bit MPU	32-54	↗	↗	
Microsemi	FPGA	36-54	↗	↗	
	PHY/ Ethernet	Allocation	↗	↗	
NXP	8 bit MCU	Allocation	↗	↗	
	32 bit MCU	Allocation	↗	↔	
	Automotive	Allocation	↗	↗	
	32 bit MPU	Allocation	↗	↗	
	Network Processors	Allocation	↗	↗	
Raystar	LCDs	24-26	↗	↗	
Renesas	8 bit MCU	42-48	↗	↗	
	32 bit MCU	42-48	↗	↔	
	Automotive	48	↗	↔	
	32 bit MPU	48	↗	↗	
Renesas Synergy	32 bit MCU	42-48	↗	SMA	
Sharp	LCDs	42-46	↗	↗	
ST Microelectronics	8 bit MCU	Allocation	↗	↗	
	Automotive	Allocation	↗	↗	
	32 bit MPU	28	↗	↗	
	STM32F0- 32 bit MCU	Allocation	↔	↗	
	STM32F1- 32 bit MCU	Allocation	↔	↗	
	STM32L- 32 bit MCU	Allocation	↗	↗	
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	↔	↔	Expecting longer lead time due to CNY holidays
EDAC	PCB Connectors	12-16	↗	↔	
Greenconn Technology	PCB Connectors	4	↔	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
HALO Electronics	Data & Telecom	18-58	↗	↗	
HARTING	PCB Connectors	12-14	↗	↔	
	PCB Connectors	28	↗	↔	
Hirose Electric	RF Connectors	28	↗	↔	
	FFC/FPC	28	↗	↔	
JST	PCB Connectors	28-54	↗	↔	
	PCB Connectors	6-8	↔	↔	
Mil-Max	IC Sockets	6-8	↔	↔	
Omron	PCB Connectors	16-20	↗	↔	
Sullins	PCB Connectors	8-10	↔	↔	
	Automotive Connectors	32-42	↗	↔	
	Circular Connectors	30-32	↔	↗	
	Relays	38-40	↔	↔	
	D-Sub Connectors	10-12	↔	↔	
TE Connectivity	Data & Telecom	10-12	↔	↔	Price increases effective since July 5 th 2021
	PCB Connectors	18-20	↔	↔	
	RF Connectors	14-16	↔	↗	
	IC Sockets	8-10	↔	↔	
	Terminal Blocks & Crimps	16-18	↔	↔	
	Lighting Connectors	10-12	↔	↗	
	Terminal Blocks & Crimps	12	↗	↗	
WAGO	Lighting Connectors	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	22-24	↗	↔	
	Indication LEDs	16-18	↗	↔	
	UV LEDs	10-12	↔	↔	
Excellence Optoelectronics Inc.	Automotive LEDs (AEC-Q101 Certified)	10-12	↔	↔	
General Luminaire	Standard Light Engines (Level 2 Boards)	16-18	↔	↗	
Inolux	Indication LEDs	8-10	↔	↔	
Kingbright	LED Displays	12-14	↙	↔	
	Indication LEDs	10-12	↔	↔	
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)	20-36	↔	↔	
	Illumination High Power LEDs (Colors)	28-36	↔	↔	
	Illumination High Power LEDs (White & Colors)	14-16	↔	↔	
	Horitcultural Mid Power LEDs (White & Colors)	10-14	↔	↔	
	Automotive LEDs (AEC-Q101 Certified)	18-20	↗	↗	
Lumileds	Chip On Board (CoB)	20-28	↔	↔	
	Standard Light Engines (Level 2 Boards)	18-36	↔	↔	
	Infrared Components/ LED	28	↗	↔	
	UV LEDs	TBC	↗	↔	
Meanwell	LED Drivers	28-52	↔	↔	
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	30-40	↗	↗	
	TFT Displays	40-75	↗	↗	
ROHM	Infrared Components/ LED	8-10	↔	↔	
	Indication LEDs	22-48	↗	↔	
Samsung LED	Illumination High Power LEDs (White)	14-16	↙	↔	
	Illumination High Power LEDs (White & Colors)	10-14	↙	↔	
	Horitcultural Mid Power LEDs (White & Colors)	16-18	↙	↔	
	Chip On Board (CoB)	14-16	↔	↔	
	Standard Light Engines (Level 2 Boards)	14-16	↔	↔	
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	16	↔	↔	
Team Source	TFT Displays	26-75	↗	↗	
TE Connectivity	6A (Heat Sinks, LED Holders)	22-52	↔	↔	
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	8-22	↙	↔	
	Mobile DRAM	28-32	↔	↔	
	SRAM	16-28	↔	↗	
	NOR Flash	18-22	↔	↔	
	NAND Flash	22-54	↔	↔	
Cypress	SRAM	14-42	↔	↗	
	NOR Flash	34-54	↗	↗	
	FRAM & NVSRAM	18-54	↗	↗	
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	8-12	↙	SMA	
	Memory Modules	8-12	↔	↔	
	eMMC	12-14	↙	SMA	
	Memory Cards	8-42	↔	↔	
	Solid State Drives (SSD)	10-14	↙	SMA	
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	SRAM	48-50	↗	↗	
	NOR Flash	22-54	↗	↗	
	EEPROM	28-54	↗	↔	
	EPROM	14-28	↔	↔	
Micron	PC (Commodity) DRAM	54-56	↔	↔	
	Memory Modules	54-56	↗	↗	
	eMMC	54-56	↗	↗	
	Solid State Drives (SSD)	54-56	↔	↔	
ON Semiconductor	SRAM	22-42	↗	↗	
	EEPROM	22-32	↗	↗	
Renesas	SRAM	22-24	↔	↔	
Samsung	PC (Commodity) DRAM	54-56	↔	↔	Parts on allocation, Samsung is not quoting and not taking new orders for the time being
	Memory Modules	54-56	↗	↗	
	eMMC	54-56	↗	↗	
	Solid State Drives (SSD)	54-56	↔	↔	
SkyHigh Memory	SLC NAND Flash	20-22	↔	↔	
	eMMC	20-22	↗	↗	
STMicroelectronics	EEPROM	54-56	↗	↗	



Passives

MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
Apl Delevan	Inductors	16-20	↔	↔	
	Capacitors- Supercapacitors	16-18	↔	↗	
AVX	Capacitors- Tantalum Molded	30-36	↔	↔	
	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	6-8	↗	↔	
	High Frequency Transformer	8-10	↗	↔	
	Inductors	8-10	↗	↔	
	LAN Magnetics Transformer	7-9	↗	↔	
CTS	Ferrite Beads	9-10	↗	↔	
	Resistor Networks	18-42	↗	↗	
Eaton	Capacitors- Supercapacitors	20-30	↗	↗	
	Inductors	22-32	↗	↗	
ELNA	Capacitors- Supercapacitors	24-36	↗	↗	
Faratronic	Capacitors- Film	8-20	↔	↔	
HALO Electronics	Inductors	48-58	↗	↔	
Murata	Filters	38-48	↗	↔	
	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	↔	↔	
NIC Components	Specialty Capacitors	22-28	↔	↔	
	Electrolytic	32-52	↗	↗	
	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	40	↔	↔	
	Electrolytic	26-52	↗	↗	
	Capacitors- Polymer Tantalum	32	↗	↗	
Panasonic	Inductors / Transformers	24-30	↗	↔	
	Fixed Resistors	28-54	↗	↗	
	Resistor Networks	28-54	↗	↗	
Pancon Corp.- Paktron	Capactors- Film	12-14	↗	↗	
Royal Ohm	Resistor Networks	10-30	↗	↗	
Samwha Electric	Electrolytic	30-50	↗	↗	
	Fixed Resistors	48	↔	↗	
Samsung Electro-Mechanics	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	28-42	↗	↔	
	Surface Mount General Capacitors- Ceramic (Less than 1 uf)	32	↔	↔	
Taiyo Yuden	Surface Mount General Capacitors- Ceramic (Greater than 1 uf)	32-36	↔	↔	
	Filters	28-42	↗	↗	
TDK	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	38-48	↗	↔	



MANUFACTURER	PRODUCT	LEAD TIME (WKS)	TREND	PRICING	COMMENTS
TT Electronics- BI Technologies	Trimmers & Pots	6-54	↗	↗	
TT Electronics- IRC	Fixed Resistors	22-54	↗	↗	
United Chemi-Con	Electrolytic	32-52+	↗	↗	
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	22-32	↗	↗	
	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	18-22	↗	↗	
Würth 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

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