Q4 2022 Lead Time Report

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The Bullwhip Effect, Shortage Turning to Glut

Our global semiconductor supply chain is not out of the woods yet. Throughout 2022, we have observed far more stabilization in the semiconductor market than 2021. Stress points can still be found as allocation continues to be a challenge. Average selling prices (ASPs) are expected to rise in some markets because of inflationary prices affecting shipping and material costs.

With inflationary costs and weak foreign currency from the war in Ukraine and economic turmoil in the U.K., consumer spending has significantly decreased. This sudden change has dealt a massive blow to consumer electronics, leaving many consumer original equipment manufacturers (OEMs) with upwards of six months of inventory stockpiles.

Automotive OEMs could be in for another year of constraints. U.S. sanctions on China have left many components hard to come by and several automakers have needed to decrease or halt production as a result. Passive component manufacturers, including Yageo, will be working to increase capacity for automotive components as consumer demands drop. This is to help ease constraints for automotive OEMs over 2023.

The semiconductor landscape is facing a massive reversal compared to the rocky start of 2022. While allocation problems are still expected in the future for some chip manufacturers, the biggest challenge on the horizon might be excess inventory.

SEMICONDUCTOR MARKET TRENDS

Volatile Memory

Future Lead Times	Stable (through December)
Price	Mostly Stable

Future lead times and prices will remain stable through the next three months with **Samsung's** DDRA/LPDDRA lines decreasing in price as consumer market demand drops.

Infineon Technology's Cypress SRAM will still be facing allocation issues. Lead times remain stable at 26-42 weeks as they have done throughout 2022.

Micron Technology continues their customer support plans for allocation on their DDR I/DDR II lines though lead times and price remain stable at 20-26 weeks.

DDR3/LPDDR3 suppliers ISSI, Micron, Samsung, and Winbond will be facing extended allocation issues and constrained supplies. Lead times will remain stable as they are and have been through Q3 over the next several months. Samsung's DDR3 1 Gb and 2Gb have reached EOL.

Micron and Samsung's DDR4/LPDDRA products are holding stable though still face allocation constraints. Micron will continue their customer support plan.

SEMICONDUCTOR MARKET TRENDS

Volatile Memory

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
SRAM	Infineon	26 - 42 weeks	Stable –	Stable –	Former Cypress; Almost all devices on allocation
	ISSI	18 - 20 weeks	Stable –	Stable –	
SDRAM	ISSI	18 - 24 weeks	Stable –	Stable –	
	Micron	20 - 26 weeks	Stable –	Stable –	
	Winbond	24 - 30 weeks	Stable –	Stable –	
DDRI/DDRII	ISSI	20 - 24 weeks	Stable –	Stable –	
	Micron	20 - 26 weeks	Stable –	Stable –	Customer Support Plan (Allocation)
	Samsung	26 - 30 weeks	Stable –	Stable –	
	Winbond	24 - 30 weeks	Stable –	Stable –	
DDR3/LPDDR3	ISSI	22 - 24 weeks	Stable –	Stable –	Extended leadtimes
	Micron	20 - 26 weeks	Stable –	Stable –	Customer Support Plan (Constrained Supply)
	Samsung	26 - 30 weeks	Stable –	Stable –	Extended leadtimes; DDR3 1Gb + 2Gb EOL´d
	Winbond	24 - 30 weeks	Stable –	Stable –	Allocation
DDR4/LPDDR4	Micron	20 - 26 weeks	Stable –	Stable –	Customer Support Plan (Allocation)
	Samsung	26 - 30 weeks	Stable –	Down ▾	Supply is getting more stable

SEMICONDUCTOR MARKET TRENDS

Non-Volatile Memory

Future Lead Times	Mostly Stable (through December)
Price	Mostly Stable

Lead times will continue to remain stable for most non-volatile memory components despite allocation issues. This is a result of dropping consumer market demand for **NAND** components. **EEPROM** faces rising lead times and prices due to allocation challenges.

Micron and Infineon will continue to experience allocation issues with Micron extending their customer support plan on Flash-NOR. Lead times and prices are holding stable as they did in the previous quarter.

Joint venture, **SkyHigh Memory** (formerly Cypress) is holding stable with **Kioxia** (formerly Toshiba Memory TME) for Flash-NAND. Micron and Winbond are facing allocation despite stabilization. Micron will offer their customer support plan for Flash-NAND.

Infineon is seeing stabilization for FRAM/MRAM but almost all NOR devices are on allocation for the near future.

EEPROM suppliers **Microchip** (formerly Atmel), **Onsemi, and STMicroelectronics** are seeing rising lead times and prices in the next three months. Microchip and STMicroelectronics cite allocation being the cause.

SEMICONDUCTOR MARKET TRENDS

Non-Volatile Memory

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Flash-NOR	Micron	22 - 28 weeks	Stable –	Stable –	Customer Support Plan (Allocation)
	Infineon	22 - 28 weeks	Stable –	Stable –	Former Cypress; Almost all NOR devices on Allocation
	Macronix	24 - 30 weeks	Stable –	Stable –	
	Winbond	24 - 30 weeks	Stable –	Stable –	
	GigaDevice	16 - 20 weeks	Stable –	Stable –	
Flash-NAND	Micron	20 - 26 weeks	Stable –	Stable –	Customer Support Plan (Allocation)
	Sky High Memory (Former Cypress)	20 - 26 weeks	Stable –	Stable –	Joint Venture “SkyHigh Memory”
	Kioxia	20 - 26 weeks	Stable –	Stable –	Kioxia (former Toshiba Memory TME)
	Macronix	24 - 30 weeks	Stable –	Stable –	
	Winbond	24 - 30 weeks	Stable –	Stable –	Allocation
	GigaDevice	16 - 20 weeks	Stable –	Stable –	
FRAM/MRAM	Infineon	26 - 36 weeks	Stable –	Stable –	Former Cypress; Almost all NOR devices on Allocation
	Everspin	25 - 40 weeks	Stable –	Stable –	
EEPROM	Microchip (former Atmel)	30 - 40 weeks	Stable –	Stable –	Allocation/PSP Program
	ON Semiconductor	30 - 40 weeks	Up ▲	Up ▲	
	STMicroelectronics	40 - 50 weeks	Up ▲	Up ▲	Allocation
	Microchip	30 - 40 weeks	Stable –	Stable –	Allocation/PSP Program

SEMICONDUCTOR MARKET TRENDS

Discrete & Lighting

Future Lead Times	Mostly Going Up (through December)
Price	Mostly Going Up

In general, discrete and lighting continues to be a mixed bag across the board. Lead times are seeing more stabilization while prices are in general increasing. There are some decreasing lead times and prices as rare positive aspects within the market sector.

General Discrete lighting is seeing mostly increased prices and lead times with some stabilization.

ON Semiconductors continues to see downward trends in both lead times and prices at 36-42 weeks. Their MPP program will continue to be reinstated over Q4.

Visible LEDs show more stabilization across prices with only a few lead time increases. Cree sees decreasing lead times overall at 12-16 weeks. However, Cree's various product families including XPEB, XPGB, XHP50A, XHP70A continue to have a 20-24 week lead time.

LiteON is seeing lead time increase from raw material shortages for their visible LEDs. Oshram warns that automotive items and illumination will have a 20-24 week lead time in contrast to their overall stable lead times of 12-16 weeks.

SEMICONDUCTOR MARKET TRENDS

Discrete & Lighting

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
General Discrete	ON Semiconductors	36 - 42 weeks	Down ▼	Down ▼	MPP Program reinstating Q3/Q4
	Vishay	50 - 70 weeks	Stable –	Stable –	
	TaiwanSemi	20 - 30 weeks	Up ▲	Up ▲	
	STMicroelectronics	20 - 36 weeks	Stable –	Stable –	
	Diodes/Zetex	18 - 24 weeks	Up ▲	Up ▲	
	Nexperia	20 - 32 weeks	Stable –	Up ▲	
	Infineon	26 - 40 weeks	Up ▲	Up ▲	
Power	Nexperia	26 - 52 weeks	Up ▲	Stable –	
	STMicroelectronics	26 - 52 weeks	Stable –	Stable –	
	Vishay	70 - 150 weeks	Stable –	Up ▲	
	Littelfuse	26 - 39 weeks	Up ▲	Up ▲	
	ON Semiconductors	50 - 60 weeks	Stable –	Up ▲	
	Alpha Omega	39 - 52 weeks	Up ▲	Up ▲	
	Diodes	26 - 52 weeks	Stable –	Up ▲	
	Wolfspeed	39 - 52 weeks	Up ▲	Up ▲	
	Infineon	52 - 70 weeks	Stable –	Stable –	
Optocouplers	ON Semiconductors	24 - 40 weeks	Stable –	Up ▲	
	Sharp	8 - 12 weeks	Stable –	Stable –	
	Toshiba	16 - 26 weeks	Stable –	Up ▲	
	Vishay	30 - 50 weeks	Stable –	Stable –	
Visible LEDs	Cree	12 - 16 weeks	Down ▼	Stable –	Various families include XPEB, XPGB, XH P50A, XHP70A with 20-24 weeks lead time
	Everlight	16 - 20 weeks	Stable –	Stable –	
	LiteOn	20 - 24 weeks	Up ▲	Stable –	Increasing lead times on single part numbers due to raw material shortages
	Oshram	12 -16 weeks	Stable –	Stable –	Some automotive items and illumination 20-24 weeks lead time
	Vishay	16 -24 weeks	Up ▲	Up ▲	
	Samsung	8 -12 weeks	Down ▼	Stable –	

SEMICONDUCTOR MARKET TRENDS

Standard Logic & Linear

Current Lead Times	Mostly Going Up
Future Lead Times	Mostly Going Up (through December)
Price	Mostly Going Up

Increasing lead times and prices will continue into 2023 as they have throughout 2022. Current market conditions are causing price hikes and lead times to suffer from constraints.

Logic suppliers Nexperia, ON Semiconductor, and Texas Instruments are watching lead times increase drastically from allocation issues. Nexperia already marked SOT223, SOD323, SOD523, SOT353, SOT 363, SOT 457 on allocation. ON Semiconductor warns that price increases are due to the current market conditions as most products are all on allocation.

STMicroelectronics will continue their price increase of 5% on effected linear chips as the majority are still on allocation.

More price hikes might be coming as **Texas Instruments** stabilizes on linear chips at 50-60 weeks from supply constraints.

Even **Toshiba**, who has remained mostly stable through the past quarters, saw an increase of 2 weeks in lead time.

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Logic	Nexperia	26 - 45 weeks	Up ▲	Up ▲	Some packages already on allocation - SOT223/SOD323/ SOD523/SOT353/SOT363/SOT457
	ON Semiconductor	26 - 52 weeks	Up ▲	Up ▲	L/T increasing and majority of offering on allocation. Current market situation has led to price increases
	Texas Instruments	12 - 35 weeks	Up ▲	Up ▲	L/T extending drastically
Linear	STMicroelectronics	16 - 40 weeks	Up ▲	Up ▲	L/T increasing + majority of offering on allocation. Current market situation has led to price increases of 5% + potentially more coming
	Texas Instruments	50 - 60 weeks	Stable –	Stable –	Supply Constraint
	Toshiba	12 - 16 weeks	Stable –	Stable –	
	ON Semiconductor	12 - 16 weeks	Up ▲	Up ▲	
	Vishay	14 - 18 weeks	Up ▲	Up ▲	

SEMICONDUCTOR MARKET TRENDS

Advanced Analog

Future Lead Times	Mostly Going Up (through December)
Price	Mostly Going Up with Some Stability

Stabilization in both price and lead time is reflected across the advanced analog market, though supply constraints are affecting every supplier.

Dataconverter products for **Analog Devices, Texas Instruments, and STMicroelectronics** are all facing supply constraints despite overall stabilization.

Analog Devices, Texas Instruments, and STMicroelectronics OPA lines will remain stable at long lead times from supply constraints.

ADI and Texas Instruments are facing supply constraints for interfaces LVDS, UART USB with Texas Instruments seeing the longest lead times at 25-70 weeks.

Multimedia products by **STMicroelectronics** are seeing increased lead times and prices over the next 3 months.

Power Management products including Low Drop, PWM, and Switching Regulation remain stable in lead times between 30-60 weeks across the board. Supply constraints are affecting all suppliers.

SEMICONDUCTOR MARKET TRENDS

Advanced Analog

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Dataconverters	Analog Devices	32 - 38 weeks	Stable –	Stable –	Supply Constraint
	Texas Instruments	25 - 70 weeks	Stable –	Stable –	Supply Constraint
	STMicroelectronics	30 - 35 weeks	Stable –	Stable –	Supply Constraint
OPA	Analog Devices	35 - 40 weeks	Stable –	Up ▲	Supply Constraint
	Texas Instruments	25 - 70 weeks	Stable –	Stable –	Supply Constraint
	STMicroelectronics	30 - 35 weeks	Stable –	Stable –	Supply Constraint
Interfaces (LVDS,UART USB)	NXP Semiconductor	39 - 45 weeks	Stable –	Stable –	
	ADI	32 - 38 weeks	Stable –	Stable –	Supply Constraint
	Texas Instruments	25 - 70 weeks	Stable –	Stable –	Supply Constraint
Multimedia Products	NXP Semiconductor	40 - 52 weeks	Stable –	Stable –	
	STMicroelectronics	30 - 40 weeks	Up ▲	Up ▲	Prices and lead times up
Power Management (Low Drop, PWM, Switching Reg.)	STMicroelectronics	30 - 40 weeks	Stable –	Stable –	Supply Constraint
	Texas Instruments	50 - 60 weeks	Stable –	Stable –	Supply Constraint
	Infineon	30 - 45 weeks	Stable –	Stable –	Supply Constraint
	Analog Devices	30 - 34 weeks	Stable –	Stable –	Supply Constraint

SEMICONDUCTOR MARKET TRENDS

Embedded Processing

8-Bit Lead Time/Price	Stable/ Mix of Going Up and Stable
16-Bit Lead Time/Price	Stable/Mix of Going Up and Stable
32-Bit Lead Time/Price	Stable/Mostly Stable
DSP Lead Time/Price	Stable/Mostly Stable

The market continues to hold stable with long lead times and prices with only a few suppliers forecasted to raise their prices in the next 3 months. Most parts are facing allocation or tight capacity as products remain in high demand from industrial and automotive manufacturers.

Silicon Laboratories has most 8-bit items on soft allocation with lead times of 20-50 weeks.

NXP 8/16/32-bit embedded processors has most items on allocation status as they remain stable at lead times of 52 weeks. Prices are expected to increase from Q3-Q4 as deliveries remain constrained by production complications.

Microchip's 8-bit, 32-bit, and DSP products are facing extremely long lead times on non-PSP items with orders unable to be expedited unless they are on the PSP program. Microchip had already increased prices as of March 2022.

STMicroelectronics and Infineon are expecting low quantities throughout Q3-Q4 as most 8-bit parts are on allocation, some severe. Infineon and STMicroelectronics are facing 16-bit products on allocation. Infineon has most parts on allocation while STMicroelectronics has ST10 MCUs on allocation.

Texas Instruments is starting to see improvement in its 16-bit products but warns it is too early to see if the stabilization continues through 2023. Texas Intruments remains stable at 35-70 weeks but remarks that DSP supply is still tight due to high demand from industrial and automotive sectors.

Intel forecasts 32-bit products' lead times increasing slightly but for now they remain stable at 18-20 weeks.

STMicroelectronics reports most parts in the 32-bit family under significant allocation. Infineon reports most parts are on allocation while Silicon Laboratories marks their parts on soft allocation.

Analog Devices warns that DSP capacity continues to be extremely tight despite stabilization. A PO Quota has been imposed in Asia.

SEMICONDUCTOR MARKET TRENDS

Embedded Processing

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
8 Bit	Silicon Laboratories	20 - 50 weeks	Stable –	Up ▲	Items on soft allocation
	NXP Semiconductor	52 - 65 weeks	Stable –	Up ▲	Most items remain at 52 wks leadtime and now on allocation status. Delivery remains constrained in Q3 '22 due to production constraints. On-going price increases expected in Q3.
	Microchip	32 - 75 weeks	Stable –	Stable –	Extremely long lead-times especially on non-PSP items. Orders cannot be expedited unless on the PSP program. Prices increased in March 2022.
	STMicroelectronics	45 - 65 weeks	Stable –	Stable –	Severe allocation. Low quantities expected in Q3
	Infineon	26 - 52 weeks	Stable –	Stable –	Most parts are on allocation
16 Bit	Texas Instruments	35 - 70 weeks	Stable –	Stable –	Slight improvement in supply, but too early to say it will stick
	Infineon	24 - 52 weeks	Stable –	Up ▲	Most parts are on allocation
	NXP	52 - 65 weeks	Stable –	Up ▲	Most items remain at 52 wks leadtime and now on allocation status. Delivery remains constrained in Q3 '22 due to production constraints. On-going price increases expected in Q3.
	Microchip	32 - 75 weeks	Stable –	Stable –	Extremely long lead-times especially on non-PSP items. Orders cannot be expedited unless on the PSP program. Prices increased in March 2022.
	STMicroelectronics	45 - 65 weeks	Stable –	Stable –	ST10 MCUs on allocation
32 Bit	Intel	18 - 20 weeks	Stable –	Stable –	Lead times increased slightly
	AMD	14 - 26 weeks	Stable –	Stable –	
	Microchip	32 - 75 weeks	Stable –	Stable –	Extremely long lead-times especially on non-PSP items. Orders cannot be expedited unless on the PSP program. Prices increased in March 2022.
	NXP Semiconductor	52 - 99 weeks	Stable –	Up ▲	Most items remain at 52 wks leadtime and now on allocation status. Delivery remains constrained in Q3 '22 due to production constraints. On-going price increases expected in Q3.
	STMicroelectronics	52 - 65 weeks	Stable –	Stable –	Most parts in the family under significant allocation
	Infineon	20 - 52 weeks	Stable –	Up ▲	Most parts are on allocation
	Silicon Laboratories	40 - 50 weeks	Stable –	Stable –	Items on soft allocation
DSP	Analog Devices	18 - 26 weeks	Stable –	Stable –	Capacity continues to be extremely tight. PO Quota imposed in Asia.
	NXP	52 - 65 weeks	Stable –	Up ▲	Most items remain at 52 wks leadtime and now on allocation status. Delivery remains constrained in Q3 '22 due to production constraints. On-going price increases expected in Q3.
	Texas Instruments	35 - 70 weeks	Stable –	Stable –	Supply still tight due to industrial device demand from industrial and automotive

PEMCO MARKET TRENDS

Programmable Logic

Intel's lead times and prices are holding stable, but significant lead time increases are in the future due to allocation.

- FPGA is stable at 65 weeks with Cyclone, Arria, and Stratix on hard allocation with exception of Stratix 10.
- FPGA (8K, 10K, Apex), CPLD, and tools are stable at 45 weeks for the former and between 4-8 weeks for the latter. All are expected to face increased lead times.

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Intel (former Altera)	FPGA	65 - 65 weeks	Stable –	Stable –	Cyclone, Arria, Stratix hard allocation communicated (Stratix 10 excluded)
	FPGA(8K,10K,Apex)	45 weeks	Stable –	Stable –	Significant lead time increase communicated by supplier
	CPLD	45 weeks	Stable –	Stable –	Significant lead time increase communicated by supplier
	Tools	4 - 8 weeks	Stable –	Stable –	Significant lead time increase communicated by supplier

PEMCO MARKET TRENDS

Passives

Future Lead Times	Mostly Going Up (through December)
Price	Mix of Going Up and Stable

Lead times are seeing more stability than prices as raw material costs increase across the market. Some parts have since announced their EOL phase or entered obsolescence, while others are seeing some drops in price or lead times.

Vishay Resistors Standard Chip (SMD) are facing increased prices over allocation for CRCW. Walsin, in contrast, is expecting a price drop on Walsin/Kamaya Automotive grade SMD Resistors. Vishay is facing increased prices on Non-Linear Thermistor Resistors (NTC/PTC) because of raw material and logistic costs rising.

Yageo's long term agreement has decreased lead times on resistors, networks, and arrays products. Shipment delays are expected from high seaport congestion. Likewise, Walsin's WA-series is facing allocation and shipment delays from seaport congestion. Vishay's parts in this sector have become obsolete.

Bourns is experiencing increasing lead times for their Trimpot due to a lack of raw material supply for ceramics. Vishay will have no SSP pricing on their Sfernice Potis and see pricing for trimmers and potentiometers rising as a result.

Schurter and Littelfuse will be experiencing price hikes and lead time increases from raw material and logistics costs for over-current protection fuses.

Frequency Control Crystals and Oscillators are seeing prices and lead times increase from all suppliers. TXC remarks that some parts are up to 72 weeks for their lead times.

AVX/Kyocera have announced their ceramics resonators are now EOL.

Epcos/RF360 frequency control SAWFilters will be having price increases from raw material shortages. Their DCC6C series will be under tight delivery from these shortages.

Multilayer Ceramic Capacitors (MLCC) are mostly remaining stable with some constraints and some sunny spots of decreasing lead times and prices. AVX/Kyocera says for automotive components lead times are higher than usual at 28-32 weeks but with price decreases averaging 12%. Yageo is seeing shipment delays due to high seaport congestion while Kemet's HiCV is well above their average lead times at 42 weeks.

PEMCO MARKET TRENDS

Passives

Tantalum Capacitors are seeing price increases by both Kemet and Vishay. Kemet warns that polymer lead times are well above their average at 52 weeks while Vishay announces a price increase average of 12%.

Film Capacitors expect price increases from allocation. Epcos/TDK has placed some parts on allocation with expected price increases. Kemet will be increasing their prices by 5% in the coming months.

Aluminum Capacitors are seeing price increases due to allocation with seaport congestion affecting delivery times. Epocs/TDK has placed Snap In Capacitors on allocation while Nichicon cancels all customer quotes with their hybrid up to 72 weeks. Lelon is facing shipment delays from seaport congestion and Panasonic sees their hybrid reach 58 weeks.

Inductors, Chokes, Coils mostly remain stable with some spots of increased prices. **Transformers** are seeing stable lead times with raised prices in the coming quarters. Pulse reports price increases in April-May by 10%.

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Resistors Standard Chip (SMD)	Panasonic	52 - 60 weeks	Stable –	Stable –	
	Vishay	50 - 56 weeks	Stable –	Up ▲	Allocation for CRCW
	Yageo	22 - 28 weeks	Stable –	Stable –	
	Walsin	20 - 25 weeks	Stable –	Stable –	Price decrease on Walsin/Kamaya Automotive grade SMD Resistors
Resistors Networks & Arrays	Bourns	14 - 16 weeks	Stable –	Stable –	
	Vishay				Obsolete
	Yageo	20 - 28 weeks	Stable –	Stable –	Due to Long Term Agreement decreased L/T. Shipment delays due to high seaport congestion.
	Walsin	18 - 24 weeks	Stable –	Up ▲	Some WA-series facing Allocation. Shipment delays due to high seaport congestion.
Non-Linear Resistors Thermistors (NTC/PTC)	Epcos/TDK	20 - 30 weeks	Stable –	Stable –	
	Murata	20 - 22 weeks	Stable –	Stable –	
	Vishay	20 - 30 weeks	Stable –	Up ▲	Price increase due to increase in raw material and logistic cost
Trimmers & Potentiometers	Bourns	24 - 44 weeks	Up ▲	Stable –	Lack of raw material cost (supply of Ceramics) for Trimpot
	TTElectronics	20 - 44 weeks	Stable –	Stable –	
	Vishay	40 - 65 weeks	Stable –	Up ▲	No SSP pricing for Sfernice Potis

PEMCO MARKET TRENDS

Passives

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Over-Voltage Protection Varistors	AVX/Kyocera	17 - 20 weeks	Stable –	Stable –	
	Bourns	16 - 20 weeks	Stable –	Stable –	Price increase due to increase in raw material and logistic cost
	Littelfuse	25 - 30 weeks	Up ▲	Up ▲	Price increase due to increase in raw material and logistic cost
	Epcos/TDK	15 - 22 weeks	Stable –	Stable –	
Over-Voltage Protection Thyristors & TVS Diodes	AVX/Kyocera	10 - 12 weeks	Stable –	Stable –	
	Bourns	14 - 18 weeks	Stable –	Stable –	
Over-Current Protection Fuses	Bourns	16 - 20 weeks	Stable –	Stable –	
	Littelfuse	20 - 30 weeks	Up ▲	Up ▲	Price increase due to increase in raw material and logistic cost
	Schurter	21 - 35 weeks	Up ▲	Up ▲	Price increase due to increase in raw material and logistic cost
Frequency Control Crystals & Oscillators	AVX/Kyocera	40 - 50 weeks	Up ▲	Up ▲	
	Abracon	30+ weeks	Up ▲	Up ▲	
	Geyer	45 - 50 weeks	Up ▲	Up ▲	
	IQD	30 - 35 weeks	Up ▲	Up ▲	
	TXC	45 - 50 weeks	Up ▲	Up ▲	Some parts up to 72 weeks LT
Frequency Control Resonators	AVX/Kyocera				Ceramics resonators became EOL
	Abracon	9 - 24 weeks	Stable –	Stable –	
	Murata	9 - 16 weeks	Stable –	Stable –	
Frequency Control SAW Filters	Epcos/RF360	16 - 24 weeks	Stable –	Up ▲	Very tight delivery situation for DCC6C series due to raw material shortage
	Abracon	24 - 38 weeks	Stable –	Stable –	
	Murata	18 - 22 weeks	Stable –	Stable –	
Capacitors Ceramic Multilayer (MLCC)	AVX/Kyocera	19 - 23 weeks	Stable –	Down ▼	28-32 weeks for Automotive/price decrease avg. 12%
	Kemet	30 - 34 weeks	Stable –	Up ▲	HiCV up to 42 weeks
	Murata	24 - 28 weeks	Stable –	Stable –	
	Samsung EM	18 - 22 weeks	Stable –	Stable –	
	TDK	24 - 28 weeks	Up ▲	Up ▲	
	Yageo	22 - 26 weeks	Stable –	Stable –	Shipment delays due to high seaport congestion
	Walsin	20 - 24 weeks	Down ▼	Down ▼	

PEMCO MARKET TRENDS

Passives

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Capacitors Tantalum	AVX/Kyocera	28 - 32 weeks	Stable –	Stable –	
	Kemet	40 - 44 weeks	Stable –	Up ▲	Polymer up to 52 weeks
	Vishay	26 - 36 weeks	Stable –	Up ▲	Price increase avg. 12%
Capacitors Film	Epcos/TDK	66 - 70 weeks	Down ▼	Up ▲	Supplier allocation on some parts
	Kemet	27 - 31 weeks	Stable –	Up ▲	Price increase avg. 5%
	Vishay	18 - 22 weeks	Stable –	Stable –	
	Wima	20 - 24 weeks	Stable –	Stable –	
Capacitors Aluminium	Epcos/TDK	40 - 44 weeks	Stable –	Up ▲	Allocation for Snap In Capacitors
	Nichicon	48 - 52 weeks	Stable –	Up ▲	Hybrid up to 72 weeks. All customer quotes cancelled
	Lelon	26 - 30 weeks	Stable –	Stable –	Shipment delays due to high seaport congestion
	Panasonic	44 - 48 weeks	Up ▲	Up ▲	Hybrid up to 58 weeks
	Vishay	22 - 26 weeks	Stable –	Stable –	
Inductors Chokes Coils	Abracon	16 - 22 weeks	Stable –	Stable –	
	Bourns	28 - 35 weeks	Stable –	Stable –	
	Eaton	15 - 20 weeks	Stable –	Stable –	
	Epcos/TDK	18 - 22 weeks	Stable –	Up ▲	
	Murata	20 - 25 weeks	Stable –	Stable –	
	Pulse	15 - 22 weeks	Stable –	Up ▲	Expected price increase of 10% in April-May
	Vishay	18 - 22 weeks	Stable –	Stable –	
Transformers	Bourns	26 - 30 weeks	Stable –	Stable –	
	Epcos/TDK	18 - 22 weeks	Stable –	Up ▲	
	Pulse	14 - 20 weeks	Stable –	Up ▲	Expected price increase of 10% in April-May
Ferrites	Epcos/TDK	10 - 20 weeks	Stable –	Up ▲	
	Ferroxcube	25 - 35 weeks	Up ▲	Up ▲	
Filters (EMI)	Epcos/TDK	15 - 22 weeks	Stable –	Up ▲	
	Schaffner	16 - 18 weeks	Stable –	Up ▲	
	TE Connectivity	20 - 22 weeks	Stable –	Stable –	

PEMCO MARKET TRENDS

Connectors

Future Lead Times	Mostly Going Up (through December)
Price	Mostly Going Up (through December)

The market is seeing another upward trend for lead times and prices, mostly due to parts on allocation with raw material shortages affecting lead times.

Headers/Stiks, IDC, DIN, PCB, Mod Jack, GangJack are seeing raised prices and lead times across the supplier board. FCI has placed their Dubox and Quickie on soft allocation from missing raw materials. Molex is also on allocation while TE Connectivity struggles with raw material shortages impacting lead times.

Molex has placed their High Speed Board to Board, High Speed I/O on allocation. TE Connectivity faces higher lead times from raw material shortages. Molex continues to place I/O, D-Sub, and Power on allocation.

PLCC, SIMM, DIMM are rising in lead time and price from TE Connectivity with raw material shortages. Molex places product lines on allocation.

Terminal Blocks, Circular Industrial, and Ethernet see lead time and price increases from allocation and raw material shortages. Phoenix's SACC Series has a lead time of 40+ weeks, far greater than the average lead time of 12-20 weeks.

RF Connectors by Molex and TE Connectivity are facing allocation and raw material shortages, respectively.

PEMCO MARKET TRENDS

Connectors

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Headers/Stiks, IDC, DIN, PCB, Mod Jack, GangJack	3M	20 - 28 weeks	Up ▲	Up ▲	
	FCI	26 - 30 weeks	Up ▲	Up ▲	Dubox and Quickie on soft allocation due to missing raw material
	Molex	25 - 30 weeks	Up ▲	Up ▲	Allocation
	Samtec	10 - 12 weeks	Up ▲	Up ▲	
	TEConnectivity	15 - 18 weeks	Up ▲	Up ▲	Raw material shortage – higher lead times expected
High Speed Board to Board, High Speed I/O	Amphenol TCS	28 - 30 weeks	Stable –	Up ▲	
	FCI	22 - 24 weeks	Stable –	Up ▲	
	Molex	25 - 30 weeks	Up ▲	Up ▲	Allocation
	Samtec	10 - 12 weeks	Up ▲	Up ▲	
	TEConnectivity	18 - 20 weeks	Up ▲	Up ▲	Raw material shortage – higher lead times expected
I/O, D-Sub,Power	FCI	22 - 24 weeks	Stable –	Up ▲	
	ITT Cannon	20- 24 weeks	Up ▲	Up ▲	
	Molex	25 - 30 weeks	Up ▲	Up ▲	Allocation
	Samtec	10 - 12 weeks	Up ▲	Up ▲	
PLCC, SIMM, DIMM	FCI	16 - 18 weeks	Stable –	Stable –	
	Molex	25 - 30 weeks	Up ▲	Up ▲	Allocation
	TEConnectivity	13 - 15 weeks	Up ▲	Up ▲	Raw material shortage – higher lead times expected
Terminal Blocks, Circular Industrial, Ethernet	Amphenol	28 - 30 weeks	Stable –	Up ▲	
	Molex	25 - 30 weeks	Up ▲	Up ▲	Allocation
	Phoenix	12 - 20 weeks	Up ▲	Up ▲	SACC Series up to 40+ weeks
	TEConnectivity	16 -20 weeks	Up ▲	Up ▲	Raw material shortage – higher lead times expected
RF Connectors	Amphenol RF	28 - 30 weeks	Stable –	Up ▲	
	Molex	25 - 30 weeks	Up ▲	Up ▲	Allocation
	TEConnectivity	15 - 18 weeks	Up ▲	Up ▲	Raw material shortage – higher lead times expected

PEMCO MARKET TRENDS

Emech

Future Lead Times	Mix of Going Up, Going Down, and Stable
Price	Mix of Going Up and Stable

Prices will see more stability in the next three months as lead times increase for most sectors of Emech. Allocation and tariff increases in North America are contributing to the rise.

Power Relays suppliers are seeing all lead times increase with some prices remaining stable. Fujitsu has announced their FTR-, VE-, FN-, and JS series on allocation. Omron likewise has announced a new soft allocation for products.

Signal and Telecom Relays are mixed with mostly heightened lead times and prices. Fujitsu has placed their Signal Relay series FTR-B4 on allocation as Omron announces soft allocation on products. TE Connectivity sees global allocation on their IM Series.

Safety Relays will be facing allocation by both Omron, which placed them on soft allocation, and PEW, which announced partial allocation.

Pushbutton Switches are experiencing increasing lead times with mostly stable prices. Honeywell will increase prices in response to a tariff increase by North America. Knitter-Switch is currently not franchised in North America.

Slide Switches are continuing their upward trending lead times. Knitter-Switch is currently not franchised in North America.

Tactile Switches are still climbing in lead time. Omron has placed their B3S in allocation and Knitter-Switch is not franchised in North America.

Microswitch/SNAP Switches are trending upward in their lead times and prices from allocation and tariffs. Honeywell is increasing prices in response to tariff increase by North America and Omron announced soft allocation on products.

Fischer's Heatsinks remain stable at 6-8 weeks but are not franchised in North America.

PEMCO MARKET TRENDS

Emech

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Power Relays	Fujitsu	32 -34 weeks	Up ▲	Stable –	FTR-, VE-, FN- & JS series on allocation
	Omron	26 - 28 weeks	Up ▲	Up ▲	Omron announced new soft allocation
	PEW	22 - 52 weeks	Up ▲	Stable –	
	TE Connectivity	24 - 28 weeks	Up ▲	Up ▲	
Signal- & Telecom Relays	Fujitsu	30 - 70 weeks	Up ▲	Stable –	Signal Relay series FTR-B4 on allocation
	Omron	26 - 28 weeks	Up ▲	Up ▲	Omron announced new soft allocation
	PEW	16 - 33 weeks	Up ▲	Stable –	
	TE Connectivity	30 - 40 weeks	Down ▼	Up ▲	Global allocation on IM Series
Solid State Relays (incl. Reed- & IO Relays)	Crydom	18 - 24 weeks	Up ▲	Stable –	
	PEW	8 - 12 weeks	Up ▲	Stable –	
	TE Connectivity	14 - 18 weeks	Up ▲	Up ▲	
Time Delay Relays	Littelfuse	16 - 20 weeks	Up ▲	Stable –	
	TE Connectivity	22 - 24 weeks	Stable –	Up ▲	
Safety Relays	Fujitsu	32 - 34 weeks	Up ▲	Stable –	
	Omron	26 - 28 weeks	Up ▲	Up ▲	Omron announced new soft allocation
	PEW	33 - 35 weeks	Up ▲	Stable –	Partially on allocation
	TE Connectivity	20 - 24 weeks	Stable –	Up ▲	
Automotive Relays	Omron	26 - 28 weeks	Up ▲	Up ▲	Omron announced new soft allocation
	PEW	18 - 28 weeks	Up ▲	Stable –	
	TE Connectivity	20 - 24 weeks	Stable –	Up ▲	
Pushbutton Switches	C&K	20 - 24 weeks	Up ▲	Stable –	
	Honeywell	22 - 24 weeks	Up ▲	Up ▲	Tariff increase NA
	Knitter-Switch	12 - 20 weeks	Up ▲	Stable –	Not franchised in NA
	NKK	20 - 22 weeks	Up ▲	Stable –	

PEMCO MARKET TRENDS

Emech

TECHNOLOGY	SUPPLIER	LEAD TIME		PRICE	COMMENTS
		CURRENT	FUTURE TREND (NEXT 3 MONTHS)	FUTURE TREND (NEXT 3 MONTHS)	
Slide Switches	C&K	20 - 24 weeks	Up ▲	Stable –	
	Knitter-Switch	12 - 20 weeks	Up ▲	Stable –	Not franchised in NA
	NKK	20 - 22 weeks	Up ▲	Stable –	
	TE Connectivity	14 - 18 weeks	Up ▲	Up ▲	
Tactile Switches	C&K	20 - 24 weeks	Up ▲	Stable –	
	Knitter-Switch	12 - 20 weeks	Up ▲	Stable –	Not franchised in NA
	Omron	22 - 24 weeks	Up ▲	Up ▲	B3S on allocation
Microswitch / SNAP Switches	C&K	20 - 24 weeks	Up ▲	Stable –	
	Honeywell	22 - 24 weeks	Up ▲	Up ▲	Tariff increase NA
	Omron	22 - 24 weeks	Up ▲	Up ▲	Omron announced new soft allocation
Heatsinks	Aavid	18 - 20 weeks	Up ▲	Up ▲	
	Fischer	6 - 8 weeks	Stable –	Stable –	Not franchised in NA
Fans	EBM Papst	28 - 30 weeks	Up ▲	Stable –	