



Your Best Choice



THINKING

Legal Person

Briefing Session

2022Q3



December 2022, English Version



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Index



Financial Status



Company Introduction



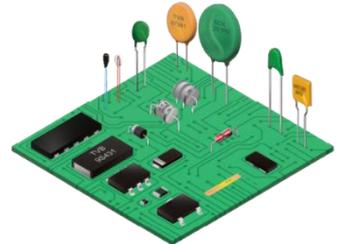
Markets and Customers



Competitive Strength



Strategy for Growth





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Operation Overview: Yearly Consolidated Income Statement

Item	2022.Q1-Q3	2021.Q1-Q3	YoY
Net sales	5,588,278	5,635,379	-0.8%
Gross profit margin	36.74	43.91	-7.17
Operating expenses	877,845	785,593	11.7%
Operating expenses ratio	15.71	13.94	1.77
Net operating income	1,175,415	1,689,064	-30.4%
Operating profit margin	21.03	29.97	-8.94
Non-operating income and expenses	410,267	15,311	2579.6%
Net profit	1,214,188	1,226,344	-1.0%
Net profit margin	21.73	21.76	-0.03
Earning per share (NTD)	9.4	9.51	-0.11



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Operation Overview: Quarterly Consolidated Income Statement

Item	3Q 2022	2Q 2022	3Q 2021	QoQ	YoY
Net sales	1,888,547	1,899,772	1,916,060	-0.6%	-1.4%
Gross profit margin	33.48	37.57	42.17	-4.09	-8.68
Operating expenses	283,990	311,689	272,637	-8.9%	4.2%
Operating expenses ratio	15.04	16.41	14.23	-1.37	0.81
Net operating income	348,377	402,141	535,303	-13.4%	-34.9%
Operating profit margin	18.45	21.17	27.94	-2.72	-9.49
Non-operating income and expenses	170,207	143,861	16,303	18.3%	944.0%
Net profit	403,435	411,441	379,937	-1.9%	6.2%
Net profit margin	21.36	21.66	19.83	-0.30	1.53
Earning per share (NTD)	3.12	3.18	2.94	-0.06	0.18



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Operation Overview: Consolidated Balance Sheets

Item	2022.9.30	%	2021.9.30	YoY
Cash and cash equivalents	3,282,093	24%	2,534,775	29.5%
Accounts receivable	2,274,589	17%	2,402,145	-5.3%
Inventories	1,906,973	14%	1,797,864	6.1%
Current assets	9,166,545	67%	9,086,622	0.9%
Current Ratio	419%		313%	
Fixed assets	3,085,558	23%	2,524,013	22.2%
Non-current assets	4,463,620	33%	3,599,499	24.0%
Total assets	13,630,165	100%	12,686,121	7.4%
Short-term borrowings	940,000	7%	1,351,860	-30.5%
Account payable	400,086	3%	717,769	-44.3%
Other account payable	570,787	4%	541,450	5.4%
Current liabilities	2,186,463	16%	2,903,653	-24.7%
Long-term borrowings	1,035,399	8%	596,931	73.5%
Non-current liabilities	2,564,086	19%	1,932,449	32.7%
Total liabilities	4,750,549	35%	4,836,102	-1.8%
Debt Ratio	35%		38%	
Total equity	8,879,616	65%	7,850,019	13.1%



Your Best Choice

Index



Financial Status



Company Introduction



Markets and Customers



Competitive Strength



Strategy for Growth





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Corporate Mission

Mission Statement:

Contribute to safety and operation efficiency of electronics

We “think” and “are keen” to offer customers “service.”



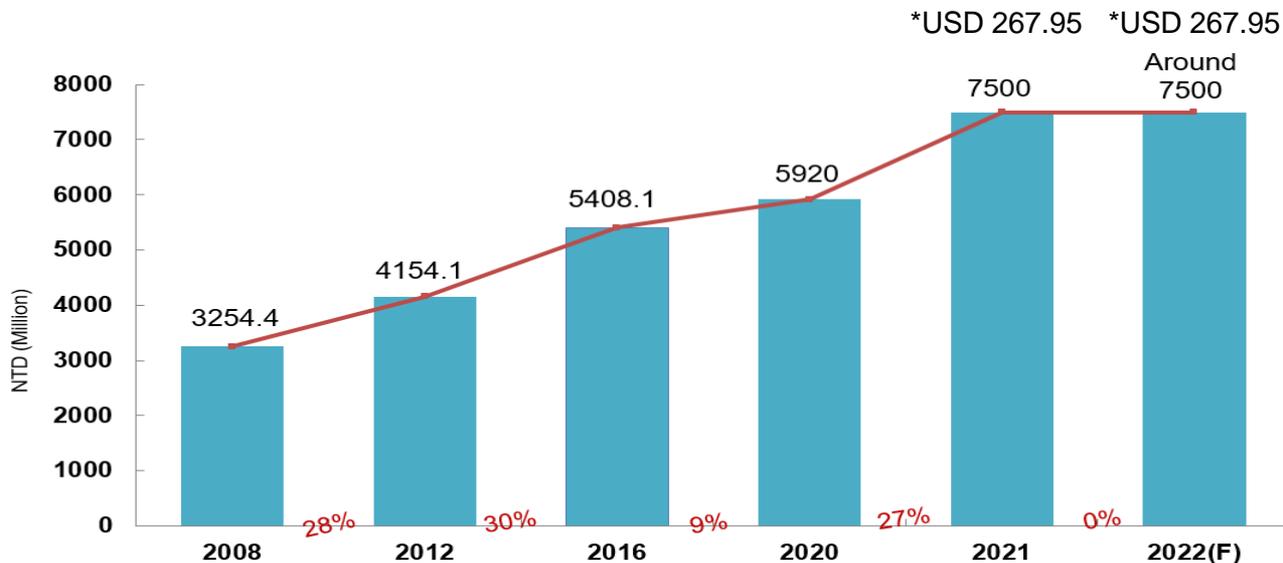
- T** *Think*
- K** *Keen*
- S** *Service*



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Company Introduction

- Established in 1979
- 7 factories and 4500 employees
- 2008-2022 Net Revenue:



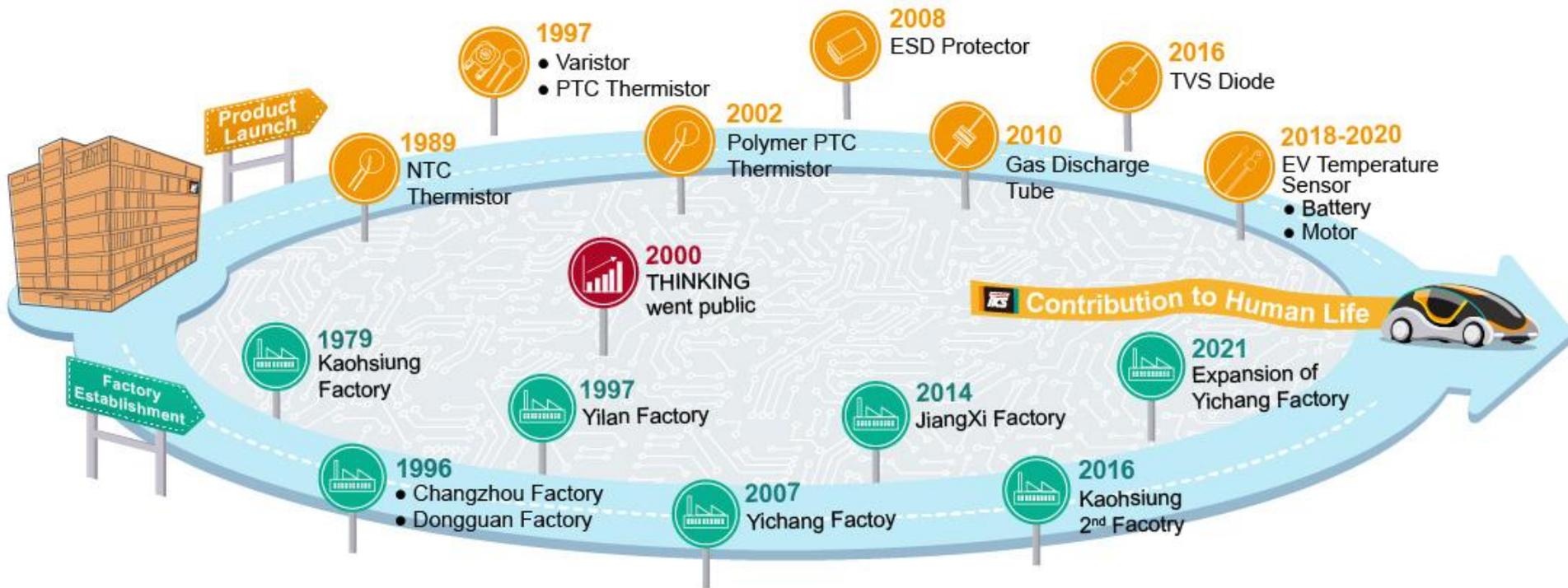
*USD 267.95 *USD 267.95

* Using an exchange rate of 1 USD =27.99 NTD



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Milestone





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THINKING All Around the World

All Around The World.





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Factories of THINKING

Yichang Factory



Major Product



Changzhou Factory



Major Product



Yilan Factory



Major Product



Kaohsiung 1st Factory



Major Product



JiangXi Factory



Front-End

Dongguan Factory



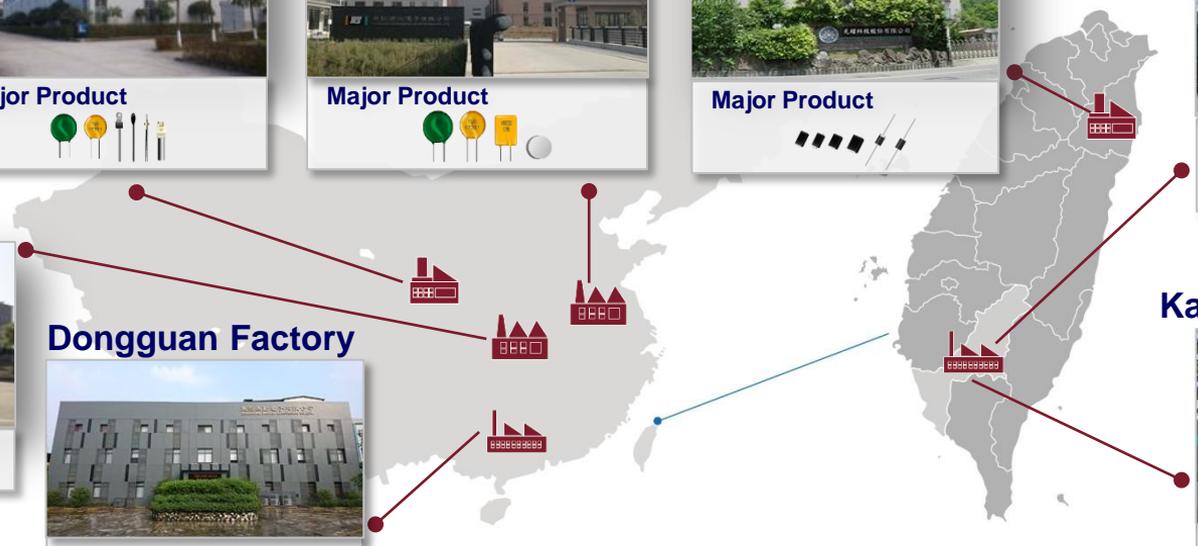
Major Product



Kaohsiung 2nd Factory



Major Product





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Total Solution for Customers

Over-Temperature Protection



NTC Thermistor



PTC Thermistor



Temperature Sensor

Over-Current Protection



NTC ICL



PTC Thermistor



Polymer PTC Thermistor

Over-Voltage Protection



Varistor



Gas Discharge Tube



ESD Protection



TVS Diode



Spark Gap Protector



Thyristor Surge Suppressor



Your Best Choice

Index



Financial Status



Company Introduction



Markets and Customers



Competitive Strength



Strategy for Growth





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Major Markets

Information and Communication Technology



Telecom



Power Supply



Consumer Electronics



Computer

Home Appliances and Lighting



Home Appliances



Lighting

Automotive and Industrial



Automotive
(12%)



Industrial

Medical and Others



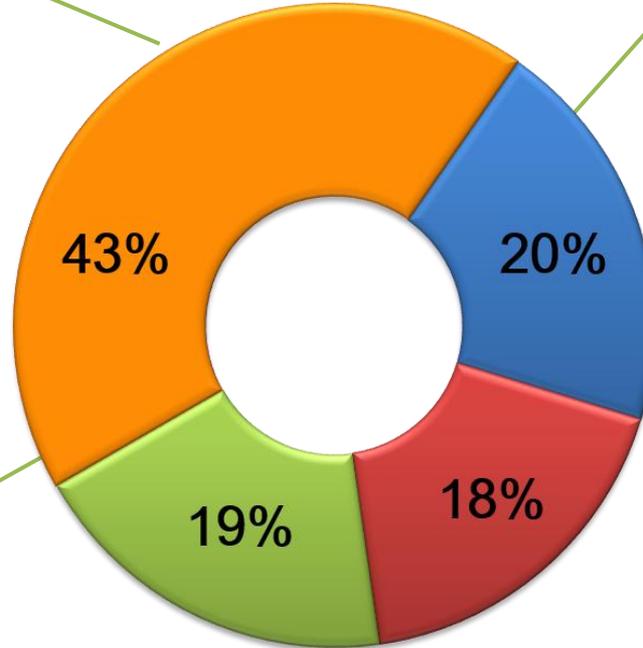
Medical

Other

Other applications



Distributor

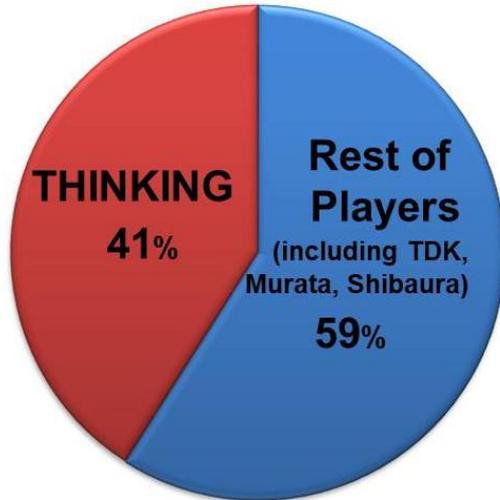




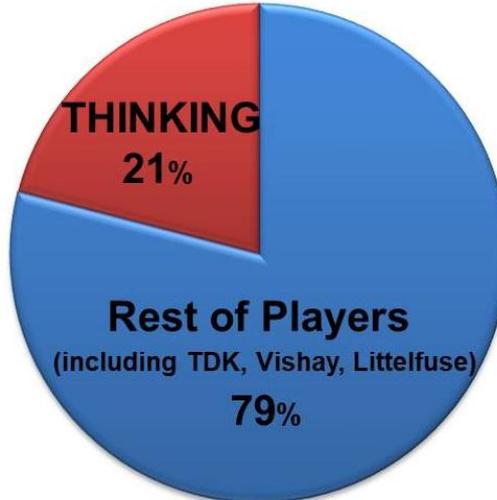
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Market Positions of THINKING Products

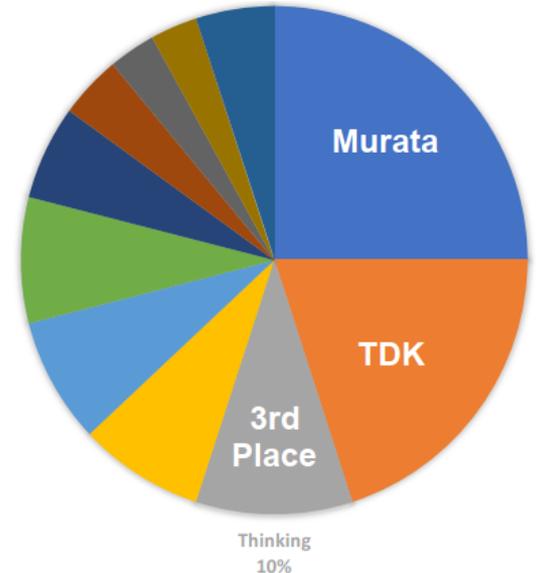
THINKING NTC Thermistor



THINKING Disc Varistor



THINKING Ceramic PTC Thermistor



Note:

- 1.Data source: Circuit Protection Components: World Markets, Technologies & Opportunities: 2019-2024, Paumanok Publication
- 2.Fiscal year 2020 calculation of THINKING NTC thermistor and disc varistor ended in December 31, 2020.



Your Best Choice

Index



Financial Status



Company Introduction



Markets and Customers



Competitive Strength



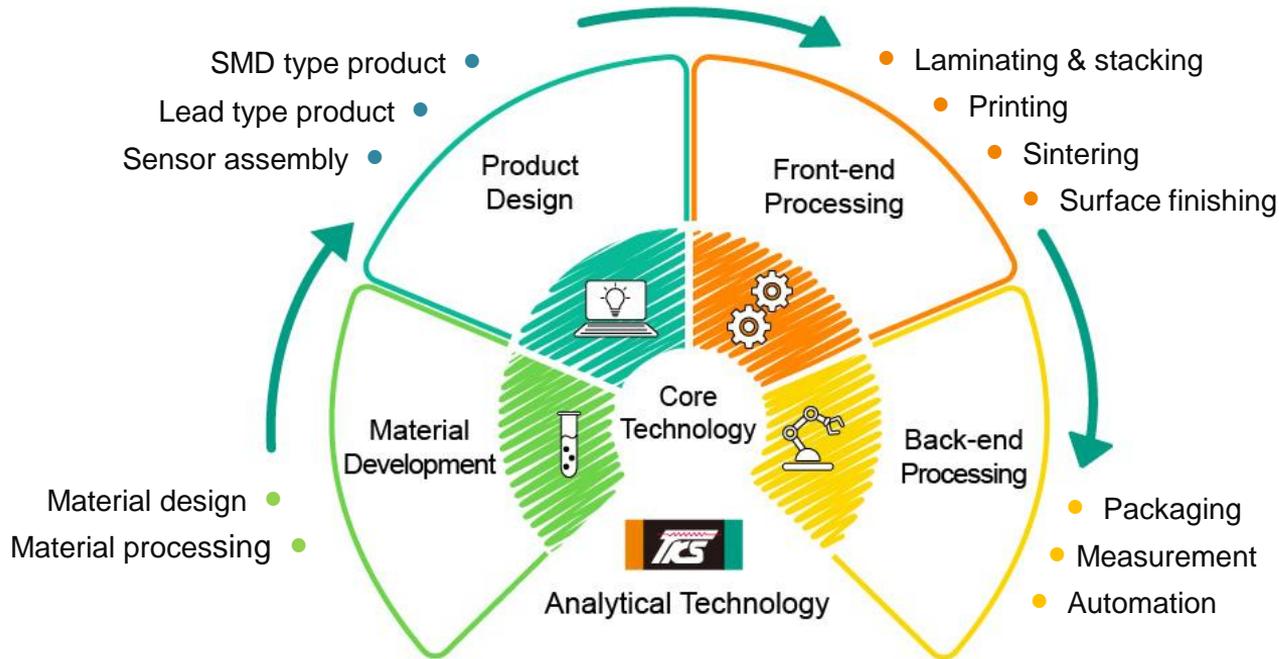
Strategy for Growth



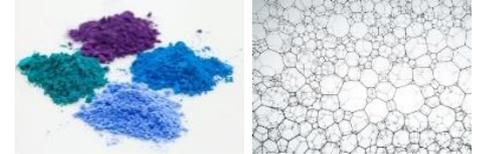


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Core Technology

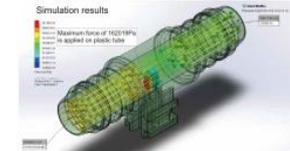


Material Development



Our know-how of key raw material and ceramic recipes make our products competitive in the market.

Product Design



Our simulation technology ensures our precise product design.

Back-end Processing



Automated production ensures our stable product quality.



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Agency Approval of Product

						
NTC Thermistor	✓			✓	✓	
Varistor	✓	✓	✓	✓	✓	✓
PTC Thermistor	✓		✓	✓	✓	
Polymer PTC Thermistor	✓			✓	✓	
Gas Discharge Tube	✓					
NTC Temperature Sensor	✓		✓	✓	✓	
TVS Diode	✓					✓

Note:  is for UL + cUL



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UL and TUV Certified Laboratories

- Laboratories of THINKING passed the CTDTP (Client Test Data Program) of UL and witness testing qualification of TUV.





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Technical Support

THINKING AE team provides comprehensive technical support.

- **Technical Consultation:** Discussion of technical problems with customers
- **Product Selection Suggestion:** Selecting products in accordance with customer's needs
- **Circuit Design Assistance:** Discussion of circuit design for problems that customers encounter
- **Application Example:** Application experience sharing with customers



Your Best Choice

Index



Financial Status



Company Introduction



Markets and Customers



Competitive Strength



Strategy for Growth

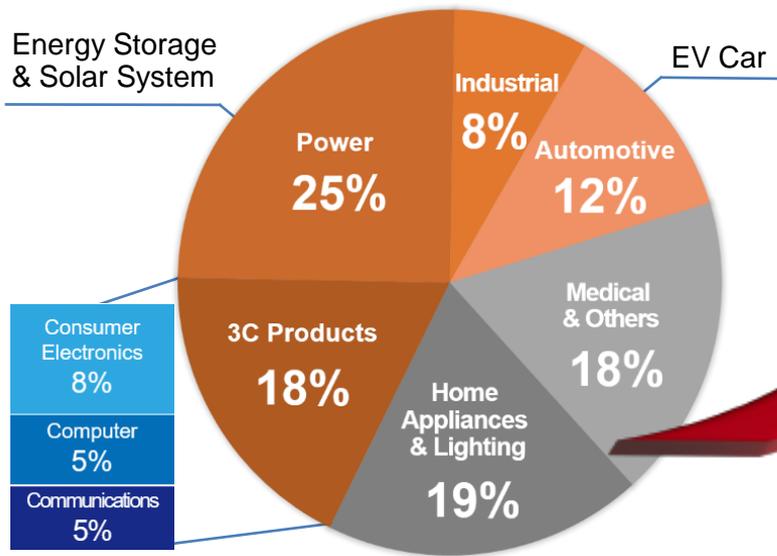




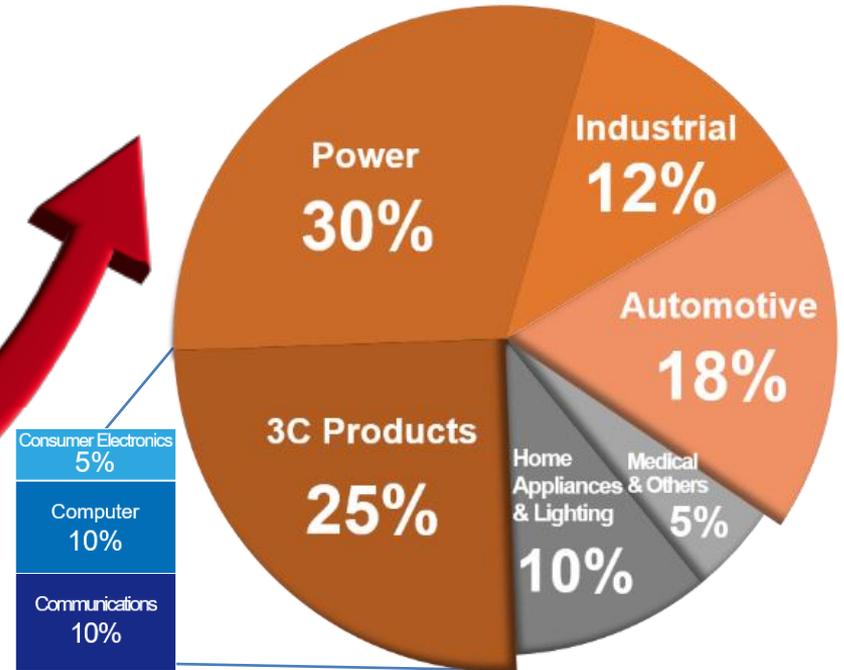
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Growth Strategy – Application Focus

2022 Sales by Applications



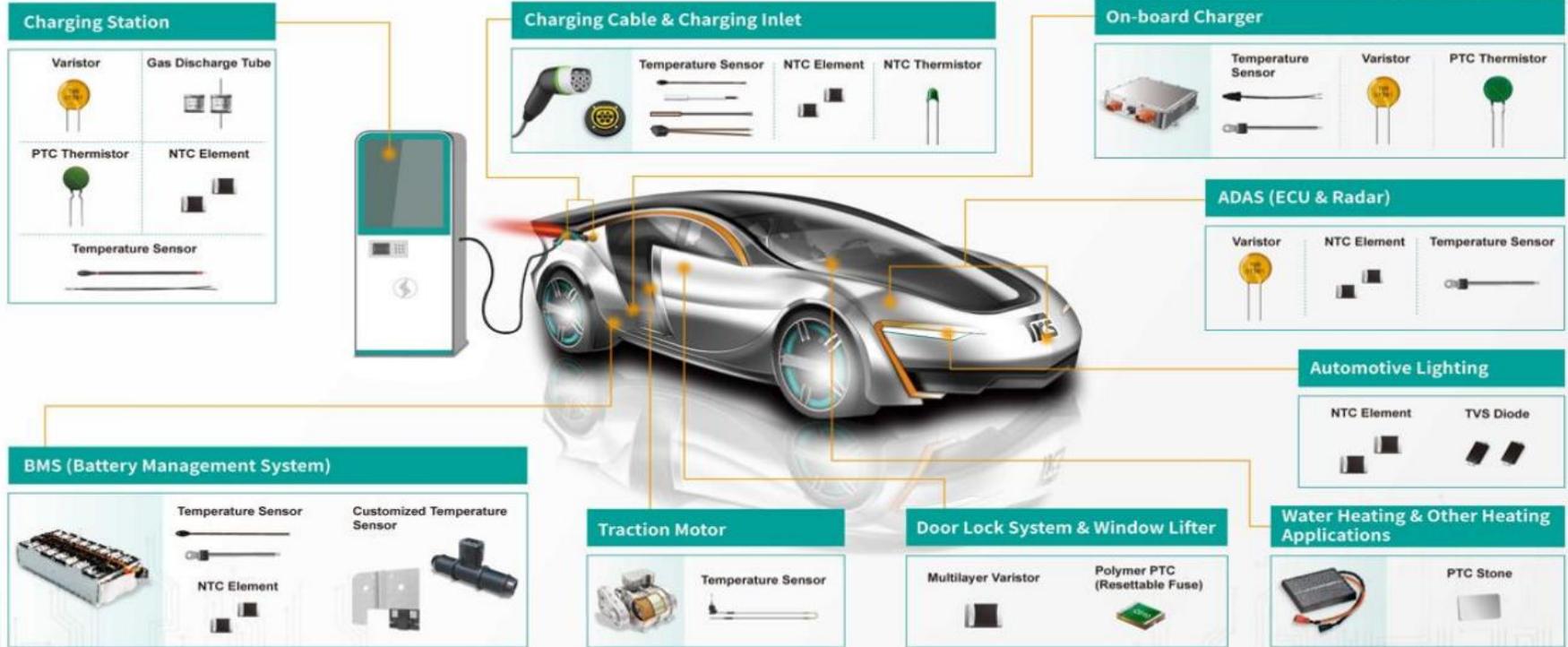
2025 Sales by Applications





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EV Applications



THINKING ELECTRONIC INDUSTRIAL CO., LTD.



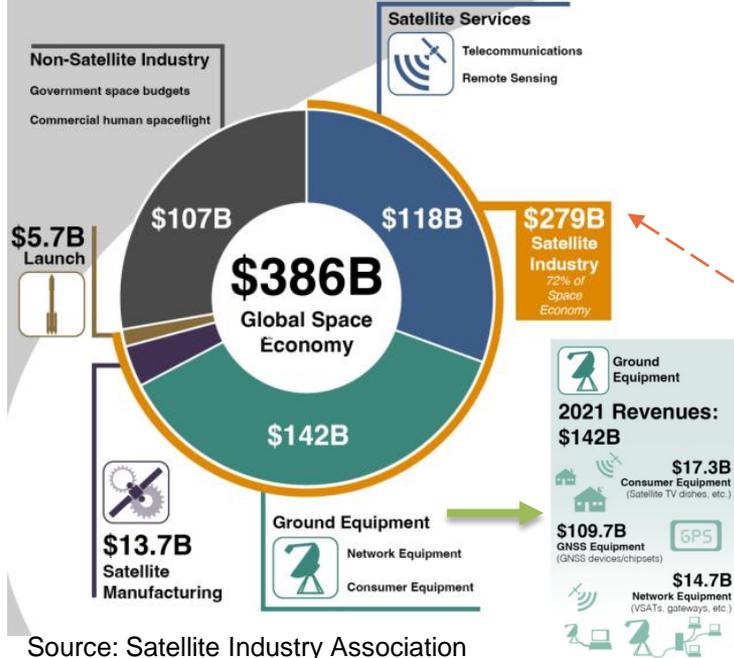
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Growth Strategy – Application Focus Communications: Low Earth Orbit Satellite

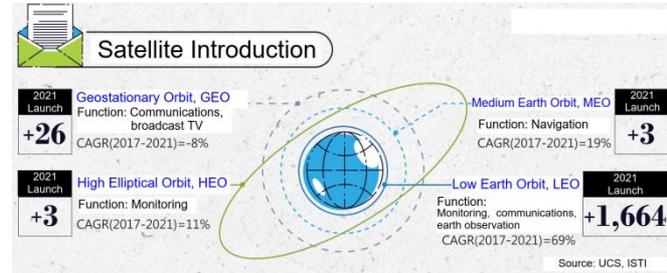
2021 Global Satellite Industry Revenue

The Satellite Industry in Context

(2021 revenues worldwide in billions of U.S. dollars)



Source: Satellite Industry Association



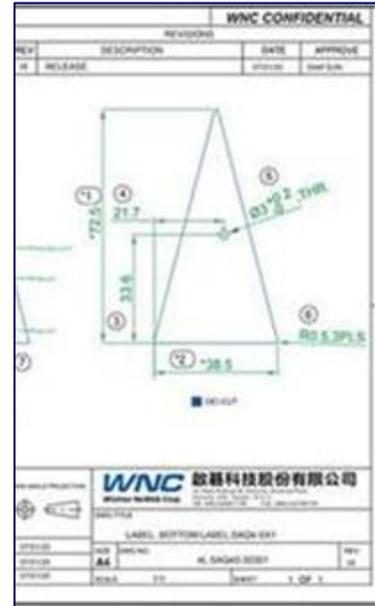
- 1696 satellites were launched in 2021, and 1664 of them are LEO satellites. EuroConsult estimates that 1700 satellites will be launched per year by 2030.
- Revenue of satellite industry is USD 279 billion, accounting for 72% of the world's space business.
- Ground equipment helps LEO receive signal seamlessly, and its 2021 revenue is USD 142 billion. It needs antennas, PCB, power supply, etc., and that offers Taiwan manufacturers business opportunities.
- For lifetime, LEO is 4-5 years, and GEO is 15 years. In other words, LEO has high component demand.

Growth Strategy – Application Focus

Communications: Customers of Low Earth Orbit Satellite



Subscribers of Starlink satellite internet from SpaceX is around 250,000 in March, and it increases to 400,000 in May, which is a 60% growth.



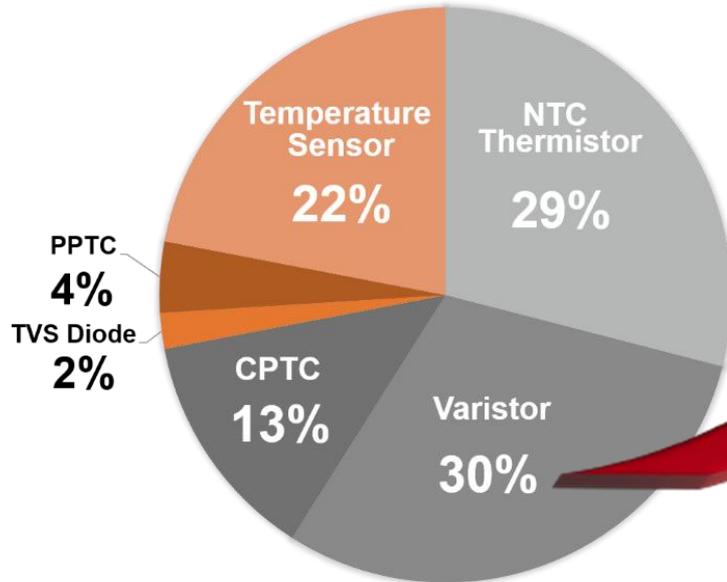
SpaceX will deploy 30,000 satellites, and Amazon told FCC (Federal Communications Commission) that the number of satellites is a little much.



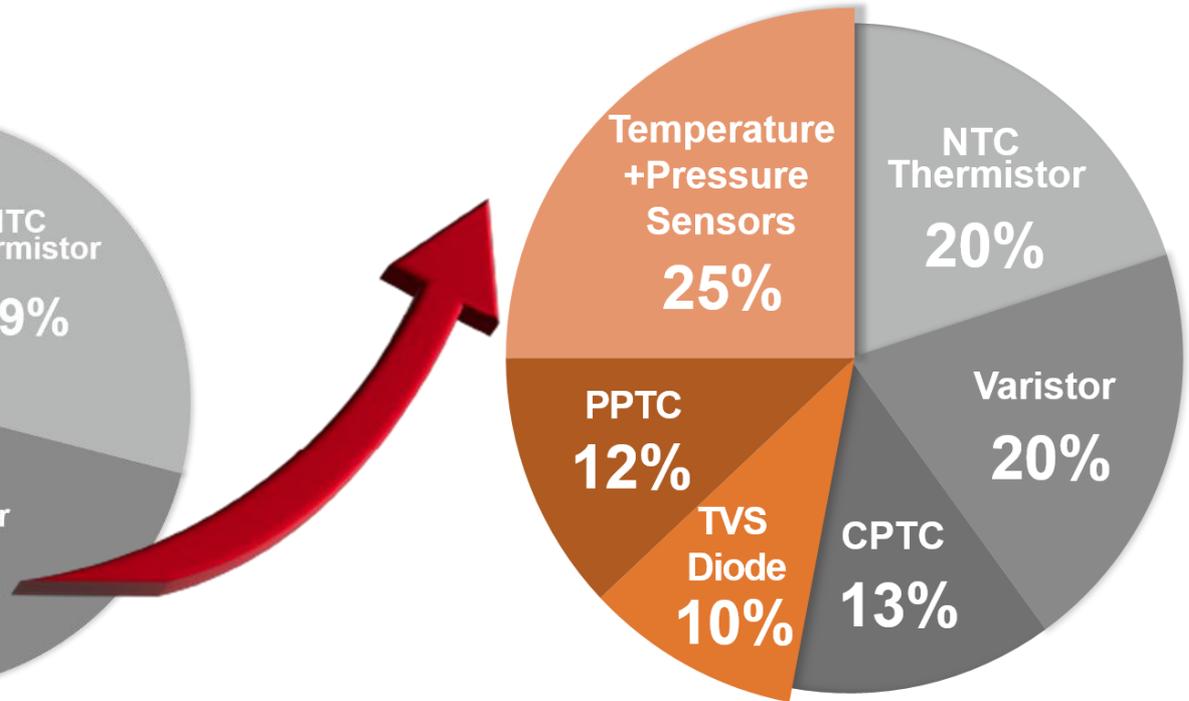
Growth Strategy – Products Development

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2022 Sales by Products



2025 Sales by Products





Growth Strategy – Products Development

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- Comparison of PPTC and CPTC

Parameter	CPTC	PPTC
Material	Ceramic	Polymer
Resistance (R25)	High initial resistance	Low initial resistance
Response time	Fast	Faster ✓
Power Consumption	Higher	Lower ✓
Product structure	Less	More ✓
Resettable functionality	Yes	Yes ✓
Reset type	Self-reset ✓	Self-reset ✓
Price	Higher ✓	Lower ✓

For PPTC, its faster response time and lower power consumption meet the market trend of energy saving. It also helps customers reduce cost and increase their design flexibility. Therefore, THINKING plans to promote PPTC more.



Growth Strategy – Products Development

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THINKING PPTC offers over-current protection, and it is recommended for the following applications.



PCB



Portable Electronics



Notebook Computer



DC Power Module



USB Port



Light Bulb



Set Top Box



Growth Strategy – Products Development

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- Comparison of TVS Diode and Other Over-voltage Protection Components

Parameter	TVS Diode	Varistor	Gas Discharge Tube
Surge withstand capability	Medium	High	High
Varistor tolerance	Accurate ✓	Medium	Wide
Residual voltage	Low ✓	High	Low ✓
Pulse surge life	Good ✓	Limited	Good
Capacitance	Low	High	Low
Response time	Faster ✓	Fast	Fair
Size v.s.Ipp	Medium	Large	Small
Price	High	Medium	Low

TVS diode provides better over-voltage protection because of its accurate varistor tolerance and low residual voltage. Its low capacitance also makes it a recommended ESD suppressor. Consequently, THINKING promotes TVS diodes for over-voltage protection.



Growth Strategy – Products Development

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THINKING TVS diode offers either over-voltage protection or ESD protection, and it is recommended for the following applications.



Automotive Electronics



5G Base Station



Notebook Computer



Set Top Box



Mobile Phone



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Growth Strategy – Products Development Applications of Pressure Sensors

Major Applications of Pressure Sensors

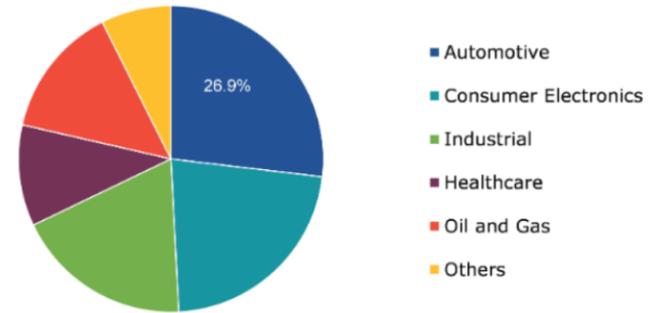
- **Automotive market:**

2021 market revenue of automotive market is USD 2 billion (around 26.9% of 2021 market share), and it is projected to reach USD 4.9 billion in 2030.

- **Industrial market:**

2021 market revenue of industrial market is USD 1.4 billion, and it is projected to reach USD 4.1 billion in 2030.

Global Pressure Transducer Market Share, by End-use Industry, 2021



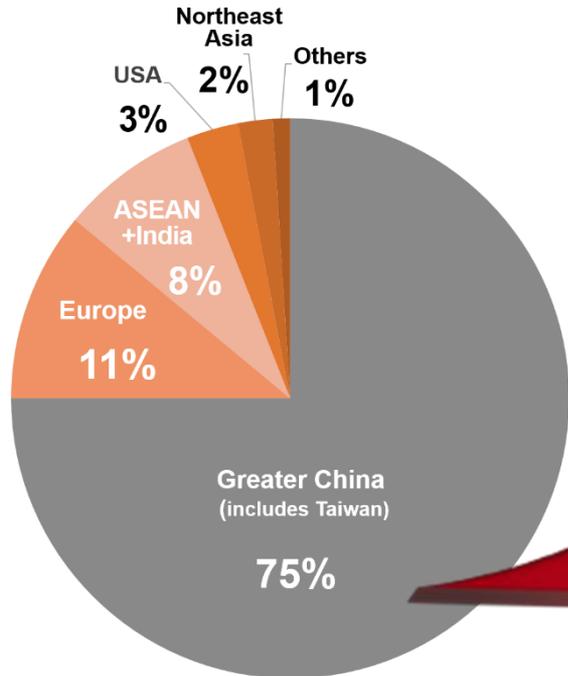
Source: Research Dive Analysis



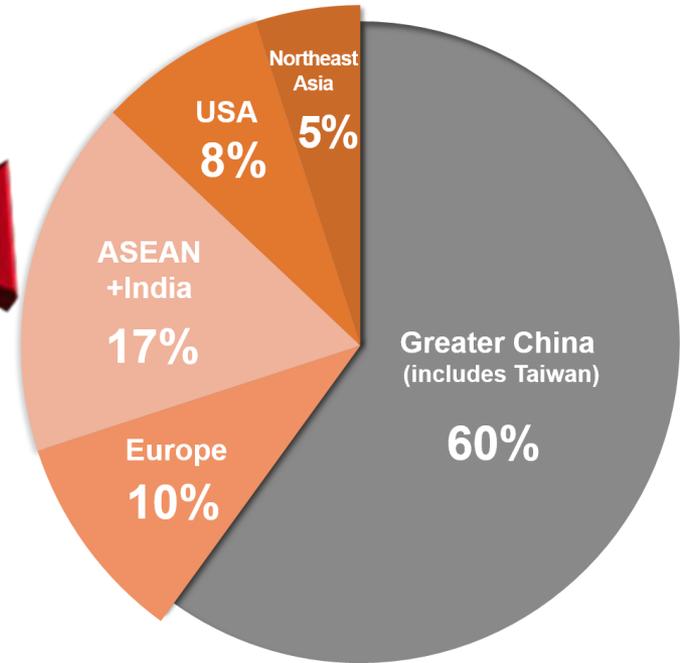
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Growth Strategy – Regional Market

2022 Regional Market



2025 Regional Market





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THINKING ASEAN Focus Segments

		Malaysia	Singapore	Thailand	Vietnam	Philippines	Indonesia
GCM / GCE office		★★★	★★★★			★	
GEMS production (Overseas)		★★★★	★	★★	★★	★	★
GEMS production (Taiwanese)		★★		★	★★★★		★★
Home Appliances and Lighting	Home appliance	★★		★★★★			★
	Lighting	★★★★		★★			
Information and Communication Technology	Telecom	★★★★		★★	★		
	Power Supply			★		★★★★	
	Consumer Electronics			★★★★	★★		
	Computer (SSD / HDD)	★★★★	★★	★★★★			
Automotive and Industrial	Automotive	★★		★★	★	★	★★★★
	Industrial	★	★★				
Medical and Others	Medical	★★★★	★★	★			
	Mobile				★★★★		

★★★★	High Priority	★★	Medium Priority	★	Low Priority
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Continuous Expansion Plan



Southern CN: IT & Home appliance, 2024



TW: Automotive: 2023 H2



Your Best Choice

Vision

Contribution to Human Life in **A T I M**



Automotive



Telecom



Industrial



Medical



THANK YOU!

THINKING

Contribute to safety and operation efficiency of electronics