Compare chips (CPU) AMD and Intel? What is the best choice?

Are you wondering about choosing chips from two companies: AMD and Intel, not knowing which is the best choice for you? Please see the following article immediately to get the answer.

AMD and Intel are both the number one chip manufacturing brands in the world today. So choosing which product to use between the two brands is something that makes many users wonder. What is the best choice? Let's compare AMD and Intel chips with TipsMake in the article below to find the answer.

Introducing AMD

AMD (Advanced Micro Devices) is the world's second largest multinational corporation headquartered in the United States, second only to Intel in the microprocessor (processor chip) manufacturing market. To compete with competitors, AMD has computer CPU product lines with exclusive chip design structures. Up to now, AMD CPU lines have the same power as Intel chipsets.

Picture 1 of Compare chips (CPU) AMD and Intel? What is the best choice?

AMD chips were born after Intel chips, but this product quickly captured the attention of many users. As of 2020, AMD chips account for about **40% of the market share** in the field of processing chips.

In addition, the company is also known for its good quality graphics processing units (GPUs), competing directly with nVidia. AMD currently produces both discrete GPUs and integrated GPUs on its CPUs.

Introducing Intel

Intel was founded in 1968, headquartered in the United States, and is the inventor of the x86 generation of microprocessor chips, parts that can be found in most personal computers **.** Currently, this is the largest chip brand in the world, popular in every computer company and used in Core i3, Core i5, Core i7, Core i9 processors.

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Initially, Intel was a manufacturer of SRAM and DRAM memory, these two memories were the first foundations for later memory chip manufacturers. Intel chips have the biggest advantage of consuming less power, generating less heat, and rarely overheating.

In particular, the company's chips have fast processing performance and can be easily combined with discrete graphics cards. Intel chips have also been optimized to best suit the needs of heavy gaming or using design software of today's users.

Compare AMD and Intel chips

As two leading brands in the world and offering quite similar features, how are AMD and Intel chips different? Let's continue to learn with TipsMake.

1. Selling price

In general, both **Intel and AMD** offer products with very diverse price segments. Below is the price list of CPU chip products of both brands for your reference:

Processor	AMD	Intel
Threadripper – Cascade Lake-X	$900 – $3,750	$800 – $1000 ($2,999)
AMD Ryzen 9 – Intel Core i9	$434 – $799	$459 – $505
AMD Ryzen 7 – Intel Core i7	$294 – $449	$300 – $370
AMD Ryzen 5 – Intel Core i5	$149 – $299	$125 – $200
AMD Ryzen 3 – Intel Core i3	$95 – $120	$78 – $173

Although prices are spread across all segments, there are some differences between the two brands. Specifically, although AMD has lower popularity, it has many advantages in the popular segment. The company chose to focus a lot on this segment, offering good quality products at low prices.

Another advantage is that AMD's CPUs in the affordable segment also integrate more benefits than Intel's even though they have the same or lower price. Therefore, it is favored by many customers. For example, the Ryzen 7 3700X is equipped with twice the processing threads compared to the Intel Core i7-9700K ($374) but costs only $329.

For customers who only need to perform simple tasks and play games with light configurations like LOL, **AMD** is a suitable choice. However, if you want to experience games with heavy configuration as well as need to use a lot of professional graphic design software, there is no other choice than **Intel.**

2. Popularity

Both companies launch new products regularly every year. In recent years, AMD's multitasking processors have been slightly better equipped than Intel's. But the biggest problem this company faces is the lack of compatibility with other components. Specifically, the motherboard and cooler options are two components that are not completely compatible due to differences in sockets on AMD CPUs.

Picture 3 of Compare chips (CPU) AMD and Intel? What is the best choice?

In contrast, Intel parts are more common, which overcomes this drawback, leading to lower start-up costs to install. Users will have a variety to choose from to suit their needs and budget.

However, Intel is facing a supply shortage problem as AMD's Coffee Lake Refresh, AMD Ryzen, and Ice Lake processors are now starting to be widely distributed on the market. That's why in recent years, AMD is gaining better sales than Intel.

3. Graphics processing ability

In terms of **graphics processing capabilities** , AMD shows higher performance when successfully developing specialized graphics cards that Intel has not had until now. AMD chips are considered the optimal choice for integrated graphics, but in terms of computing performance, they are much worse than Intel. Although with 3rd generation Ryzen AMD is gradually closing that gap, it is still not a competitor of Intel.

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This is most evident when using the same high-end graphics card. Intel's i3 or i5 CPUs can deliver 35 to 45 FPS compared to AMD CPUs in their price range. Therefore, for those who want to add a separate VGA graphics card, Intel will be the more suitable choice.

4. Parameters and productivity

When it comes to content creation and threaded productivity applications, AMD clearly has an advantage with more cores, threads, and cache. This makes AMD's CPUs have superior performance compared to Intel's.

For example, the Ryzen 9 5950X series for the popular segment has up to 16 cores and more threads compared to Intel's most powerful Core i9-10900K series. In the high-end segment, AMD chips are also currently dominating with AMD CPUs possessing 64 cores and 128 threads (Threadripper 3990X series). This number of cores is 3.5 times more than Intel's HEDT models.

Picture 5 of Compare chips (CPU) AMD and Intel? What is the best choice?

In addition, AMD possesses powerful cache memory and PCIe 4.0 technology connectivity , providing extremely impressive performance on both desktop and mainstream HEDT platforms. Ryzen 5000 series processors are currently **leading the way in single-threaded performance** in benchmark tests.

Therefore their price will be much more expensive than the corresponding Intel flagship lines. However, the amount of money will not be too large for you to experience this product from AMD.

5. Overclocking ability

Basically, CPUs available on the market today all have fairly stable clock speeds. However, many users need to **overclock** to improve CPU performance. Accordingly, AMD will support users with overclocking better than Intel chips in the low-cost segment.

For example, you can overclock for as little as **$45** when using AMD's **A-Series APU .** As for Intel, the cheapest chip is **the Intel Core i3-9350K** priced at **$173** . However, with AMD, performance will not be significantly increased as many people expect.

Picture 6 of Compare chips (CPU) AMD and Intel? What is the best choice?

Therefore, if you want the best overclocking for your computer processor, there is no better choice than Intel. With superior hyper-threading and turbo-boost technology, high-end CPUs can be equipped with up to 8 to 10 cores and overclocking. Performance will be improved significantly compared to the basic speed of available Intel chips. This is also something that AMD chips cannot compete with.

In short, AMD offers a more user-friendly price, but the new Intel chip offers truly impressive overclocking capabilities.

6. Energy and heat consumption

AMD CPUs use **7nm Process Node** while Intel CPUs focus on improving **14nm Process Node** to control power consumption and heat. TSMC's 7nm Node helps AMD achieve better efficiency than Intel's 14nm Node. Although in the Ryzen 3000 and 5000 series, the 7nm chip is not as effective as before. But basically, AMD still consumes less power than Intel. AMD's cooling requirements aren't too great either.

Picture 7 of Compare chips (CPU) AMD and Intel? What is the best choice?

Meanwhile, Intel is famous for its low energy and heat consumption, however, in the latest products, this is no longer the case. Because Intel had to increase power to provide higher performance, in order to compete with AMD's strong development.

7. Software and drivers

AMD's Zen-based processors have brought many new benefits to both the mainstream desktop and HEDT markets. In recent years, instead of focusing on valuable features that consume a lot of power, AMD has turned to high-end designs, possessing more cores and higher performance, while still ensuring low power consumption. . However, AMD CPU is plagued with problems with the CPU and graphics chipset drivers.

Picture 8 of Compare chips (CPU) AMD and Intel? What is the best choice?

Likewise, Intel, in order to compete with AMD's strong development, has added more features and cores in new products. But sadly, high power consumption and high heat generation have not been resolved. However, Intel still maintains its position in the market, with optimized processors of the OEM line.

In short, despite many new advances, Intel still has outstanding advantages in this field.

8. Gaming performance

For gamers or those who love playing games and want to experience more new games, paying attention to the gaming performance of the chip is essential. Specifically, Intel chips are still the optimal choice for gamers because in terms of single-core performance, this company's processors are the top on the market. However, the cost that the buyer has to pay will be higher.

Picture 9 of Compare chips (CPU) AMD and Intel? What is the best choice?

Besides, AMD also provides gaming chips with new generation processors, providing extremely powerful performance such as Ryzen 5000 supporting Zen 3 or Ryzen 9 5900X. However, the biggest advantage of

current AMD chips is still handling multi-threaded requests or used to edit heavy videos. Because this chip has more cores and a higher number of threads than Intel chips.

For example, Intel's Core i9-9900K when compared to ADM's Ryzen Threadripper 2970WX shows that single-core performance is much more dominant. Meanwhile, if comparing multi-threaded processing capabilities, ADM's Ryzen 7 3700X will outperform the Core i7-9700K.

To help you easily compare AMD and Intel chips, TipsMake has compiled the following information table:

	AMD chips	**Intel chips**
Price	Usually cheaper, dominating the popular segment.	More expensive, dominant in the high-end segment.
Gaming performance	Gaming performance is not great but is more suitable for video editing and multi-threaded processing	Stable and smooth gaming performance
Overclocking	– Popular and mid-range segment: Many APU versions support overclocking. – High-end segment: Poor overclocking.	– Popular and mid-range segment: Few versions are capable of overclocking. – High-end segment: Extremely good overclocking.
Software and drivers	There are improvements with Zen but there are issues with the CPU and graphics chipset drivers	Maintain the top 1 position with OEM and graphic driver development Xe Graphics
Specifications and features	More cores, more threads, better multi-threaded performance.	Fewer cores, fewer threads, better single-threaded performance.
Popularity	Less due to lack of compatibility with many other components	More due to compatibility with many parts, low initial installation cost.

Should I choose an AMD or Intel chip?

To answer the confusion of many users today when choosing AMD or Intel chips, TipsMake would like to provide a reference comparison table as follows:

Content	**Intel chips**	**AMD chips**
Characteristic	– Intel CPUs have high coverage, familiar to all computer companies. – Motherboards have many manufacturers that can support them. – Resell used machines at a good price and easy to sell, easy to upgrade the machine model. – CPU clock speed is always moderate, not too high, not too hot. – Motherboards from cheap to high-end have many repair and support centers.	– AMD is cheaper, price goes hand in hand with quality. – Higher CPU clock speed should run better games or graphics in the same chip line. – Heats up quickly so it spoils faster in the Vietnamese environment. – The gaming CPU line is focused on upgrading but the support system is not adequate.

Subjects of use	– Is a safe choice for ordinary users who are not very knowledgeable about technology. – Suitable for gamers when choosing Intel CPU with discrete graphics card.	– For students or office workers, using basic tasks, playing games with moderate configuration, AMD chips are the ideal choice. – For those who need to process a lot of video, an AMD CPU with many cores and threads for quick processing and rendering will be very suitable.

Epilogue

Above is the most general information about two chip companies AMD and Intel. Hopefully with the above article, you have a lot of information and can choose the most suitable chip according to your needs and budget.

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