

ELECTRONICS

Sourcing

SEPTEMBER 2023



**TOP 50
GLOBAL
AUTHORIZED
DISTRIBUTORS
REPORT
2023**

Worldwide Distributors Overcome China Slump to Achieve Positive Growth in 2022

In this article, ECIA's chief analyst, Dale Ford, provides updated unique research on the Top Worldwide Authorized Distributors

This report continues an annual update of the true original "Top 50 Worldwide Authorized Distributors" research that was published for the first-time in 2021. Once again, the goal of the research conducted to develop the data presented in this article is to include the major authorized distributors from all three regions. Given the dominating presence of Asia as a distribution market, a second goal was to provide total revenue data for the top electronics component country markets in Asia. According to the research presented in this article, Asia saw its share of the worldwide market of the Top 50

authorized distributors slip from 75% in 2021 to 71% in 2022. The Americas and EMEA distribution markets both expanded their share of the worldwide market by roughly 2% each to account for 15.6% and 12.9% market share, respectively. Still, 37 out of the top 50 authorized distributors are headquartered in Asia and account for 57.6% of 2022 distribution revenues in this analysis.

The publication of this update is a continuation of a plan to develop additional research on the electronic component distribution markets. ECIA provides its members and the industry with a wide range of highly valuable research including detailed

sizing of component total available market (TAM) and distribution total available market (DTAM) for the Americas, EMEA and Asia for selected key categories. In addition, it provides data on component lead times, bookings trends, electronics component industry sentiment, best practices for key distribution activities and more.



Dale Ford
chief analyst,
ECIA



The top 50 worldwide authorized distributor research methodology and results

As noted in the original publication of Top 50 worldwide authorized distributors, the task of identifying and sizing the top authorized distributors around the world presents significant challenges beyond the research developed for the Americas Authorized Distributor data. For example, participation in surveys by industry companies is a well understood practice (if not always supported) by Americas and European companies. The same is not true in Asia where personal relationships and communication are key to gathering helpful information. Surveys have a very low participation rate in Asia. In addition, most companies headquartered in China are private and not easily accessible for

communication. However, some major players have gone public in recent months which sheds valuable light on their activities and revenues. Given these and other issues, the methodology pursued for this research needs to be briefly explained.

1. Surveys were used to gather information for this research and every effort was made to identify contacts at all companies to invite participation in the survey. As anticipated, the level of participation by companies headquartered in Asia was low. However, a number of companies headquartered in Asia continued to participate in the research.
2. To expand the data captured in this report, extensive research of published financial data for all public companies

was pursued. A number of private companies also provide extremely helpful top-level financial data.

3. Input from major manufacturers and distributors was solicited to both identify top distributors and provide guidance on the revenues of private companies. Roughly 100 companies were identified for consideration in the top 50. Companies were excluded both for falling below the top 50 and because they were engaged as a broker instead of authorized distribution.
4. Finally, web-based secondary research was a source of additional data that supported modeling and analysis used to create estimates in areas where survey or published data was not available.

The tables and figures presented in this report have been created based on the methodology described above.

Distributors faced a challenging year as market and economic headwinds constrained overall growth to low single-digits. China was a particular challenge with a substantial impact given its 46% share of the global distribution market. China distribution market revenues declined by 6.6% in 2022. Fortunately, all other countries in the region delivered growth between 0.1% and 12.7% except for the small Australia / New Zealand market that fell by 3.2%. In a stark contrast with Asia's struggles, Americas authorized distribution revenue grew by 19.3% in 2022 and the European market expanded by 17.1%.

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Top 10 Americas sales

Rank 2022	Company	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Arrow Electronics, Inc.	9,592.5	7,827.9	22.5	31.6
2	Avnet	6,605.7	5,005.5	32.0	21.7
3	Digi-Key	2,820.3	2,585.0	9.1	9.3
4	Future Electronics	2,535.0	2,480.0	2.2	8.3
5	TTI	2,000.0	1,760.0	13.6	6.6
6	Mouser Electronics	1,731.9	1,382.7	25.3	5.7
7	RS Group	1,177.3	905.9	30.0	3.9
8	DAC / Heilind	1,033.4	948.9	8.9	3.4
9	Sager	459.0	381.0	20.5	1.5
10	Master Electronics	439.6	368.0	19.5	1.4
	Others	1,993.4	1,824.3	9.3	6.6
	TOTAL TOP 50	30,388.1	25,469.1	19.3	100.0

Top 10 EMEA sales

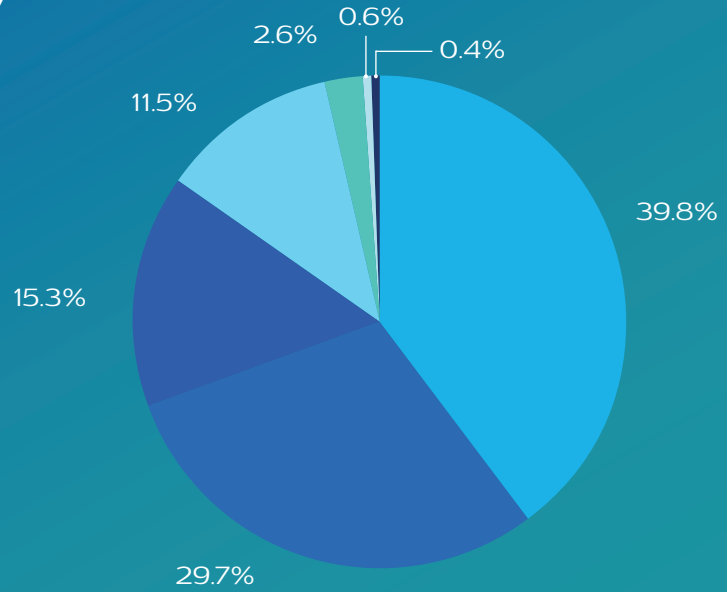
Rank 2022	Company	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Avnet	8,635.1	6,911.4	24.9	34.3
2	Arrow Electronics, Inc.	7,628.0	6,248.8	22.1	30.3
3	RS Group	2,170.6	2,113.7	2.7	8.6
4	Future Electronics	1,638.0	1,600.0	2.4	6.5
5	Mouser Electronics	1,329.0	1,017.8	30.6	5.3
6	TTI	1,155.0	1,120.0	3.1	4.6
7	Rutronik	1,114.7	1,110.0	0.4	4.4
8	Digi-Key	923.1	855.7	7.9	3.7
9	Nexty Electronics	227.3	227.9	-0.3	0.9
10	Macnica	114.2	75.0	52.3	0.5
	Others	228.4	216.4	5.5	0.9
	TOTAL TOP 50	25,163.4	21,496.7	17.1	100.0

Top 10 Asian sales

Rank 2022	Company	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	WPG	22,722.9	27,468.5	-17.3	16.3
2	WT Microelectronics	19,192.2	16,044.6	19.6	13.8
3	Arrow Electronics, Inc.	11,567.5	12,280.8	-5.8	8.3
4	Avnet	11,087.6	9,676.4	14.6	8.0
5	Macnica	6,464.0	5,690.0	13.6	4.7
6	CECport	6,435.4	5,950.7	8.1	4.6
7	Supreme Electronics	5,542.7	7,310.1	-24.2	4.0
8	Nexty Electronics	4,504.8	4,404.3	2.3	3.2
9	EDOM Technology	3,915.5	3,776.0	3.7	2.8
10	S.A.S Dragon	3,170.9	4,506.3	-29.6	2.3
	Others	44,384.6	45,510.9	-2.5	31.9
	TOTAL TOP 50	138,988.2	142,618.5	-2.5	100.0

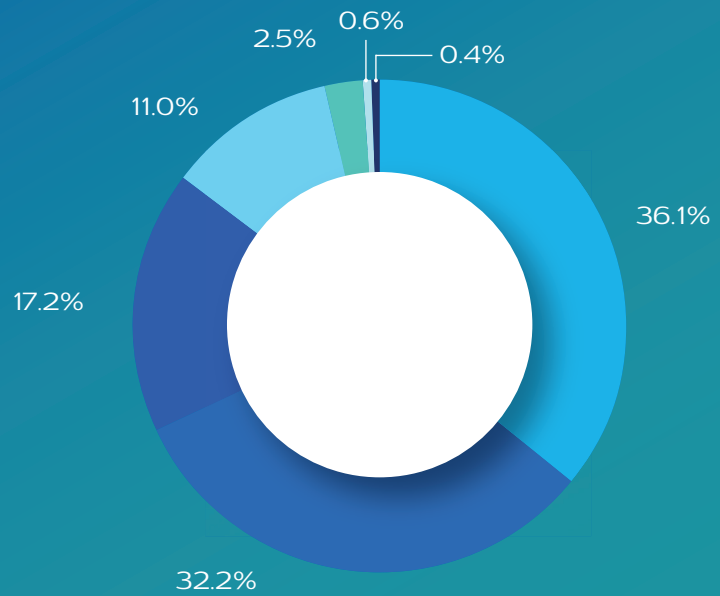


2022 Revenue Share by Headquarters Location



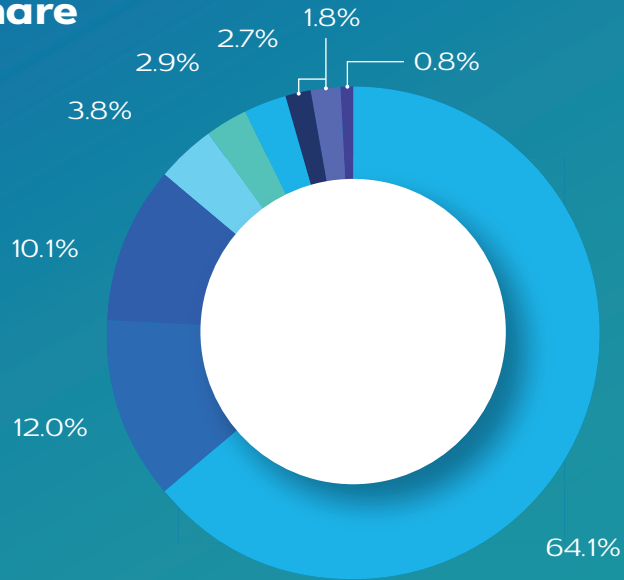
Total Revenue: \$194.6 B

2021 Revenue Share by Headquarters Location



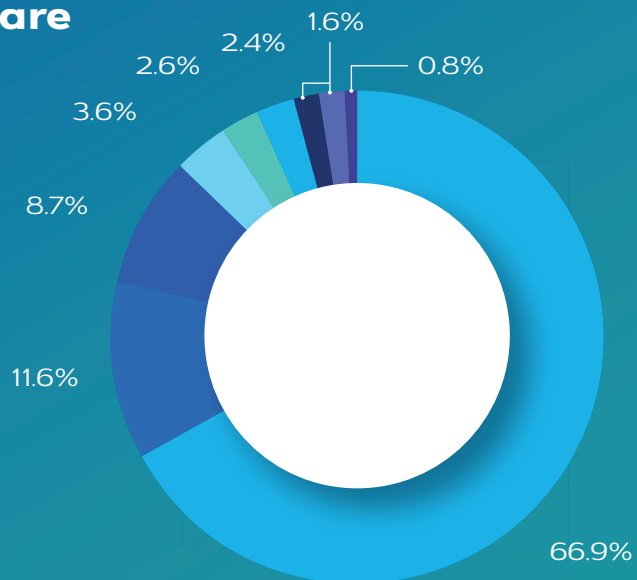
Total Revenue: \$189.6 B

2022 Top 50 Revenue Share by Asian Countries



Total Revenue: \$139.0 B

2021 Top 50 Revenue Share by Asian Countries

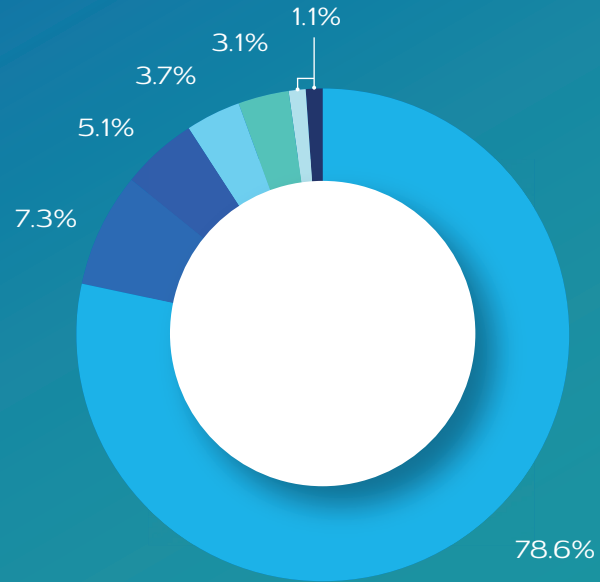


Total Revenue: \$142.6 B



2022 Worldwide Revenue Share by Component

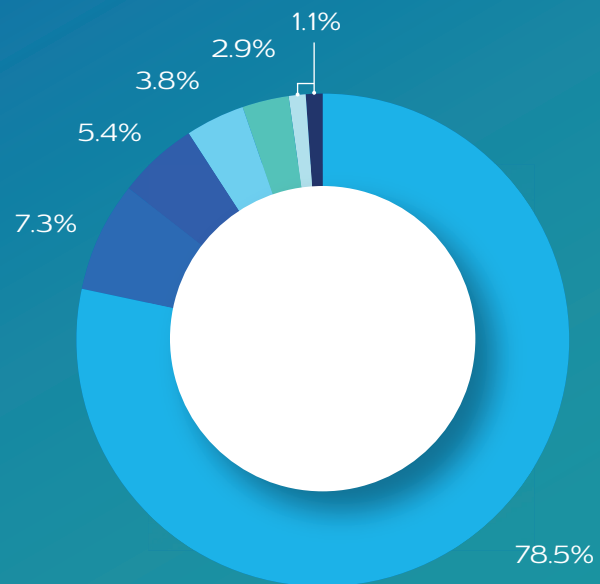
- Semiconductors
- Interconnect
- Passives
- Electro-Mechanical
- Other
- Power & Batteries
- Computer/System



Total Revenue: \$194.6 B

2021 Worldwide Revenue Share by Component

- Semiconductors
- Interconnect
- Passives
- Electro-Mechanical
- Other
- Power & Batteries
- Computer/System

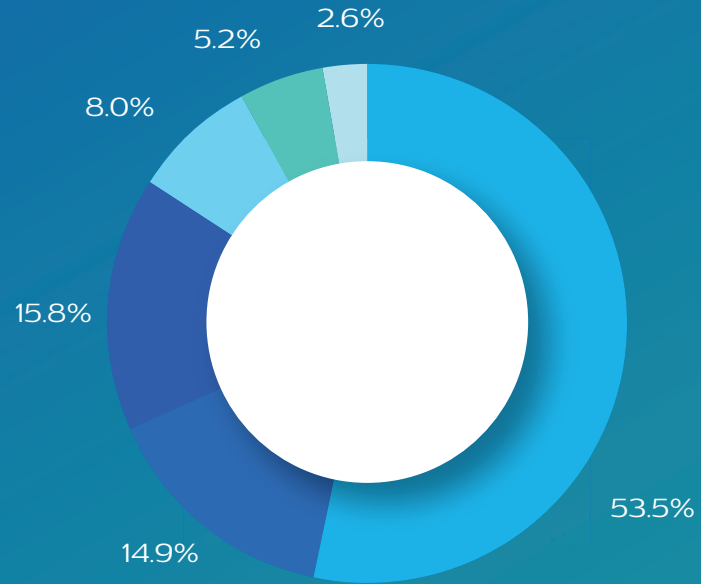


Total Revenue: \$189.6 B



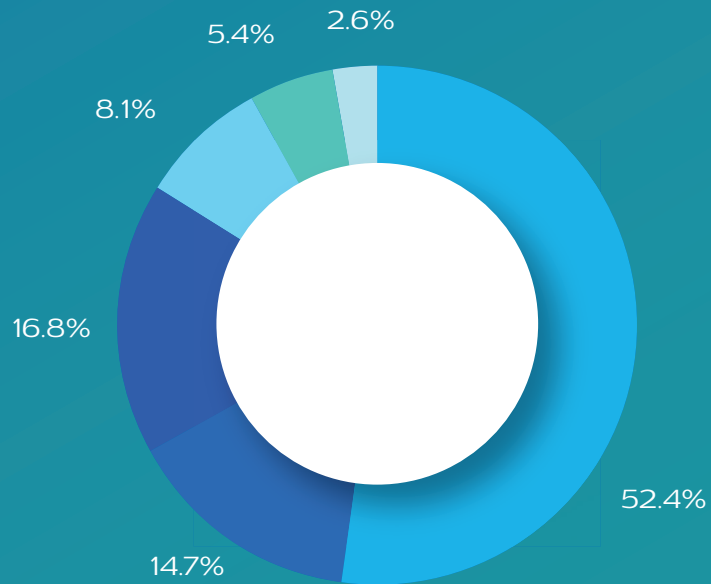
Worldwide Revenue Share by Rank (2022)

- Top 5
- Rank 6 to 10
- Rank 11 to 20
- Rank 21 to 30
- Rank 31 to 40
- Rank 41 to 50



Total Revenue: \$194.6 B

Worldwide Revenue Share by Rank (2021)

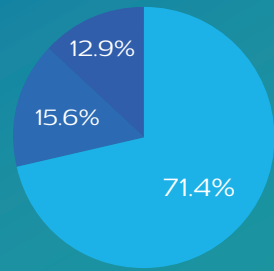


Total Revenue: \$189.6 B

Total worldwide revenue for the Top 50 authorized distributors in 2022 grew to \$194.6 B from \$189.6 B in 2020, an increase of a mere \$5 billion. Nineteen out of the top 50 distributors failed to achieve revenue growth in 2022. The highest growth in 2022 was achieved by Shannon Semi, a newcomer that burst on the scene in 2021, with 45.7% growth. Another 6 distributors achieved 20%+ growth. The steepest decline was suffered by Techtronics with sales falling by -31.2% in 2022. On a worldwide basis, there was no meaningful change in the mix of revenues by component type. Semiconductors sustained their commanding share of the market at 78.6%. Despite a major market slump, the strongest demand for distribution revenues in 2022 was generated by the mobile communications market at \$35.7 B (18.3%). However, revenues in this segment fell by over 10% in 2022. The Energy & Power, Medical Electronics, and Building/Home Control/Security drove extremely high growth in 2022.

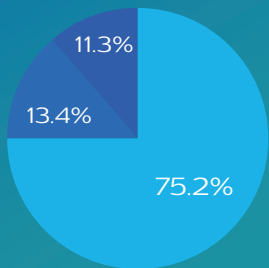
The top five worldwide distributors achieve a minor increase in their share of total worldwide revenues among the Top 50 to 53.5%. The top five also achieved the highest growth in 2022 with an increase of 4.9%. The strongest growth among the Top 5 came from Avnet with an impressive 21.9% growth pushing them up to #2 in the rankings as WPG suffered a challenging year and fell to #3. There are a notable number of electronic component distributors with significant revenues that did not achieve ranking in the Top 50. If it is estimated that the Top 50 account for 90% of all worldwide revenue, the global electronic component authorized distributor market would be estimated at \$216 B in 2022.

2022 Top 50 total revenue share by region



Total Revenue: \$194.6 B

2021 Top 50 total revenue share by region



Total Revenue: \$189.6 B

Top 10 global sales by category

Top 10 passive component sales

Rank 2022	Company	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	TTI	1,752.0	1,736.6	0.9	17.8
2	Arrow Electronics, Inc.	1,209.1	1,265.2	-4.4	12.3
3	Avnet	1,184.8	971.7	21.9	12.1
4	Digi-Key	1,071.0	1,037.1	3.3	10.9
5	Mouser Electronics	735.4	653.4	12.5	7.5
6	Glorison 荣采集团	369.4	416.5	-11.3	3.8
7	WISEWHEEL 唯时信	346.5	432.1	-19.8	3.5
8	Future Electronics	325.0	331.5	-2.0	3.3
9	WPG	323.2	417.2	-22.5	3.3
10	SamT	295.4	304.2	-2.9	3.0
	Others	2,218.7	2,661.6	-16.6	22.6
	TOTAL TOP 50	9,830.4	10,226.9	-3.9	100.0

Top 10 semiconductor (active) sales

Rank 2022	Company	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Arrow Electronics, Inc.	22,742.5	20,532.5	10.8	14.9
2	WPG	21,553.6	25,852.2	-16.6	14.1
3	Avnet	20,009.6	16,195.0	23.6	13.1
4	WT Microelectronics	19,192.2	16,044.6	19.6	12.5
5	CECport	6,338.9	5,848.6	8.4	4.1
6	Macnica	5,778.6	5,099.8	13.3	3.8
7	Supreme Electronics	5,603.3	6,880.5	-18.6	3.7
8	Future Electronics	5,070.0	4,953.4	2.4	3.3
9	Nexty Electronics	4,292.7	3,552.2	20.8	2.8
10	EDOM Technology	3,919.1	3,791.8	3.4	2.6
	Others	38,444.3	39,677.4	-3.1	25.1
	TOTAL TOP 50	152,944.8	148,427.9	3.0	100.0

Top 10 electro-mechanical sales

Rank 2022	Company	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Avnet	868.8	712.6	21.9	12.0
2	Arrow Electronics, Inc.	863.6	1,080.7	-20.1	12.0
3	Digi-Key	510.0	589.3	-13.4	7.1
4	Restar Group	473.5	516.0	-8.2	6.6
5	Ryosan	418.2	424.7	-1.5	5.8
6	Mouser Electronics	408.5	326.7	25.1	5.7
7	RS Group	404.7	385.8	4.9	5.6
8	Carlton-Bates	294.8	241.9	21.9	4.1
9	DAC / Heillind	285.8	241.0	18.6	4.0
10	SAMT	271.7	280.8	-3.2	3.8
	Others	2,421.6	2,334.9	3.7	33.5
	TOTAL TOP 50	7,221.3	7,134.2	1.2	100.0

The final tables of this report present the complete list of Top 50 Worldwide Authorized Distributors for 2022 along with Top 10 rankings for individual component categories and top sales growth. As a major enhancement to this research the revenues for ten Asian countries that drive a large share of global electronics equipment production: Mainland China/Hong Kong, Taiwan, Japan, Malaysia/Singapore, India, South Korea, Vietnam, and Australia/New Zealand. As expected, China is the dominant country for revenues with nearly 2/3rds of all Asian distribution revenue. The next largest country markets are

Taiwan with 12.0% share and Japan with 10.1% share in 2022. The size of the emerging India and Vietnam distribution markets is a common question. Based on the research for this report, the top 50 distributors account for \$4.0 B in India and \$2.5 B in Vietnam in 2022.

[Continues on page 53 >](#)



China is the dominant country for revenues with nearly 2/3rds of all Asian distribution revenue

Top 10 interconnect sales

Rank 2022	Company	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Avnet	2,948.8	2,418.4	21.9	20.8
2	Arrow Electronics, Inc.	2,533.3	2,662.1	-4.8	17.8
3	TTI	1,679.0	1,498.2	12.1	11.8
4	DAC / Heillind	1,013.3	952.0	6.4	7.1
5	Digi-Key	867.0	589.3	47.1	6.1
6	Future Electronics	858.0	828.8	3.5	6.0
7	Mouser Electronics	735.4	555.4	32.4	5.2
8	RS Group	551.9	553.6	-0.3	3.9
9	Restar Group	448.6	442.3	1.4	3.2
10	WPG	369.4	445.0	-17.0	2.6
	Others	2,204.7	2,891.3	-23.7	15.5
	TOTAL TOP 50	14,209.3	13,836.2	2.7	100.0

Top 10 computer/system/other product sales

Rank 2022	Company	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Arrow Electronics, Inc.	575.8	527.2	9.2	27.3
2	Avnet	263.3	215.9	21.9	12.5
3	Gain Hero 蓝源实业	244.3	273.8	-10.7	11.6
4	WPG	207.8	278.1	-25.3	9.9
5	Mouser Electronics	204.3	163.3	25.1	9.7
6	Digi-Key	204.0	141.4	44.3	9.7
7	Restar Group	124.6	122.9	1.4	5.9
8	EDOM Technology	63.7	76.2	-16.4	3.0
9	WISEWHEEL 唯时信	54.5	68.4	-20.4	2.6
10	Nexty Electronics	50.5	49.5	1.9	2.4
	Others	113.6	133.2	-14.7	5.4
	TOTAL TOP 50	2,106.3	2,049.8	2.8	100.0

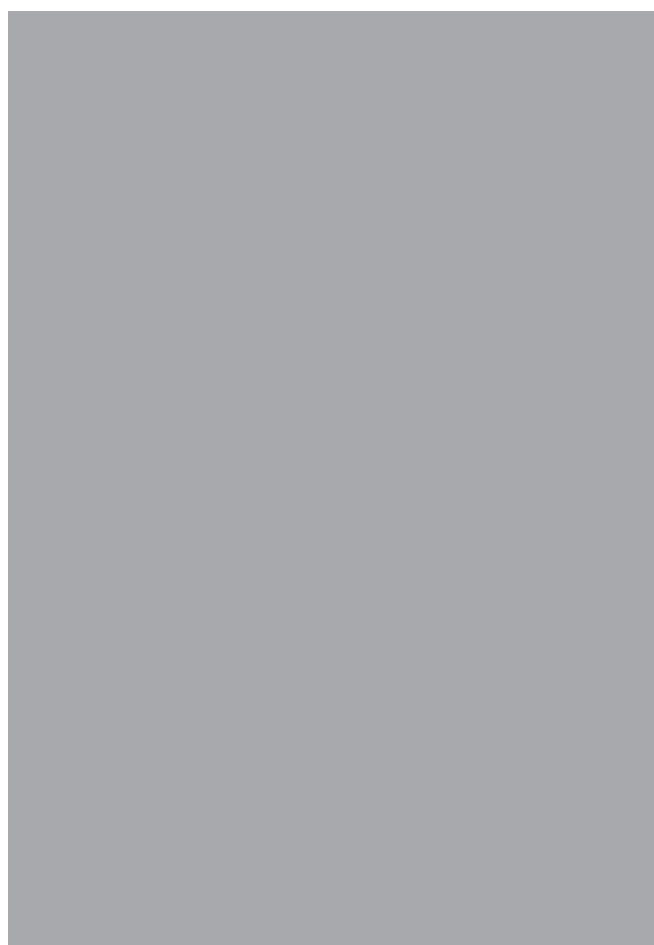


Top 10 power & batteries sales

Rank 2022	Company	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Avnet	526.6	431.9	21.9	23.9
2	WPG	461.8	556.2	-17.0	21.0
3	Macnica	336.0	296.5	13.3	15.2
4	Digi-Key	306.0	235.7	29.8	13.9
5	Sager	151.5	121.9	24.2	6.9
6	Restar Group	124.6	122.9	1.4	5.7
7	Mouser Electronics	122.6	98.0	25.1	5.6
8	Ryosan	73.8	60.7	21.6	3.3
9	RS Group	73.6	67.1	9.7	3.3
10	Carlton-Bates	17.3	16.1	7.6	0.8
	Others	10.2	9.5	7.5	0.5
	TOTAL TOP 50	2,203.9	1,983.8	11.1	100.0

Top 10 distributors by sales growth

Rank 2022	Company	Sales Growth 2022/2021 (Percentage)	2022 Worldwide (\$ Millions)	2021 Worldwide (\$ Millions)
1	Shannon Semi	45.7	2,005.4	1,376.4
2	Mouser Electronics	25.1	4,085.3	3,266.8
3	Avnet	21.9	26,328.4	21,593.3
4	Ryosan	21.6	2,459.7	2,022.2
5	bisco industries	21.2	306.0	252.5
6	Sager	20.5	459.0	381.0
7	Alltek Technology Corp	20.2	2,028.9	1,688.4
8	WT Microelectronics	19.6	19,192.2	16,044.6
9	Master Electronics	16.7	628.0	538.0
10	Marubun	15.6	1,470.8	1,272.6
	Others	-3.9	135,576.0	141,148.5
	TOTAL TOP 50	2.6	194,539.7	189,584.4



ECIA's TOP 50 Authorized Global Distributors Report 2023

Rank 2022	Rank 2021	Company	Type*	Headquarters	2021 Worldwide (\$ Millions)	Growth 2021/2020 (Percent)	Share of Top 50 Total Sales (Percent)	Sales Share by Region (Percent)		
								Americas	EMEA	Asia
1	2	Arrow Electronics, Inc.	1	USA	28,788.0	9.2	14.80	33.3	26.5	40.2
2	3	Avnet ⁽¹⁾	1	USA	26,328.4	21.9	13.53	25.1	32.8	42.1
3	1	WPG	1	Taiwan	23,089.0	-17.0	11.87	1.4	0.2	98.4
4	4	WT Microelectronics	1	Taiwan	19,192.2	19.6	9.87	0.0	0.0	100.0
5	8	Macnica	1	Japan	6,719.3	13.3	3.45	2.1	1.7	96.2
6	6	Future Electronics	1	Canada	6,500.0	2.0	3.34	39.0	25.2	35.8
7	7	CECport	1	China	6,435.4	8.1	3.31	0.0	0.0	100.0
8	5	Supreme Electronics	1	Taiwan	5,848.9	-21.8	3.01	5.2	0.0	94.8
9	10	Digi-Key	3	USA	5,100.0	8.2	2.62	55.3	18.1	26.6
10	9	Nexty Electronics ⁽²⁾	1	Japan	5,050.2	1.9	2.60	6.3	4.5	89.2
11	16	Mouser Electronics	3	USA	4,085.3	25.1	2.10	42.4	32.5	25.1
12	13	EDOM Technology	1	Taiwan	3,982.8	3.0	2.05	1.2	0.5	98.3
13	15	RS Group	1	U.K.	3,679.0	9.7	1.89	32.0	59.0	9.0
14	14	TTI	2	USA	3,650.0	7.2	1.88	54.8	31.6	13.6
15	11	S.A.S. Dragon	1	China	3,188.5	-29.8	1.64	0.6	0.0	99.4
16	12	Techtronics 泰科源	1	China	2,764.0	-31.2	1.42	0.0	0.0	100.0
17	18	Restar Group ⁽³⁾	2	Japan	2,492.0	1.4	1.28	0.1	0.0	99.9
18	20	Ryosan	1	Japan	2,459.7	21.6	1.26	3.2	0.0	96.8
19	17	Weikeng	1	Taiwan	2,359.7	-9.0	1.21	0.0	0.0	100.0
20	19	Kanematsu	2	Japan	2,126.3	-6.2	1.09	0.0	0.0	100.0
21	23	Alltek Technology Corp	1	Taiwan	2,028.9	20.2	1.04	0.0	0.0	100.0
22	27	Shannon Semi	1	China	2,005.4	45.7	1.03	0.0	0.0	100.0
23	22	Gain Hero 蓝源实业	1	China	1,685.0	-7.7	0.87	0.0	0.0	100.0
24	21	WISEWHEEL 唯时信	2	China	1,650.0	-18.3	0.85	0.0	0.0	100.0
25	30	Marubun	2	Japan	1,470.8	15.6	0.76	0.3	0.2	99.5
26	26	IngDan Innovation (Cogobuy.com 科通芯城)	1	China	1,417.9	-3.3	0.73	0.0	0.0	100.0
27	29	Rutronik	1	Germany	1,347.4	0.9	0.69	2.0	82.7	15.2
28	25	Zenitron	4	Taiwan	1,343.8	-10.8	0.69	0.0	0.0	100.0
29	32	Ryoden	1	Japan	1,320.3	8.0	0.68	2.2	1.1	96.7
30	33	DAC / Heilind	2	USA	1,299.1	8.9	0.67	79.5	7.3	13.2
31	28	Smart-Core Holdings 芯智控股	1	China	1,277.8	-4.4	0.66	0.0	0.0	100.0
32	24	Wuhan P&S Information Technology 力源信息	1	China	1,194.1	-26.1	0.61	0.0	0.0	100.0
33	31	Xiamen Holder Electronics 信和达 (Xiamen Xinheda Electronics)	4	China	1,185.0	-5.2	0.61	0.0	0.0	100.0
34	34	SaMT	2	South Korea	1,181.5	1.0	0.61	0.0	0.0	100.0
35	36	Shenlei Technology (SUNRAY 新蕾科技)	1	China	1,075.7	3.8	0.55	0.0	0.0	100.0
36	35	Best of Best Holdings ⁽⁴⁾ 好上好控股	1	China	950.9	-10.3	0.49	0.0	0.0	100.0
37	37	Serial Microelectronics	1	Singapore	861.9	3.6	0.44	0.0	0.0	100.0
38	39	Tianhe Galaxy	1	China	846.0	3.4	0.43	0.0	0.0	100.0
39	40	SIIX	1	Japan	822.0	2.1	0.42	9.6	4.7	85.6
40	38	ROAD WELL 路必康	1	China	754.0	-8.0	0.39	0.0	0.0	100.0
41	42	Nanjing Sunlord Electronics 南京商络	2	China	719.5	4.4	0.37	0.0	0.0	100.0
42	43	Shenzhen Huaxinke Technology (HXK) 华信科	1	China	654.0	9.0	0.34	0.0	0.0	100.0
43	44	Master Electronics	1	USA	628.0	16.7	0.32	70.0	0.0	30.0
44	41	YITOA 英唐智控	2	China	575.2	-21.8	0.30	0.0	0.0	100.0
45	48	Sager	2	USA	459.0	20.5	0.24	100.0	0.0	0.0
46	45	Glorison 荣采集团	2	China	445.0	-9.2	0.23	0.0	0.0	100.0
47	46	Upstar Technology 博思达	2	China	440.0	-7.4	0.23	0.0	0.0	100.0
48	47	Willas-Array	2	China	409.7	-8.0	0.21	0.0	0.0	100.0
49	49	Carlton-Bates	1	USA	346.9	7.6	0.18	100.0	0.0	0.0
50	50	bisco industries	1	USA	306.0	21.2	0.16	89.0	4.4	6.6
TOTAL TOP 50					194,539.7	2.6	100.00	15.6	12.9	71.4



Top 50 worldwide authorized distributors

Sales Share by Component (Percent)

	Semiconductor (Active)	Passive Component	Electro-Mechanical	Interconnect	Computer / Systems	Power & Batteries	Other
	79.0	4.2	3.0	8.8	2.0	-	3.0
	76.0	4.5	3.3	11.2	1.0	2.0	2.0
	93.4	1.4	0.6	1.6	0.9	2.0	0.2
	100.0	-	-	-	-	-	-
	86.0	1.0	1.0	-	-	5.0	7.0
	78.0	5.0	3.8	13.2	-	-	-
	98.5	0.4	-	0.3	-	-	0.8
	95.8	1.3	2.9	-	-	-	-
	42.0	21.0	10.0	17.0	4.0	6.0	-
	85.0	4.0	3.0	5.0	1.0	-	2.0
	45.0	18.0	10.0	18.0	5.0	3.0	1.0
	98.4	-	-	-	1.6	-	-
	7.5	3.5	11.0	15.0	-	2.0	61.0
	-	48.0	6.0	46.0	-	-	-
	86.0	6.0	7.6	-	-	-	0.4
	100.0	-	-	-	-	-	-
	40.0	1.0	19.0	18.0	5.0	5.0	12.0
	68.0	-	17.0	-	-	3.0	12.0
	94.3	2.8	-	2.9	-	-	-
	68.0	7.0	11.0	9.5	-	-	4.5
	100.0	-	-	-	-	-	-
	100.0	-	-	-	-	-	-
	75.3	2.0	-	0.5	14.5	-	7.7
	37.0	21.0	9.0	21.3	3.3	-	8.4
	92.0	-	-	5.0	-	-	3.0
	100.0	-	-	-	-	-	-
	100.0	-	-	-	-	-	-
	87.6	12.4	-	-	-	-	-
	-	-	22.0	78.0	-	-	-
	100.0	-	-	-	-	-	-
	95.0	4.0	-	1.0	-	-	-
	83.0	4.0	-	3.0	4.0	-	6.0
	24.0	25.0	23.0	28.0	-	-	-
	80.0	-	-	-	-	-	20.0
	67.0	6.0	7.0	6.0	4.0	-	10.0
	86.0	3.5	5.0	3.0	-	-	2.5
	52.0	12.0	15.0	16.0	-	-	5.0
	95.0	-	-	-	-	-	5.0
	60.0	8.0	10.0	14.0	-	-	8.0
	58.8	40.9	-	0.2	-	-	-
	56.5	30.0	6.0	7.5	-	-	-
	10.0	17.3	26.9	38.8	4.0	-	3.0
	92.0	8.0	-	-	-	-	-
	-	-	35.0	24.0	-	33.0	8.0
	17.0	83.0	-	-	-	-	-
	81.0	9.0	-	10.0	-	-	-
	97.0	-	-	-	-	1.0	2.0
	-	-	85.0	5.0	-	5.0	5.0
	1.0	20.0	40.0	20.0	1.0	2.0	16.0
	78.6	5.1	3.7	7.3	1.1	1.1	3.1

Average exchange rates used to convert to a common US dollar basis

Currency	2019	2020	2021	2022
Chinese Yuan (¥)	6.904	6.898	6.452	6.725
Hong Kong Dollar (HK\$)	7.836	7.756	7.770	7.831
Taiwan Dollar (NT\$)	30.892	29.454	27.916	29.762
Japanese Yen (¥)	109.02	106.78	109.78	131.37
Korean Won (₩)	1,165.7	1,179.2	1,145.1	1,292.2

2022 Revenue share by headquarters location

Region	Number	Revenue (\$M)	Share
Americas	11	77,491	39.8%
Taiwan	7	57,845	29.7%
China	20	29,673	15.3%
Japan	8	22,461	11.5%
Europe	2	5,026	2.6%
South Korea	1	1,181	0.60%
Singapore	1	862	0.40%
TOTAL	50	194,540	100.0%

2021 Revenue share by headquarters location

Region	Number	Revenue (\$M)	Share
Americas	11	68,399	36.1%
Taiwan	7	60,988	32.2%
China	20	32,574	17.2%
Japan	8	20,931	11.0%
Europe	2	4,691	2.5%
South Korea	1	1,170	0.60%
Singapore	1	832	0.40%
TOTAL	50	189,584	100.0%

2022 Revenue share

Company	Revenue (\$M)	Share	Growth
Top 5	104,117.0	53.5%	4.9%
Rank 6 to 10	28,934.6	14.9%	3.6%
Rank 11 to 20	30,787.4	15.8%	-3.2%
Rank 21 to 30	15,568.6	8.0%	0.2%
Rank 31 to 40	10,148.9	5.2%	-0.6%
Rank 41 to 50	4,983.2	2.6%	1.1%
TOTAL	194,539.7	100.0%	2.6%

*Type of Distributor: 1 = Broadline; 2 = Specialized; 3 = High Service/E-Catalog; 4 = Limited Line

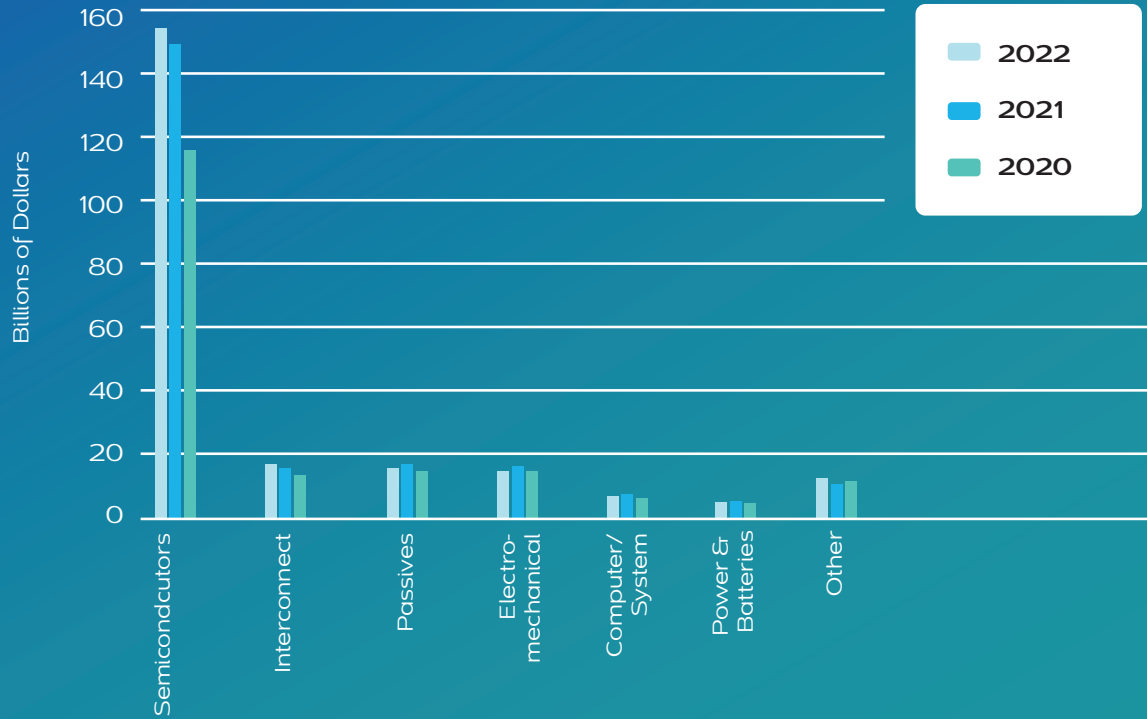
(1) Avnet includes Farnell

(2) Nexty Electronics includes Toyota Tsusho and Tomen

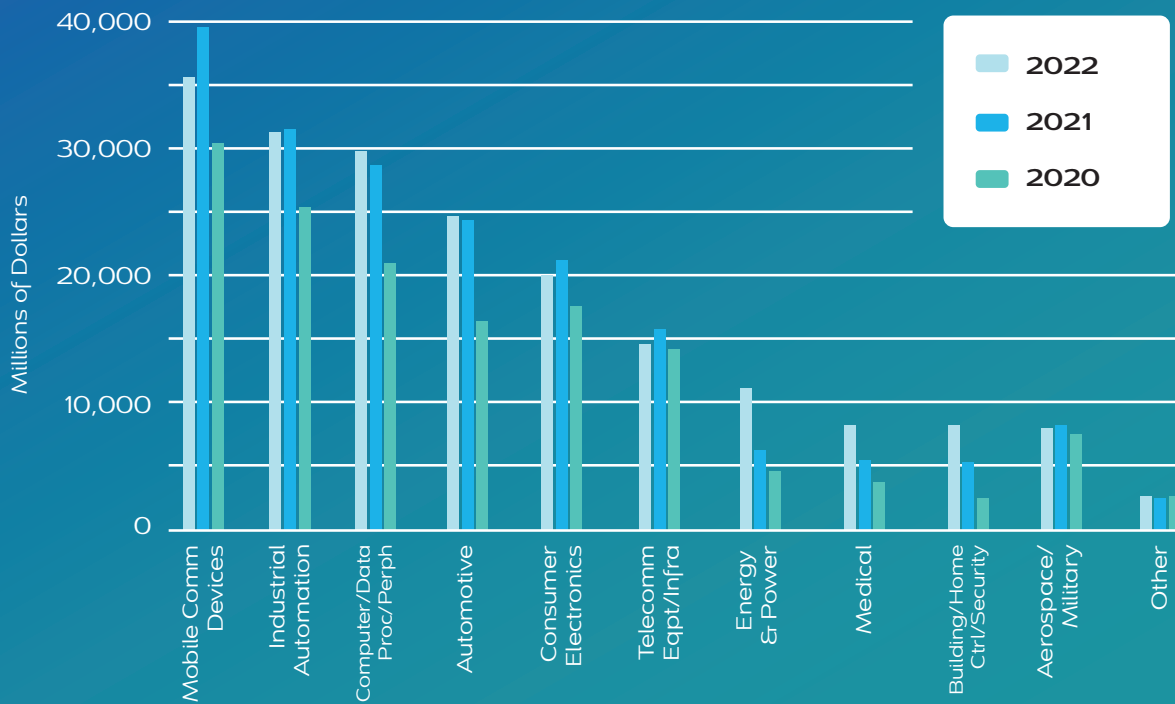
(3) Restar Group includes UKC Electronics and Restar Electronics

(4) Best of Best Holdings includes Honestar & AsiaCom Technology Alliance

Worldwide Distributor Component Revenue



Worldwide Revenue by End Market



Top 50 Asian authorized distributors

2022 Revenue (\$ Millions)

Rank 2022	Company	2021 Asia Total (\$ Millions)	Growth 2021/2020 (%)	Share of Top 50 Total Sales (%)	2022 Revenue (\$ Millions)									
					Mainland China / Hong Kong	Taiwan	Japan	South Korea	India	Vietnam	Malaysia / Singapore	Australia / New Zealand	Other Asian Countries	
1	WPG	22,722.9	-17.3	16.35	18,129.5	3,186.3	109.6	274.1	402.0	201.0	274.1	-	146.2	
2	WT Microelectronics	19,192.2	19.6	13.81	13,094.9	2,834.7	-	844.5	499.0	595.0	882.8	-	441.4	
3	Arrow Electronics, Inc.	11,567.5	-5.8	8.32	5,564.0	1,145.2	1,041.1	347.0	1,226.2	578.4	520.5	601.5	543.7	
4	Avnet	11,087.6	14.6	7.98	5,432.9	1,674.2	1,352.7	365.9	676.3	532.2	498.9	243.9	310.5	
5	Macnica	6,464.0	13.6	4.65	2,003.8	711.0	3,232.0	-	-	-	258.6	-	258.6	
6	CECport	6,435.4	8.1	4.63	5,502.3	643.5	-	-	-	-	289.6	-	-	
7	Supreme Electronics	5,542.7	-24.2	3.99	4,168.3	1,327.9	-	-	-	-	46.5	-	-	
8	Nexty Electronics	4,504.8	2.3	3.24	1,374.0	414.4	1,531.6	153.2	495.5	-	324.3	-	211.7	
9	EDOM Technology	3,915.5	3.7	2.82	2,239.7	1,202.1	-	19.6	43.1	148.8	207.5	-	54.8	
10	S.A.S. Dragon	3,170.9	-29.6	2.28	2,142.8	810.5	128.0	33.1	17.5	12.0	9.6	-	17.5	
11	Techtronics 泰科源	2,764.0	-31.2	1.99	2,670.0	-	-	-	-	-	94.0	-	-	
12	Restar Group	2,490.0	1.4	1.79	771.9	249.0	996.0	249.0	-	99.6	87.2	-	37.4	
13	Ryosan	2,381.0	22.3	1.71	766.7	52.4	1,353.1	23.8	42.9	-	102.4	-	39.8	
14	WeiKeng	2,359.7	-9.0	1.70	1,952.0	244.6	-	-	-	-	163.1	-	-	
15	Future Electronics	2,327.0	1.4	1.67	1,303.1	169.9	123.3	93.1	104.7	95.4	349.1	88.4	-	
16	Kanematsu	2,126.3	-6.2	1.53	276.4	157.3	1,280.0	106.3	91.4	87.2	63.8	-	63.8	
17	Alltek Technology Corp	2,028.9	20.2	1.46	1,306.1	645.0	-	-	-	-	57.5	-	20.3	
18	Shannon Semi	2,005.4	45.7	1.44	2,005.4	-	-	-	-	-	-	-	-	
19	Gain Hero 蓝源实业	1,685.0	-7.7	1.21	943.6	286.5	168.5	-	101.1	-	185.4	-	-	
20	WISEWHEEL 唯时信	1,650.0	-18.3	1.19	1,650.0	-	-	-	-	-	-	-	-	
21	Marubun	1,462.8	15.5	1.05	146.3	87.8	1,009.3	146.3	-	-	43.9	-	29.3	
22	IngDan Innovation (Cogobuy.com 科通芯城)	1,417.9	-3.3	1.02	1,356.2	0.7	7.1	-	-	-	53.9	-	-	
23	Digi-Key	1,356.6	6.5	0.98	569.8	67.8	176.4	108.5	108.5	13.6	149.2	81.4	81.4	
24	Zenitron	1,343.8	-10.8	0.97	1,141.2	155.7	10.8	-	-	-	13.4	-	22.7	
25	Smart-Core Holdings 芯智控股	1,277.8	-4.4	0.92	1,178.7	-	20.6	-	-	-	74.7	-	3.8	
26	Ryoden	1,276.3	8.3	0.92	139.0	33.9	1,065.2	-	-	12.8	19.1	-	6.4	
27	Wuhan P&S Information Technology 力源信息	1,194.1	-26.1	0.86	1,074.7	59.7	-	-	-	-	35.8	-	23.9	
28	Xiamen Holder Electronics 信和达	1,185.0	-5.2	0.85	1,185.0	-	-	-	-	-	-	-	-	
29	SaMT	1,181.5	1.0	0.85	389.9	-	-	791.6	-	-	-	-	-	
30	Shenlei Technology (SUNRAY 新蕾科技)	1,075.7	3.8	0.77	1,075.7	-	-	-	-	-	-	-	-	
31	Mouser Electronics	1,024.4	18.3	0.74	450.7	61.5	163.9	82.0	71.7	10.2	102.4	51.2	30.7	
32	Best of Best Holdings 好上好控股	950.9	-10.3	0.68	874.9	47.5	-	-	-	-	28.5	-	-	
33	Serial Microelectronics	861.9	3.6	0.62	586.1	51.7	-	60.3	38.8	21.5	69.0	-	34.5	
34	Tianhe Galaxy	846.0	3.4	0.61	846.0	-	-	-	-	-	-	-	-	
35	ROAD WELL 路必康	754.0	-8.0	0.54	708.8	-	-	-	-	-	45.2	-	-	
36	Nanjing Sunlord Electronics 南京商络	719.5	4.4	0.52	708.6	10.8	-	-	-	-	-	-	0.1	
37	SIIX	704.0	1.7	0.51	223.2	128.8	229.5	-	-	42.2	49.3	-	31.0	
38	Shenzhen Huaxinke Technology (HXK) 华信科	654.0	9.0	0.47	654.0	-	-	-	-	-	-	-	-	
39	YITOA 英唐智控	575.2	-21.8	0.41	575.2	-	-	-	-	-	-	-	-	
40	TTI	495.0	-5.7	0.36	297.0	29.7	-	9.9	19.8	5.0	99.0	5.0	29.7	
41	Glorison 荣采集团	445.0	-9.2	0.32	369.4	44.5	-	-	31.2	-	-	-	-	
42	Upstar Technology 博思达	440.0	-7.4	0.32	440.0	-	-	-	-	-	-	-	-	
43	Willas-Array	409.7	-8.0	0.29	395.7	14.0	-	-	-	-	-	-	-	
44	RS Group	331.1	-1.3	0.24	56.3	29.8	49.7	16.6	13.2	6.6	19.9	89.4	49.7	
45	Rutronik	205.3	2.6	0.15	129.3	26.7	-	-	10.3	-	26.7	-	12.3	
46	Master Electronics	188.4	10.8	0.14	131.9	-	-	-	-	-	56.5	-	-	
47	DAC / Heilind	171.2	7.9	0.12	124.1	22.3	-	0.7	10.3	0.7	12.8	-	0.3	
48	bisco industries	20.1	123.9	0.01	2.7	1.2	1.2	1.2	2.7	1.2	1.2	2.7	6.0	
49	Sager	-	-	-	-	-	-	-	-	-	-	-	-	
50	Carlton-Bates	-	-	-	-	-	-	-	-	-	-	-	-	
TOTAL		138,988.2	-2.5	100.00	89,127.5	16,628.7	14,049.6	3,726.6	4,006.2	2,463.4	5,315.5	1,163.5	2,507.3	

Top 10 mainland China / Hong Kong sales

Rank 2022	Company	2022 Mainland China / Hong Kong (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	WPG	18,129.5	-17.6	20.34
2	WT Microelectronics	13,094.9	18.8	14.69
3	Arrow Electronics, Inc.	5,564.0	-8.3	6.24
4	CECport	5,502.3	6.9	6.17
5	Avnet	5,432.9	10.3	6.10
6	Supreme Electronics	4,168.3	-25.8	4.68
7	Techtronics 泰科源	2,670.0	-31.4	3.00
8	EDOM Technology	2,239.7	-2.7	2.51
9	S.A.S. Dragon	2,142.8	-36.3	2.40
10	Shannon Semi	2,005.4	45.7	2.25
	Others	28,177.8	-5.0	31.62
	TOTAL TOP 50	89,127.5	-6.6	100.00

Top 10 Taiwan sales

Rank 2022	Company	2022 Taiwan (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	WPG	3,186.3	-15.7	19.16
2	WT Microelectronics	2,834.7	17.0	17.05
3	Avnet	1,674.2	19.3	10.07
4	Supreme Electronics	1,327.9	-19.1	7.99
5	EDOM Technology	1,202.1	11.2	7.23
6	Arrow Electronics, Inc.	1,145.2	-3.1	6.89
7	S.A.S. Dragon	810.5	-9.1	4.87
8	Macnica	711.0	4.1	4.28
9	Alltek Technology Corp	645.0	0.2	3.88
10	CECport	643.5	13.8	3.87
	Others	2,448.2	5.9	14.72
	TOTAL TOP 50	16,628.7	0.1	100.00

Top 10 Japan sales

Rank 2022	Company	2022 Japan (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Macnica	3,232.0	32.1	23.00
2	Nexty Electronics	1,531.6	7.2	10.90
3	Ryosan	1,353.1	16.3	9.63
4	Avnet	1,352.7	19.5	9.63
5	Kanematsu	1,280.0	-4.3	9.11
6	Ryoden	1,065.2	6.4	7.58
7	Arrow Electronics, Inc.	1,041.1	0.1	7.41
8	Marubun	1,009.3	17.2	7.18
9	Restar Group	996.0	9.6	7.09
10	SIIX	229.5	-6.2	1.63
	Others	959.1	6.5	6.83
	TOTAL TOP 50	14,049.6	12.7	100.00

Top 10 Malaysia / Singapore sales

Rank 2022	Company	2021 Malaysia/ Singapore (\$ Millions)	Growth 2021/2020 (Percent)	Share of Top 50 Total Sales (Percent)
1	WT Microelectronics	882.8	18.7	16.61
2	Arrow Electronics, Inc.	520.5	-8.7	9.79
3	Avnet	498.9	14.6	9.39
4	Future Electronics	349.1	1.4	6.57
5	Nexty Electronics	324.3	3.1	6.10
6	CECport	289.6	21.7	5.45
7	WPG	274.1	-21.5	5.16
8	Macnica	258.6	-35.1	4.86
9	EDOM Technology	207.5	29.9	3.90
10	Gain Hero 蓝源实业	185.4	1.6	3.49
	Others	1,524.6	6.2	28.68
	TOTAL TOP 50	5,315.5	2.8	100.00

Top 10 India sales

Rank 2022	Company	2022 India (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Arrow Electronics, Inc.	1,226.2	-3.3	30.61
2	Avnet	676.3	20.5	16.88
3	WT Microelectronics	499.0	36.5	12.46
4	Nexty Electronics	495.5	12.6	12.37
5	WPG	402.0	-13.7	10.04
6	Digi-Key	108.5	21.8	2.71
7	Future Electronics	104.7	11.3	2.61
8	Gain Hero 蓝源实业	101.1	10.8	2.52
9	Kanematsu	91.4	0.8	2.28
10	Mouser Electronics	71.7	33.5	1.79
	Others	229.6	2.4	5.73
	TOTAL TOP 50	4,006.2	7.0	100.00

Top 10 South Korea sales

Rank 2022	Company	2022 South Korea (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	WT Microelectronics	844.5	24.2	22.66
2	SaMT	791.6	4.1	21.24
3	Avnet	365.9	26.0	9.82
4	Arrow Electronics, Inc.	347.0	5.4	9.31
5	WPG	274.1	-15.9	7.36
6	Restar Group	249.0	-7.8	6.68
7	Nexty Electronics	153.2	3.9	4.11
8	Marubun	146.3	15.5	3.93
9	Digi-Key	108.5	6.5	2.91
10	Kanematsu	106.3	-6.2	2.85
	Others	340.2	13.7	9.13
	TOTAL TOP 50	3,726.6	8.2	100.00

Top 10 Vietnam sales

Rank 2022	Company	2022 Vietnam (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	WT Microelectronics	595.0	26.4	24.15
2	Arrow Electronics, Inc.	578.4	1.1	23.48
3	Avnet	532.2	19.6	21.60
4	WPG	201.0	-13.7	8.16
5	EDOM Technology	148.8	-0.5	6.04
6	Restar Group	99.6	9.6	4.04
7	Future Electronics	95.4	3.9	3.87
8	Kanematsu	87.2	-3.9	3.54
9	SIIX	42.2	52.6	1.71
10	Serial Microelectronics	21.5	3.6	0.87
	Others	62.1	-15.2	2.52
	TOTAL TOP 50	2,463.4	8.7	100.00

Top 8 Australia /New Zealand sales

Rank 2022	Company	2022 Australia/ New Zealand Total (\$ Millions)	Growth 2022/2021 (Percent)	Share of Top 50 Total Sales (Percent)
1	Arrow Electronics, Inc.	601.5	-10.0	51.70
2	Avnet	243.9	14.6	20.96
3	RS Group	89.4	-4.8	7.68
4	Future Electronics	88.4	1.4	7.60
5	Digi-Key	81.4	-8.7	7.00
6	Mouser Electronics	51.2	20.7	4.40
7	TTI	5.0	-5.7	0.43
8	bisco industries	2.7	123.9	0.23
	Others	-	-	-
	TOTAL TOP 50	1,163.5	-3.2	100.00