#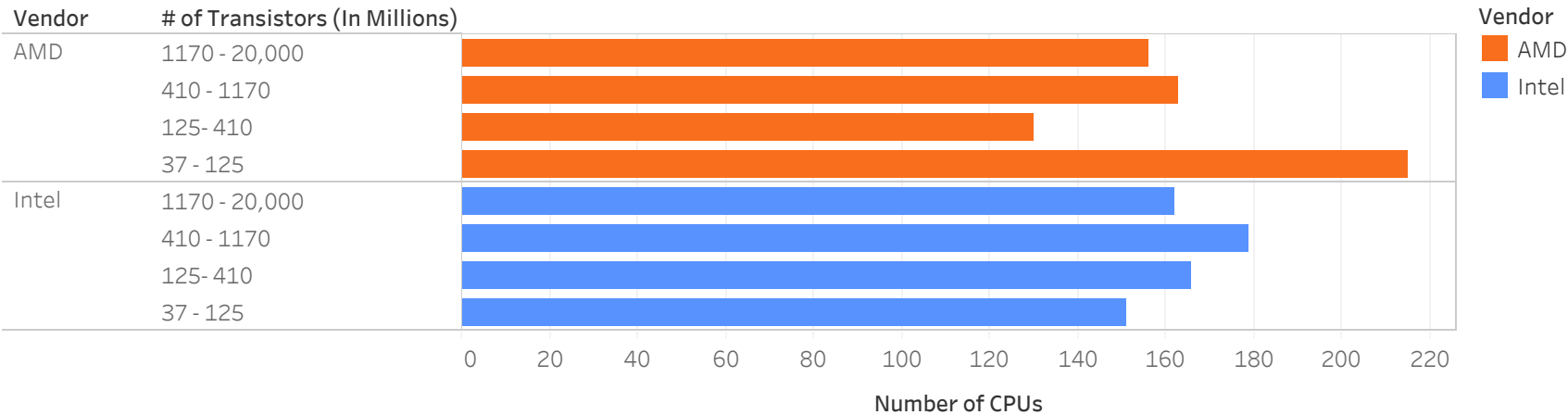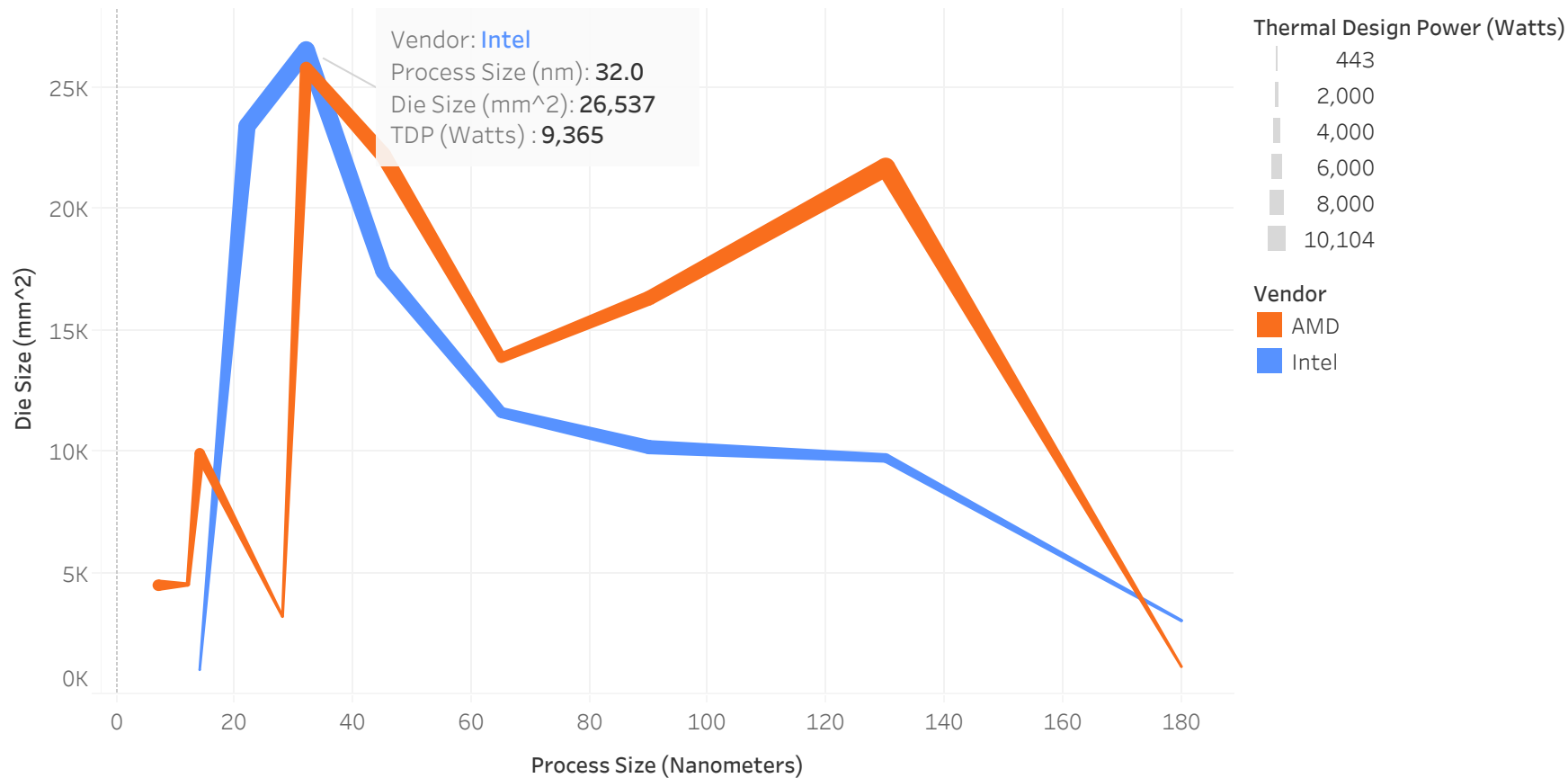 Intel has **produced more chips with higher ammounts of transistors**, meanwhile AMD has more chips with smaller ammounts of transistors.

| Vendor	# of Transistors (In Millions)
AMD	1170 - 20,000
	410 - 1170
	125- 410
	37 - 125
Intel	1170 - 20,000
	410 - 1170
	125- 410
	37 - 125

Number of CPUs

Vendor
- AMD
- Intel

Count of Transistors for each # of Transistors (In Millions) broken down by Vendor. Color shows details about Vendor.

Both Intel and AMD manufacture chips with large dies and miniscule process sizes, but Intel has been more successful in making their **high-end chips more thermally adaptive.**
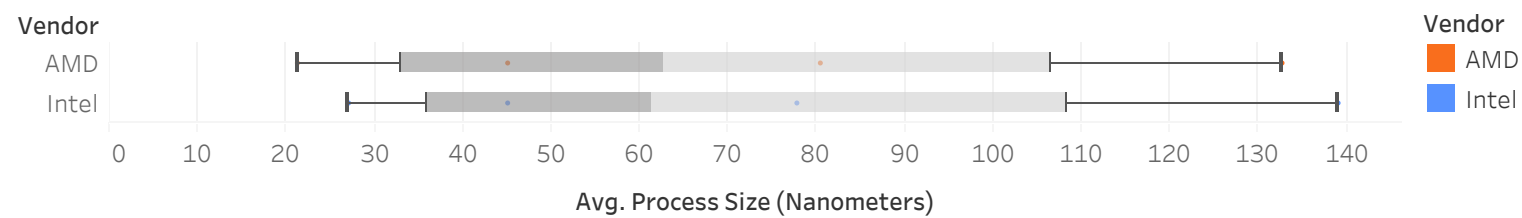

Vendor: Intel
Process Size (nm): **32.0**
Die Size (mm^2): **26,537**
TDP (Watts) : **9,365**

Thermal Design Power (Watts)
443
2,000
4,000
6,000
8,000
10,104

Vendor
AMD
Intel

Die Size (mm^2)

25K
20K
15K
10K
5K
0K

0   20   40   60   80   100   120   140   160   180

Process Size (Nanometers)

The trend of sum of Die Size1 for Process Size (Nanometers). Color shows details about Vendor. Size shows sum of TDP.

Metrics aside, AMD makes significantly more CPU chips than Intel, with their biggest leads being in **mid-tier chips from 2200-3000 MHz.**
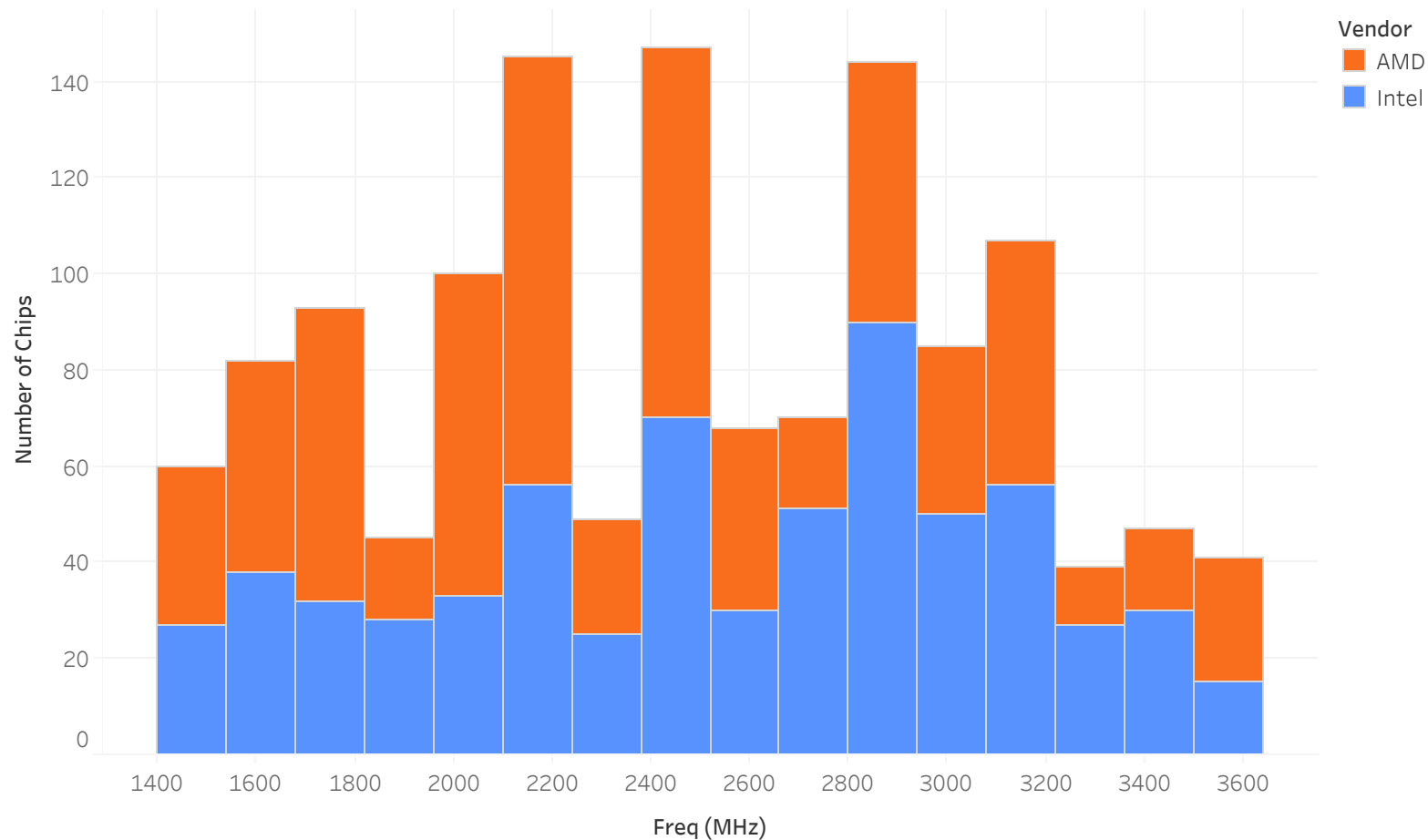

The trend of count of Freq for Freq (bin). Color shows details about Vendor.

Both Intel and AMD's typical process size ranges from 35-105 nanomemters,
with their **newest and oldest chips representing their edge cases.**

Vendor

AMD

Intel

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 |

Avg. Process Size (Nanometers)

Vendor

■ AMD
■ Intel

Average of Process Size (Nanometers) for each Vendor. Color shows details about Vendor. Details are shown for Process Size (nm).

When it comes to GPUs, NVIDIA has a **clear lead in the market**, with their sloweset FP64 chips being faster than AMD's fastest FP64 chips.

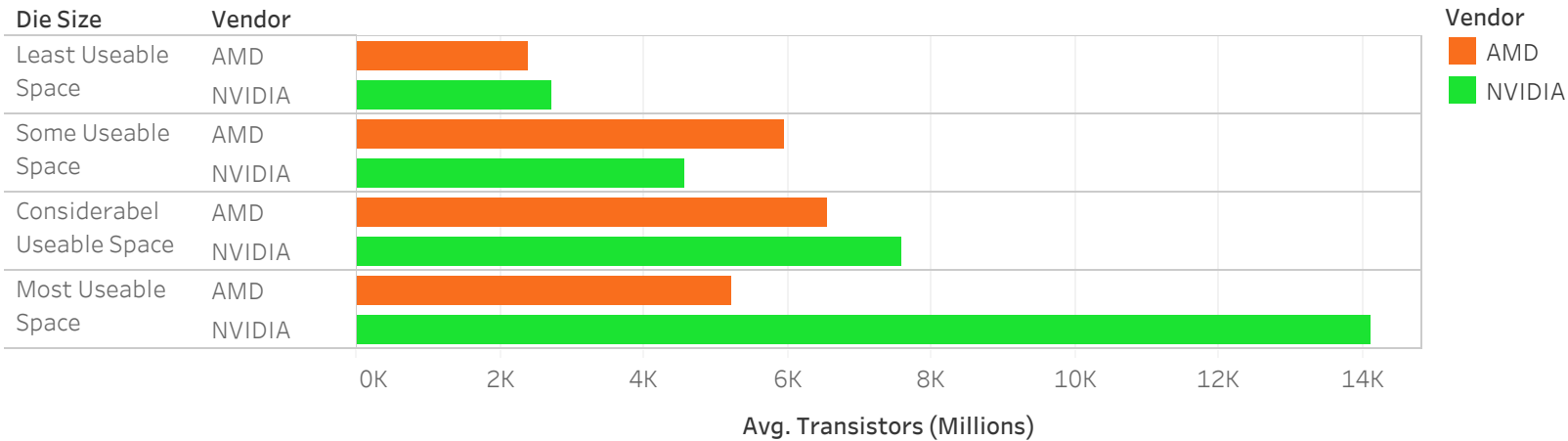Vendor / FP64 GFLOPS (Billions of Floating Point Operations)
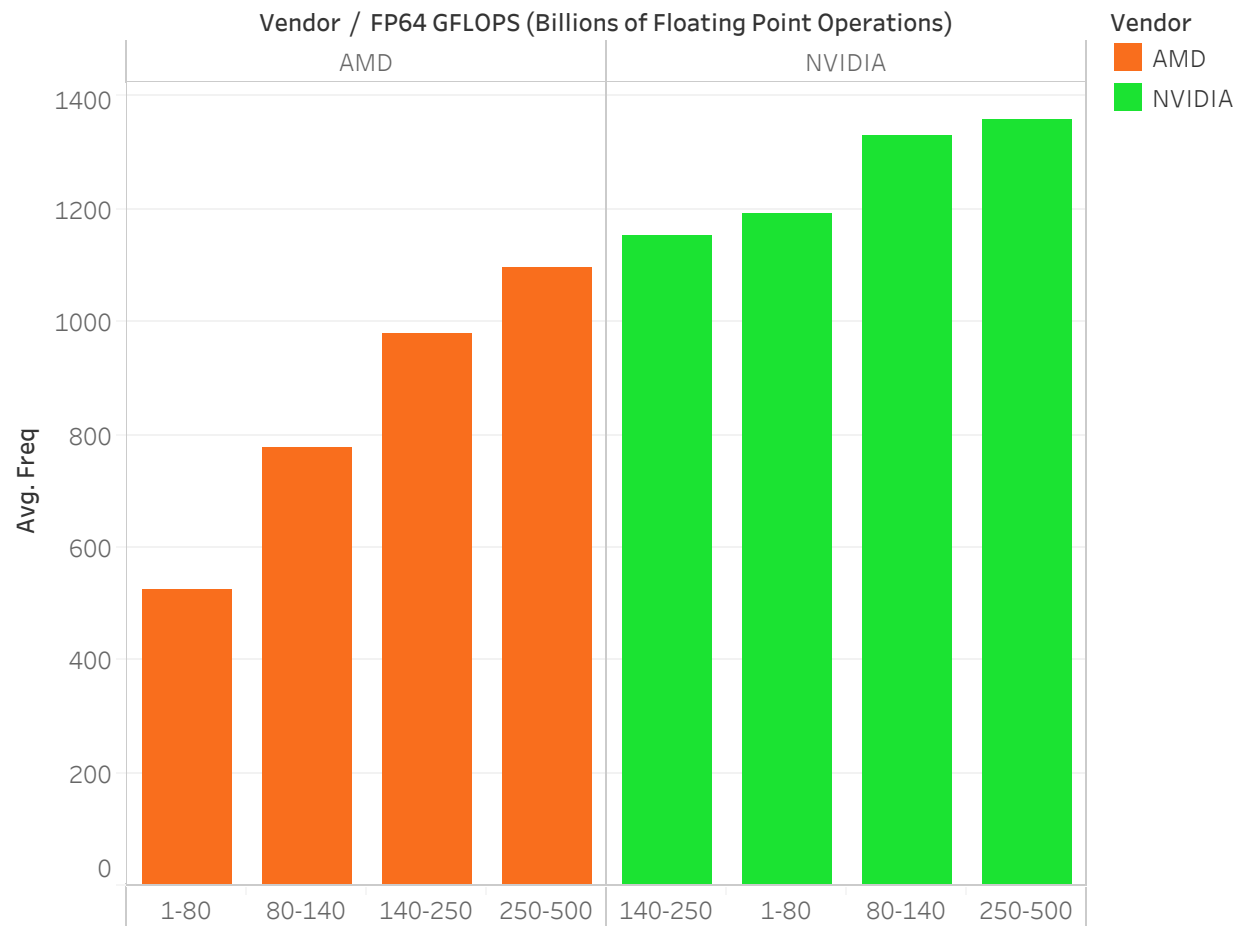
Average of Freq for each FP64 GFLOPS (Billions of Floating Point Operations) broken down by Vendor. Color shows details about Vendor.

NVIDIA continues to outperform AMD even in FP32 chips, however AMD was able to exceed NVIDIA's bottom line on their least powerful FP32 chips.

**Vendor / FP32 GFLOPS (Billions of Floating Point Operations)**
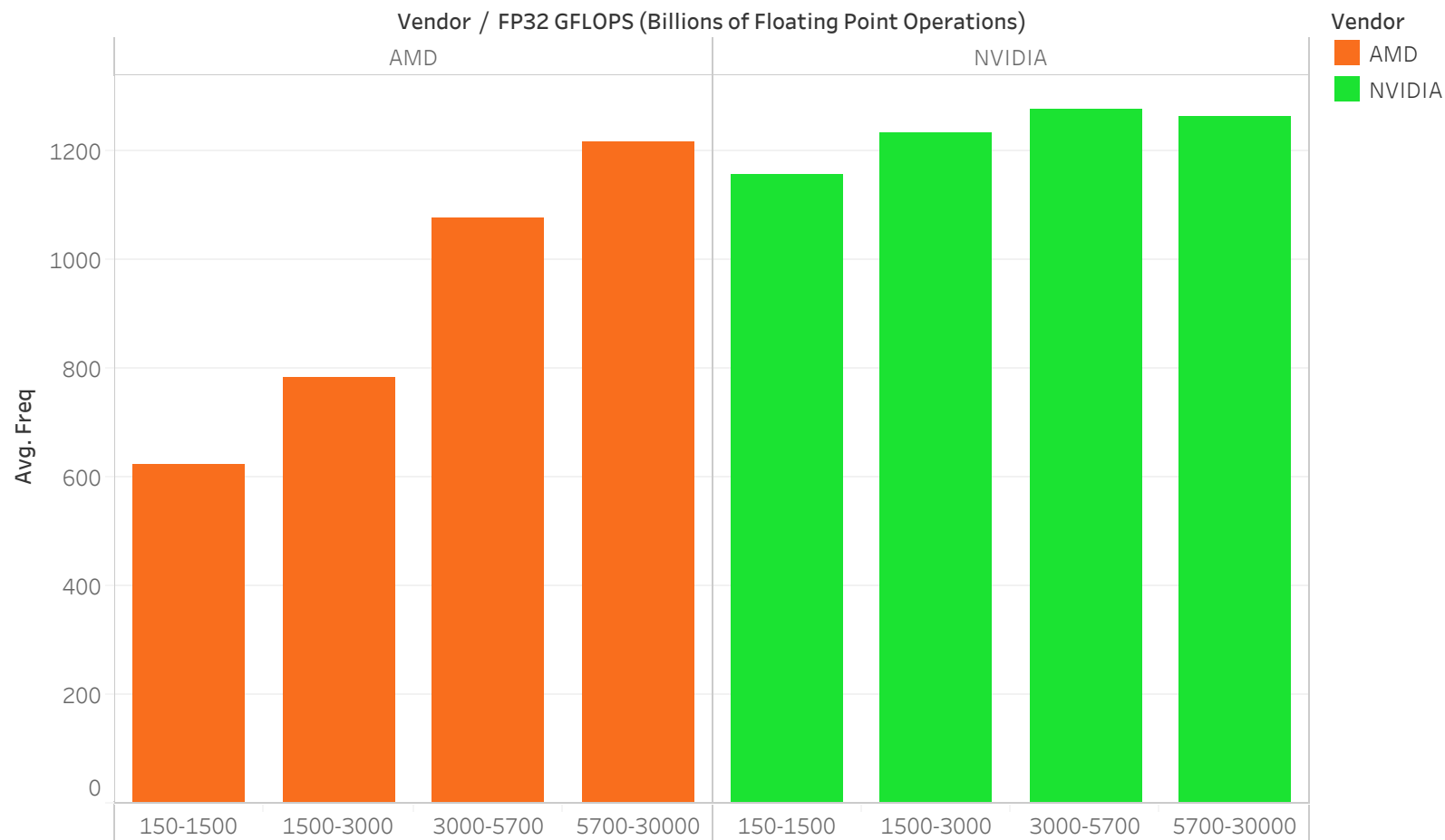
Average of Freq for each FP32 GFLOPS (Billions of Floating Point Operations) broken down by Vendor. Color shows details about Vendor.

NVIDIA vastly outperforms AMD on GPU chips with the largest Die sizes, nearly tripling the number of transistors on those chips compared to AMD hardware.

Die Size	Vendor	
Least Useable Space	AMD	
	NVIDIA	
Some Useable Space	AMD	
	NVIDIA	
Considerabel Useable Space	AMD	
	NVIDIA	
Most Useable Space	AMD	
	NVIDIA	

Avg. Transistors (Millions)

Vendor
- AMD
- NVIDIA

Average of Transistors for each Vendor broken down by Die Size. Color shows details about Vendor.

For some time **AMD** had a leg up over **NVIDIA**'s TDP ratings, **but next-gen chips have seen AMD's TDP drop significantly** while **NVIDIA** continues to rise.

Transistors (Millions) / Vendor

| 1200 - 3300 | 3300 - 5000 | 5000 - 7200 | 7200 - 28300 |
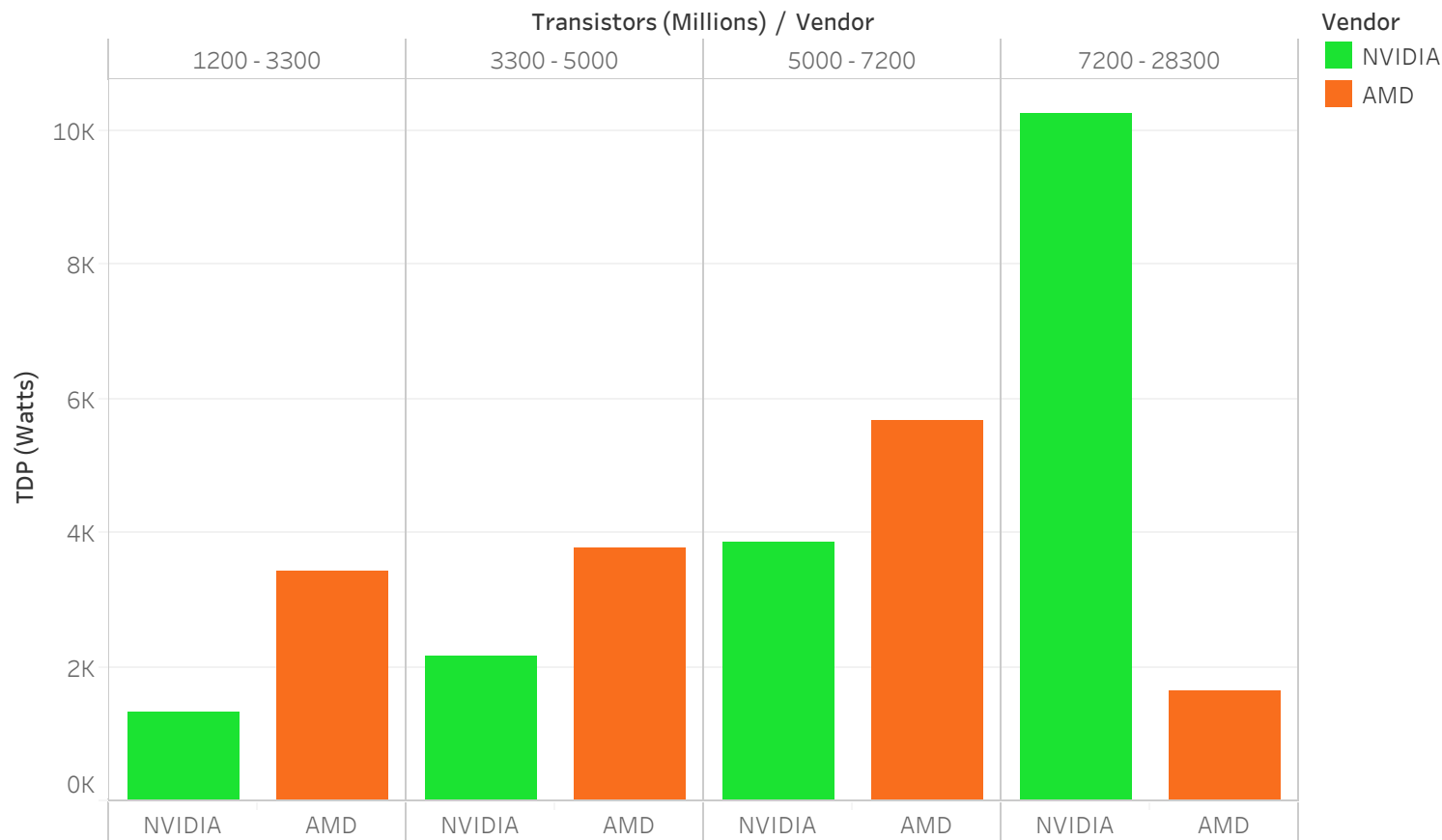
Vendor
- **NVIDIA**
- **AMD**

Sum of TDP for each Vendor broken down by Transistors (Millions). Color shows details about Vendor.