

A general overview of the market situation as well as lead times and prices



## **Analog**

**High-End:** Pricing and lead times remain largely unchanged.

Commodities: Prices and lead times remain stable.



	Lead Time (wk)	Price
Switched Voltage Regs	↔ 10-26	$\leftrightarrow$



	Lead Time (wk)	Price
Data Converters	↔ 6-36	$\leftrightarrow$
Interface	$\leftrightarrow$ 6-20	$\leftrightarrow$
Op Amps High End	$\leftrightarrow$ 6-22	$\leftrightarrow$
Switched Voltage Regs	↔ 6-28	$\leftrightarrow$

## NSSH NBO

	Lead	d Time (wk)	Price
Op Amps Commodities	$\leftrightarrow$	12-16	$\leftrightarrow$
Op Amps High End	$\leftrightarrow$	12-16	$\leftrightarrow$
Switched Voltage Regs	$\leftrightarrow$	8-16	$\leftrightarrow$
Voltage Regulators	$\leftrightarrow$	8-16	$\leftrightarrow$



	Lead	d Time (wk)	Price
Interface	$\leftrightarrow$	13-24	$\leftrightarrow$
Op Amps High End	$\leftrightarrow$	16-28	$\leftrightarrow$

#### onsemil

	Lead Time (wk)	Price
Interface	↔ 10-26	$\leftrightarrow$
Op Amps Commodities	$\leftrightarrow$ 10-20	$\leftrightarrow$
Op Amps High End	$\leftrightarrow$ 12-22	$\leftrightarrow$
Switched Voltage Regs	↔ 12-40	$\leftrightarrow$
Voltage Regulators	$\leftrightarrow$ 12-32	$\leftrightarrow$

## **power** integrations™

	Lead Time (wk)	Price
Switched Voltage Regs	↔ 8-20	$\leftrightarrow$



	Lead Time (wk)	Price
Data Converters	↔ 12-16	$\leftrightarrow$
Op Amps Commodities	↔ 12-16	$\leftrightarrow$
Switched Voltage Regs	↔ 12-16	$\leftrightarrow$
Voltage Regulators	↔ 12-16	$\leftrightarrow$



	Lead Time (wk)	Price
Data Converters	↔ 16-24	$\leftrightarrow$
Interface	↔ 14-20	$\leftrightarrow$
Op Amps Commodities	$\leftrightarrow$ 10-20	$\leftrightarrow$
Op Amps High End	$\leftrightarrow$ 12-30	$\leftrightarrow$
Switched Voltage Regs	↔ 12-26	$\leftrightarrow$
Voltage Regulators	↔ 13-22	$\leftrightarrow$



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### **Discretes**

According to the market environment, lead times are still moderate. It is recommended to place long-term orders as the production time (cycle time, lean die banking) is higher than the lead times indicate. Prices remain stable.

#### amu osram

	Lead Time (wk)	Price
Sensors	$\leftrightarrow$ 15-32	$\leftrightarrow$

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	Lead Time (wk)	Price
RF Devices	↔ 12-18	$\leftrightarrow$



	Lead Time (wk)	Price
Bi-polar Power	↔ 6-10	$\leftrightarrow$
IGBT	↔ 14-42	$\leftrightarrow$
Power MOSFETs	↔ 12-34	$\leftrightarrow$
Rectifiers	↔ 17-26	$\leftrightarrow$
RF Devices	↔ 10-16	$\leftrightarrow$
Sensors	$\leftrightarrow$ 12-30	$\leftrightarrow$
Small Signal	↔ 12-18	$\leftrightarrow$
Thyristors	↔ 18-28	$\leftrightarrow$

### nexperia

	Lead Time (wk)	Price
Bi-polar Power	↑ 10-15	$\leftrightarrow$
Power MOSFETs	↔ 11-23	$\leftrightarrow$
Rectifiers	<b>↑</b> 10-16	$\leftrightarrow$
Small Signal	<b>↑</b> 10-18	$\leftrightarrow$
TVS/Protection	<b>↑</b> 10-16	$\leftrightarrow$
Zener Diodes	<b>↑</b> 8-22	$\leftrightarrow$



	Lead Time (wk)	Price
RF Devices	↔ 15-20	$\leftrightarrow$
Sensors	↔ 19-46	$\leftrightarrow$

#### onsemi

	Lead Ti	me (wk)	Price
Bi-polar Power	$\leftrightarrow$	12-21	$\leftrightarrow$
IGBT	$\leftrightarrow$	14-32	$\leftrightarrow$
Power MOSFETs	<b>↑</b>	11-27	$\leftrightarrow$
Rectifiers	<b>↑</b>	12-22	$\leftrightarrow$
Small Signal	<b>↑</b>	12-24	$\leftrightarrow$
TVS/Protection	$\leftrightarrow$	12-18	$\leftrightarrow$
Zener Diodes	<b>↑</b>	10-22	$\leftrightarrow$



	Lead	Time (wk)	Price
Bi-polar Power	$\leftrightarrow$	14-18	$\leftrightarrow$
IGBT	$\leftrightarrow$	16-32	$\leftrightarrow$
Power MOSFETs	<b>1</b>	15-28	$\leftrightarrow$
Rectifiers	<b>1</b>	17-27	$\leftrightarrow$
Small Signal	$\leftrightarrow$	16-25	$\leftrightarrow$
Thyristors	$\leftrightarrow$	17-28	$\leftrightarrow$
TVS/Protection	<b>1</b>	16-25	$\leftrightarrow$



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According to the market environment, lead times are still moderate. It is recommended to place long-term orders as the production time (cycle time, lean die banking) is higher than the lead times indicate. Prices remain stable.



	Lead Time (wk)	Price
Power MOSFETs	<b>↑</b> 16-24	$\leftrightarrow$
Rectifiers	<b>↑</b> 10-22	$\leftrightarrow$
Small Signal	<b>↑</b> 14-22	$\leftrightarrow$
TVS/Protection	↑ 12-18	$\leftrightarrow$
Zener Diodes	<b>↑</b> 14-22	$\leftrightarrow$

#### **TOSHIBA**

	Lead Time (wk)	Price
Power MOSFETs	↔ 19-24	$\leftrightarrow$



	Lead	Time (wk)	Price
Power MOSFETs	<b>1</b>	12-31	$\leftrightarrow$
Rectifiers	<b>1</b>	9-22	$\leftrightarrow$
Small Signal	<b>1</b>	10-21	$\leftrightarrow$
Thyristors	$\leftrightarrow$	12-21	$\leftrightarrow$
TVS/Protection	<b>↑</b>	9-16	$\leftrightarrow$
Zener Diodes	<b>1</b>	9-26	$\leftrightarrow$



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## **Memory**

#### ALL PRICE TENDENCIES ARE INDICATED IN USD

Please provide long-term demand for all technologies. Forecast/Order backlog is key for planning demand properly. **General situation:** Price and lead time levels highly depend on supplier and product technology. Increasing price levels and lead times on the latest technologies. Samsung DDR3 and low-capacity eMMC pullout impact supply and availability. **DRAM:** Pricing and lead times increasing - highly impacting on LPDDR4/DDR4 and newer technologies like DDR5/LPDDR5. Unplanned upsides on newer technologies difficult to supply.

**NAND Flash:** Availability dependent on supplier. Increasing prices and lead times, especially on latest tech (SSDs) and low-capacity eMMCs. Unplanned upsides difficult to supply. Please review customer demand on eMMCs - backlog required to secure supply.

NOR Flash: Increasing lead times expected.

SRAM: Good availability - minor constraints on specific technologies.



	Lead Time (wk)	Price
Serial NOR Flash	↔ 24-36	$\leftrightarrow$
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	Lead Time (wk)	Price
FRAM	↔ 8-10	$\leftrightarrow$
nvSRAM	$\leftrightarrow$ 10	$\leftrightarrow$
Parallel NOR Flash	↔ 8-10	$\leftrightarrow$
Serial NOR Flash	↔ 8-14	$\leftrightarrow$
SRAM Asynch.	↔ 8-10	$\leftrightarrow$
SRAM Synch.	↔ 10-12	$\leftrightarrow$

## ISSI

	Lead Ti	me (wk)	Price
DDR/mobile DDR	$\leftrightarrow$	8-12	$\leftrightarrow$
DDR2/LPDDR2	$\leftrightarrow$	8-12	$\leftrightarrow$
DDR3/DDR3L	$\leftrightarrow$	8-12	$\leftrightarrow$
DDR4/LPDDR4	$\leftrightarrow$	6-16	$\leftrightarrow$
Managed NAND (eMMC, UFS)	$\leftrightarrow$	10-12	$\leftrightarrow$
NAND (SLC,MLC,TLC,3D)	$\leftrightarrow$	10-20	$\leftrightarrow$
Parallel NOR Flash	$\leftrightarrow$	12-16	$\leftrightarrow$
SDRAM/mobile SDRAM	$\leftrightarrow$	6-8	$\leftrightarrow$
Serial NOR Flash	$\leftrightarrow$	12-14	$\leftrightarrow$
SRAM Asynch.	$\leftrightarrow$	8-12	$\leftrightarrow$
SRAM Synch.	$\leftrightarrow$	8-12	$\leftrightarrow$

### **KIOXIA**

	Lead Time (wk	Price
Managed NAND (eMMC, UFS)	<b>↑</b> 16-26	$\leftrightarrow$
NAND (SLC,MLC,TLC,3D)	<b>↑</b> 16-52	$\leftrightarrow$
SSD	<b>↑</b> 8-12	$\leftrightarrow$



	Lead Time (wk)	Price
EEprom	$\leftrightarrow$ 5-52	$\leftrightarrow$
Eprom	$\leftrightarrow$ 5-52	$\leftrightarrow$
Serial NOR Flash	↔ 24-28	$\leftrightarrow$



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NOR Flash: Increasing lead times expected.

**SRAM:** Good availability - minor constraints on specific technologies.

### wictor

	Lead Time	(wk) Price
DDR/mobile DDR	<b>↑</b> 12	<b>↑</b>
DDR2/LPDDR2	<b>↑</b> 12	<b>↑</b>
DDR3/DDR3L	<b>↑</b> 12	<b>↑</b>
DDR4/LPDDR4	<b>↑</b> 20	<b>↑</b>
DDR5/LPDDR5	<b>↑</b> 20	<b>↑</b>
Managed NAND (eMMC, UFS)	<b>↑</b> 20	<b>↑</b>
microSD	<b>↑</b> 20	<b>↑</b>
NAND (SLC,MLC,TLC,3D)	<b>↑</b> 12	<b>↑</b>
Parallel NOR Flash	<b>↑</b> 12	<b>↑</b>
SDRAM/mobile SDRAM	<b>↑</b> 12	<b>↑</b>
Serial NOR Flash	<b>↑</b> 12	<b>↑</b>
SSD	<b>↑</b> 20	<b>↑</b>

#### onsemi

	Lead Time (wk)	Price
EEprom	↔ 7-21	$\leftrightarrow$
Serial NOR Flash	↔ 16-20	$\leftrightarrow$

### RENESAS

	Lead Time (wk)	Price
EEprom	↔ 8-12	$\leftrightarrow$
FIFO	↔ 16-20	$\leftrightarrow$
SRAM Asynch.	$\leftrightarrow$ 20-24	$\leftrightarrow$
SRAM Multiport	↔ 16-20	$\leftrightarrow$
SRAM Synch.	↔ 20-24	$\leftrightarrow$

#### **SAMSUNG**

	Lead	Time (wk)	Price
DDR3/DDR3L	<b>1</b>	n/a	<b>1</b>
DDR4/LPDDR4	<b>1</b>	n/a	<b>1</b>
DDR5/LPDDR5	<b>1</b> 1	n/a	<b>1</b> 1
Managed NAND (eMMC, UFS)	<b>†</b> †	n/a	<b>1</b>
SSD	<b>†</b> †	n/a	<b>†</b>



	Lead Time (wk)	Price
EEprom	↔ 8-14	$\leftrightarrow$
NVRAM	↔ 8-16	$\leftrightarrow$



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## **Opto**

**LEDs:** Overall good supply situation. **Coupler:** Overall good supply situation.

Vishay: Lead time 4-16 weeks for majority of the Optocoupler portfolio.

Samsung: Official announcement of LED-business exit.

#### amu osram

	Lead Ti	me (wk)	Price
LEDs High Power	$\leftrightarrow$	8-14	$\leftrightarrow$
LEDs High Power General Lighting	$\leftrightarrow$	8-14	$\leftrightarrow$
LEDs Infrared	$\leftrightarrow$	8-14	$\leftrightarrow$
LEDs Low/Mid Power	$\leftrightarrow$	10-18	$\leftrightarrow$
LEDs Low/Mid Power General Lighting	$\leftrightarrow$	10-12	$\leftrightarrow$
LEDs Ultraviolet	$\leftrightarrow$	8-10	$\leftrightarrow$



	Lead Time (wk)		Price
LED Driver	$\leftrightarrow$	10-12	$\leftrightarrow$
LEDs High Power General Lighting	$\leftrightarrow$	4-6	$\leftrightarrow$
LEDs Low/Mid Power General Lighting	$\leftrightarrow$	6-8	$\leftrightarrow$

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	Lead Time (wk)	Price
Coupler	↔ 8-36	$\leftrightarrow$
LEDs High Power	↔ 12-14	$\leftrightarrow$
LEDs Low/Mid Power	↔ 12-14	$\leftrightarrow$

#### **EVERLIGHT**

	Lead Time (wk)	Price
Coupler	$\leftrightarrow$ 12-30	$\leftrightarrow$
LEDs High Power	↔ 12-14	$\leftrightarrow$
LEDs Infrared	↔ 6-24	$\leftrightarrow$
LEDs Low/Mid Power	↔ 12-14	$\leftrightarrow$
LEDs Ultraviolet	↔ 6-20	$\leftrightarrow$

#### inventronics

	Lead Time (wk)	Price
LED Driver	↔ 12-14	$\leftrightarrow$
LED Module	↔ 12-14	$\leftrightarrow$

### **LEDil**®

	Lead Time (wk)	Price
LED Optic	↔ 6-8	$\leftrightarrow$

#### **ELUMINUS**

	Lead Time (wk)	Price
LEDs High Power	↔ 6-10	$\leftrightarrow$
LEDs High Power General Lighting	↔ 6-8	$\leftrightarrow$
LEDs Infrared	$\leftrightarrow$ 6-12	$\leftrightarrow$
LEDs Low/Mid Power General Lighting	↔ 6-8	$\leftrightarrow$
LEDs Ultraviolet	↔ 6-8	$\leftrightarrow$



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### onsemi

	Lead Time (wk)	Price
Coupler	↔ 6-26	$\leftrightarrow$

### RENESAS

	Lead Time (wk)	Price	
Coupler	↔ 18-20	$\leftrightarrow$	

#### **SAMSUNG**

	Lead Time (wk)	Price
LEDs High Power	↔ 8-10	$\leftrightarrow$
LEDs High Power General Lighting	↔ 8-10	$\leftrightarrow$
LEDs Low/Mid Power	$\leftrightarrow$ 8-10	$\leftrightarrow$
LEDs Low/Mid Power General Lighting	↔ 8-10	$\leftrightarrow$
LEDs Module	$\leftrightarrow$ 12-16	$\leftrightarrow$

#### **TOSHIBA**

	Lead Time (wk)	Price
Coupler	↔ 12-40	$\leftrightarrow$



	Lead Time (wk)	Price
Coupler	↔ 4-46	$\leftrightarrow$
LEDs High Power	$\leftrightarrow$ 12-14	$\leftrightarrow$
LEDs Infrared	↔ 6-24	$\leftrightarrow$
LEDs Low/Mid Power	$\leftrightarrow$ 12-14	$\leftrightarrow$
LEDs Ultraviolet	$\leftrightarrow$ 6-20	$\leftrightarrow$



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### MCU & DSP

#### **SPRESSIF**

	Lead Time (wk)	Price
32 Bit	↔ 8-12	$\leftrightarrow$



	Lead Time (wk)	Price
8 Bit	↔ 16-26	$\leftrightarrow$
16 Bit	$\leftrightarrow$ 16-20	$\leftrightarrow$
32 Bit	↔ 16-26	$\leftrightarrow$

## intel.

	Lead Time (wk)	Price
32 Bit	↔ 4-5	$\leftrightarrow$
64 Bit	↔ 4-5	$\leftrightarrow$
x86 DSP	↔ 4-5	$\leftrightarrow$



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	Lead Time (wk)	Price
8 Bit AVR	↔ 4-10	$\leftrightarrow$
8 Bit PIC	↔ 4-10	$\leftrightarrow$
16 Bit	↓ 4-11	$\leftrightarrow$
32 Bit	<b>↑</b> 0-19	$\leftrightarrow$



	Lead Time (wk)	Price
8 Bit	<b>↑</b> 16-20	$\leftrightarrow$
16 Bit	<b>↑</b> 16-20	$\leftrightarrow$
32 Bit	<b>↑</b> 16-20	$\leftrightarrow$
i.MX	<b>↑</b> 16-20	$\leftrightarrow$
DSP	<b>↑</b> 16-20	$\leftrightarrow$

### RENESAS

	Lead Time (wk)	Price
MCUs 8 Bit	↑ 16-20	$\leftrightarrow$
MCUs 16 Bit	<b>↑</b> 16-20	$\leftrightarrow$
MCUs 32 Bit	<b>↑</b> 16-20	$\leftrightarrow$
MCUs 64 Bit	<b>↑</b> 16-20	$\leftrightarrow$



	Lead Time (wk)	Price
8 Bit	<b>↑</b> 12-16	$\leftrightarrow$
16 Bit	↔ 12-16	$\leftrightarrow$
32 Bit	↔ 12-18	$\leftrightarrow$



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## Program. Logic







	Lead Time (wk)	Price
Program. Logic	↔ 0-16	$\leftrightarrow$



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## Logic

Prices and lead times remain unchanged with no adjustments expected.

### nexperia

	Lead Time (wk)	Price
Standard Logic	↔ 8-14	$\leftrightarrow$

#### onsemi

	Lead Time (wk)	Price
Standard Logic	↔ 8-20	$\leftrightarrow$

#### **SGMICRO**

	Lead	Time (wk)	Price
Standard Logic	$\leftrightarrow$	14-16	$\leftrightarrow$

#### **TOSHIBA**

	Lead	Time (wk)	Price
Standard Logic	$\leftrightarrow$	14-18	$\leftrightarrow$