Utmel: The rise and fall of analog chips

An Analog chip is a kind of chip that does not need an advanced manufacturing process but relies more on a mature manufacturing process.

HONGKONG, September 28, 2022 /EINPresswire.com/ -- Since last year, analog chips have experienced a sharp rise and fall. Recently, there have been many developments in analog chips. The market for analog chips, an important branch of semiconductors, has been remarkably stable compared with the volatile market for digital chips.

On the one hand, the market growth is stable. The market growth rate of analog chips was 11.2% in 2018, and after a decline of 8% in 2019, it grew slightly by 3% in 2020. On the other hand, the price is stable. The average retail price of analog chips is low and stable. In addition, analog chips have a longer life cycle, some analog chips have even more than 10 years of life cycle.

Analog chip prices have been on a roller-coaster ride since 2021. The lack of core caused by the epidemic pushed the analog chip to a peak. Analog chips led the semiconductor market growth in 2021, with a growth rate of 30%, the highest among all semiconductor categories.

The hot market brings with it a rise in prices. According to Utmel, the average selling price of analog chips rose 6% to $0.34 in 2021, which is the second increase in the average analog IC price since 2004.

Over time, the analog chip bubbles burst. In July, analog chip prices began to dive again. Once fried how high, now down on how malicious. After experiencing a sharp decline, only to remove the analog chip industry was blown up by the epidemic bubble. Up to now, the shortage of conventional models has been basically alleviated, the market is in a state of oversupply, and the price gradually tends to be normal.

Different from the oligopoly pattern of the leading digital products, analog IC products have various types. From the perspective of the downstream market of analog IC, the application scenarios are diverse and complex, and the segmentation requirements of each sector are also relatively dispersed. For example, ADAS, audio, entertainment, and electronic control systems in automobiles all need analog IC, which are widely distributed but have great functional differences. It is because the analog chip has a large number of segments, the impact of a single industry boom on the analog chip is relatively small, and the overall relatively stable. Even TI, the industry leader, has a mere 19% share. As you know, TI has more than 100,000 kinds of analog and embedded processor products, covering a wide range of categories.

In fact, because analog chips pay more attention to stability and cost, analog chips are not as demanding as digital chips in terms of technology. The mature manufacturing process is the main process, but this does not mean that the design difficulty of analog chips is lower.

The industry barrier to analog chips is accumulation. The Analog chip product development cycle is long, analog chip designers should be familiar with the design and process flow, but also familiar with most components, experience accumulation is very important. At the same time, the analog chip has a long life cycle, and its products and technologies are difficult to be copied and replaced in a short period of time. Once entered into the product, it can obtain a stable shipment volume and has a high stickiness with customers. The accumulation of long-term competitive advantages, coupled with frequent mergers and acquisitions, leads to a situation where the strong get stronger.

In the global analog chip landscape, Texas Instruments is good at power management and is the leader in this field. ADI started with operational amplifiers and is the leader in data converters, leading the market share in operational amplifiers and power management. Texas Instruments has as many as 80,000 product material numbers, and ADI has more than 45,000 products.

Analog chips can be divided into two categories, one is the signal chain type, and the other is the power management type. In recent years, some local manufacturers have entered the market from a segmented field, and achieved good market results, and formed their own advantages.

Power Management Integrated Circuits mainly provide various power management solutions for electronic devices, and have numerous downstream applications. Power management chips are expected to become the second largest analog chip segment in 2022, according to Utmel. The mobile phone is one of the most important application fields of power management chips. Due to the different voltages currently applied to the normal operation of each module of the mobile phone, the power management chip is required to provide various solutions such as power conversion, regulation, switching, and protection.

A Signal chain analog chip refers to the integrated circuit that has the ability to transmit, transmit, convert, amplify and filter analog signals. According to the different functions, signal chain analog chips can be divided into linear products, converter products, interface products, etc. The linear products mainly include amplifiers and comparators. Converters include ADC and DAC, etc.

Since the 1990s, TI has completed more than 30 mergers and acquisitions, successively divesting computer microprocessors, storage, mobile phone processors, and other businesses. Only by divesting businesses with low gross margins and requiring more funds for independent development, did TI begin to focus on analog chips.

ADI has also strengthened its position after three major acquisitions. The three acquisitions are

Hittite, which is strong in RF and microwave technology (2014), Lint Semiconductor (2016), the world's eighth largest analog player, and Matson (2021), a giant in mixed-signal and power management chips. Even so, they are still not strong enough to eat up more market share because they cannot cover all analog chip segments.

Throughout history, analog chip leaders have grown from huge markets. Analog giants, such as Texas Instruments and Ardeno, benefited directly from the huge demands of American industry and defense in the early 1960s and 1980s. For example, before the 1990s, nearly 21% of ADI's revenue came from the government. Relying on the demand brought by the huge defense spending of the U.S. government, ADI quickly grew into a leading analog chip manufacturer.

Utmel Electronics
Utmel Electronics
+86 133 1694 5041
email us here
Visit us on social media:
Facebook
Twitter
LinkedIn
