



Your Best Choice



THINKING Legal Person Briefing Session





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Financial Status



Company Introduction



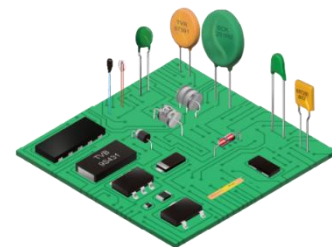
Markets and Customers



Competitive Strength



Strategy for Growth





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Operation Overview: Sales Revenue Analysis

In Thousands of New Taiwan Dollars

Month	Feb-23	Jan-23	Feb-22	MOM(2023.2vs2023.1)		YOY(2023.2vs2022.2)	
				Diff	%	Diff	%
THINKING	557,138	536,287	547,430	20,851	4%	9,708	2%

Accumulated	2023.1~2023.2	2022.1~2022.2	Diff	%
THINKING	1,093,425	1,227,352	(133,927)	-11%



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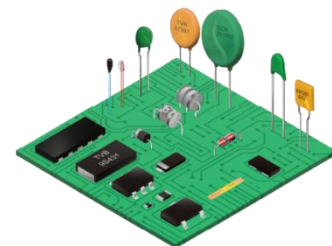
Markets and Customers



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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.”



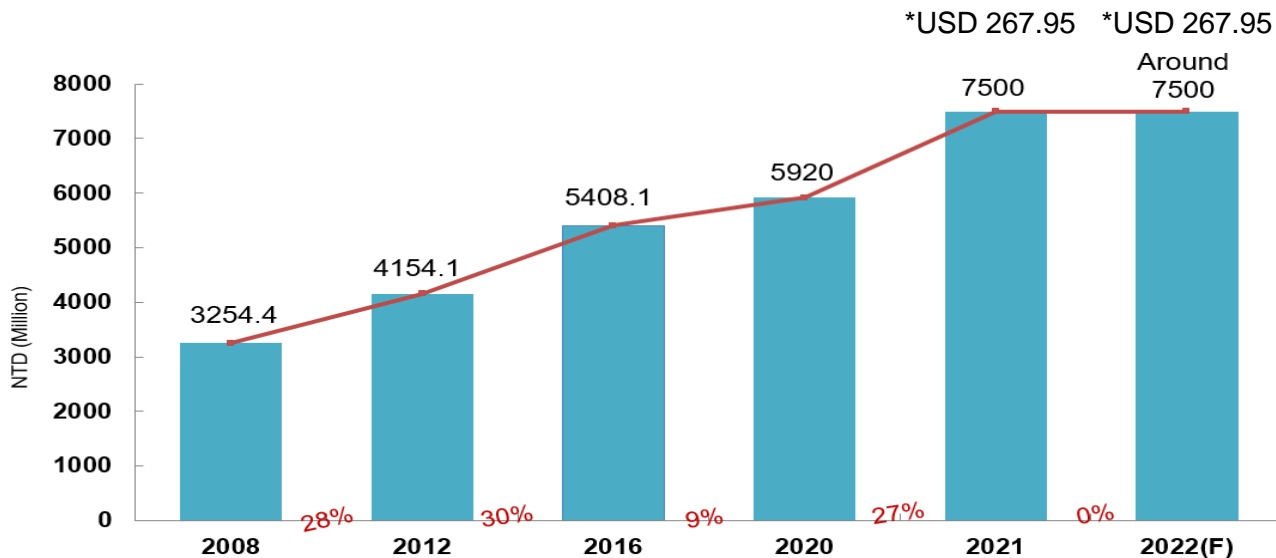
<i>T</i>	<i>Think</i>
<i>K</i>	<i>Keen</i>
<i>S</i>	<i>Service</i>



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Company Introduction

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

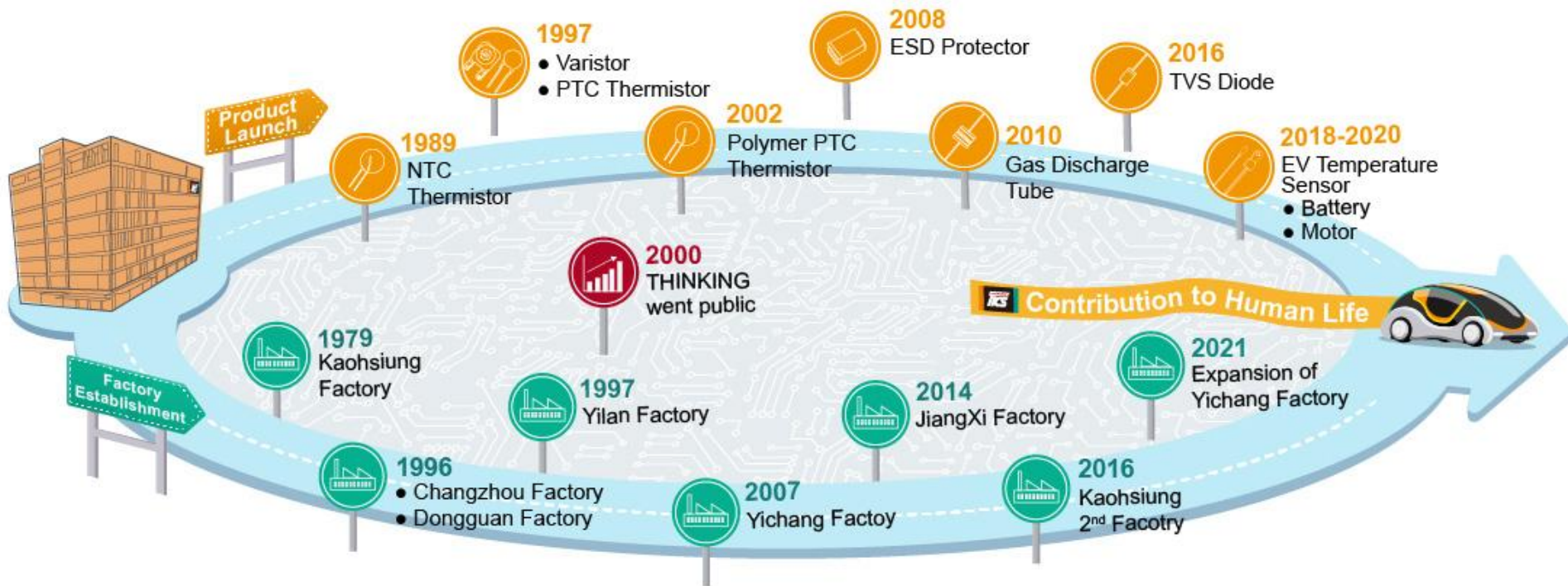


* Using an exchange rate of 1 USD =27.99 NTD



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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



Changzhou Factory



Yilan Factory



Kaohsiung 1st Factory



JiangXi Factory



Dongguan Factory



Kaohsiung 2nd Factory





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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



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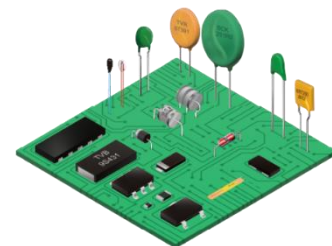
Markets and Customers



Competitive Strength



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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



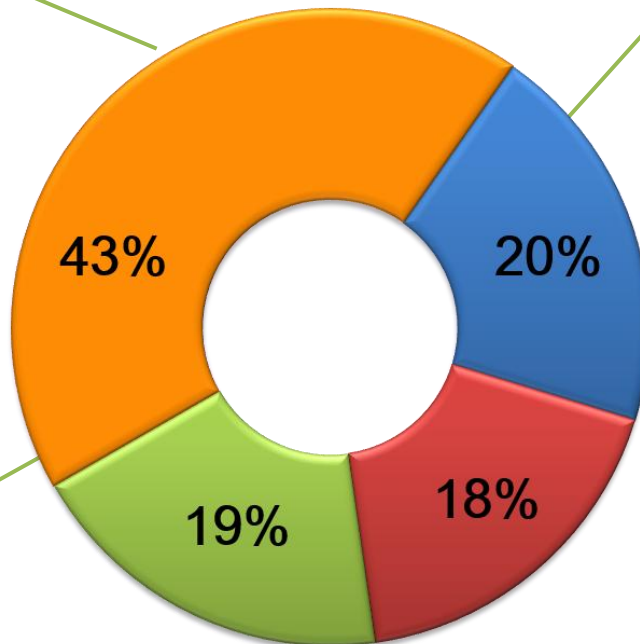
Medical

Other

Other applications



Distributor

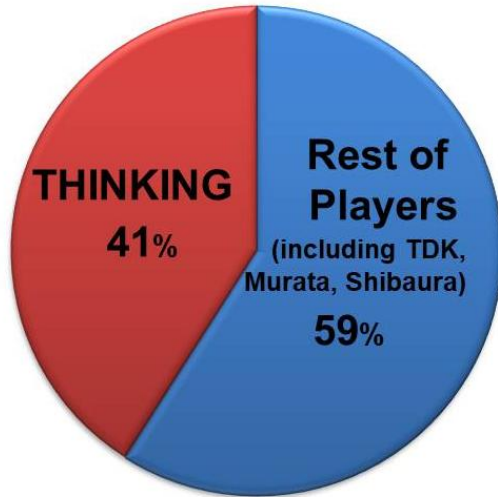




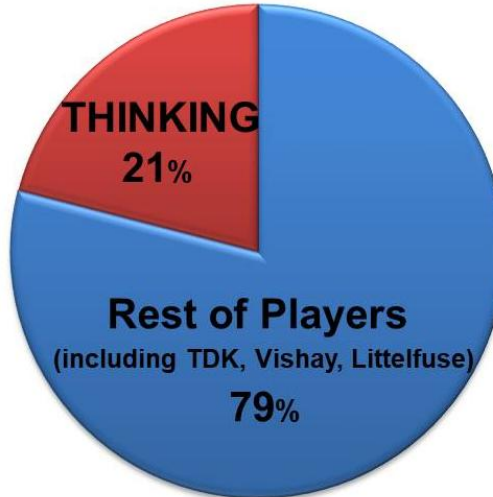
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Market Positions of THINKING Products

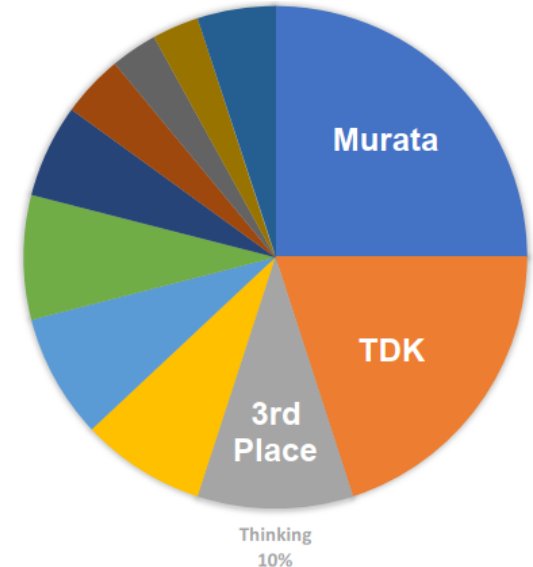
THINKING
NTC Thermistor



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.



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Markets and Customers



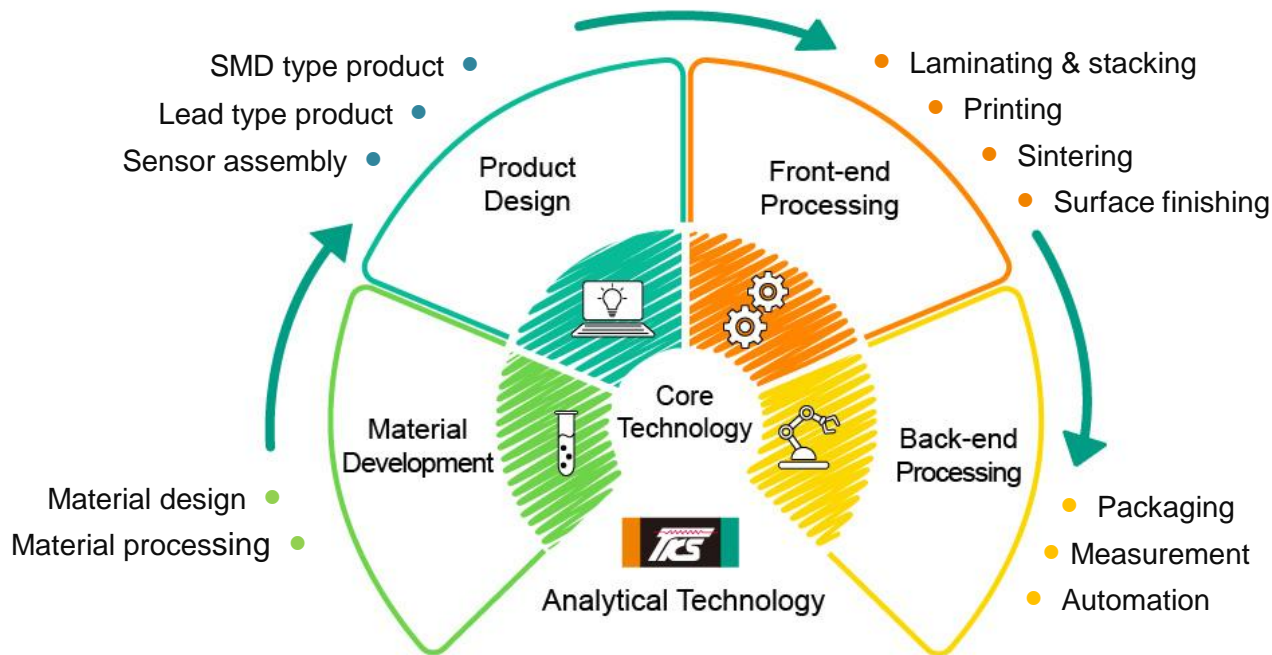
Competitive Strength



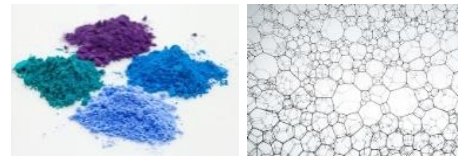
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Core Technology

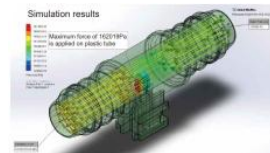


Material Development



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 CTPD (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



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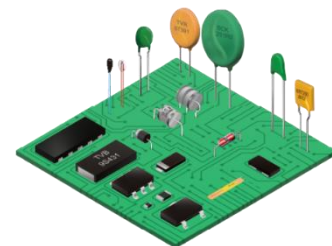
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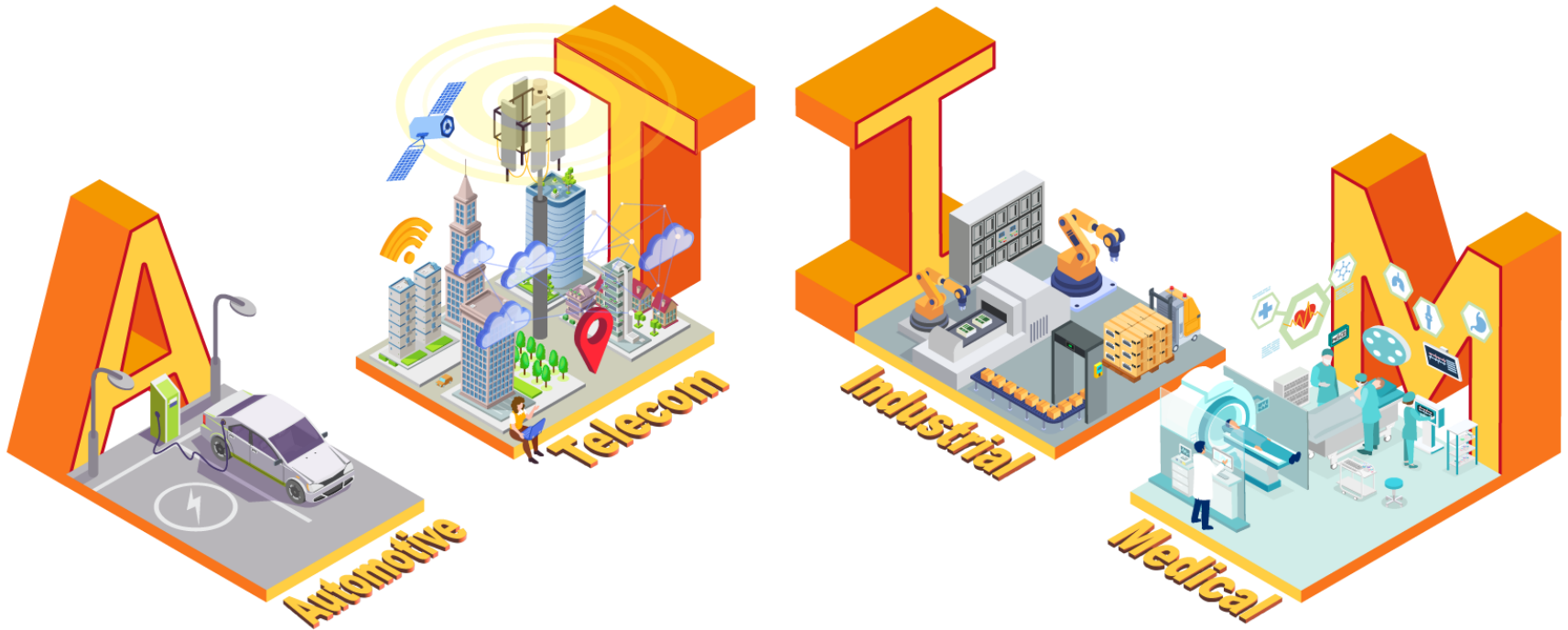


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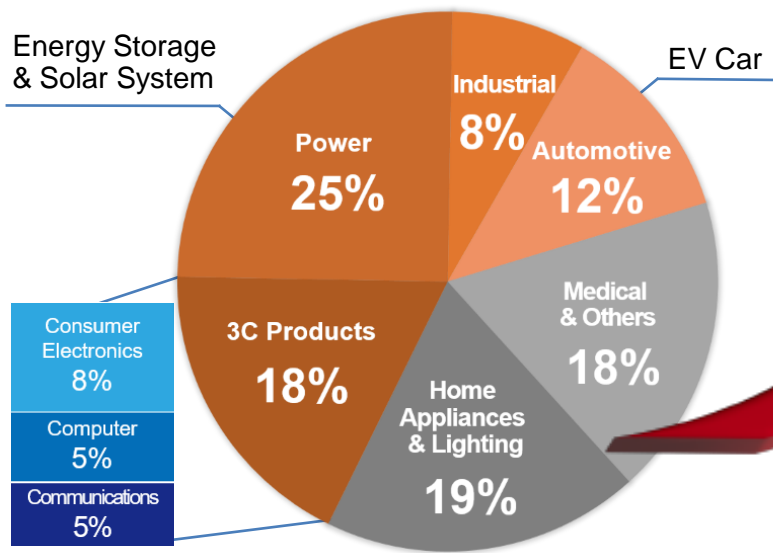
Focus Markets

Contribution to Human Life in ATIM

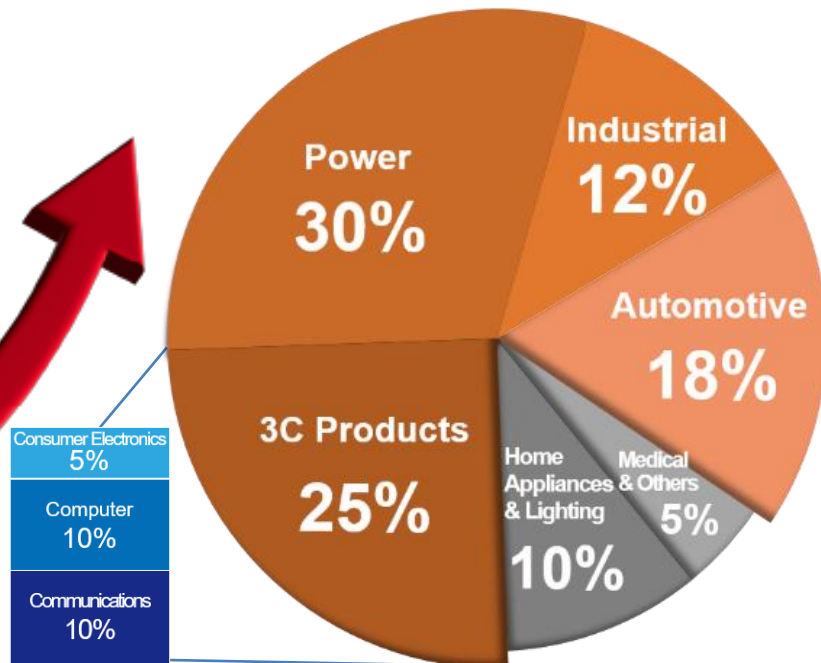


Growth Strategy – Application Focus

2022 Sales by Applications



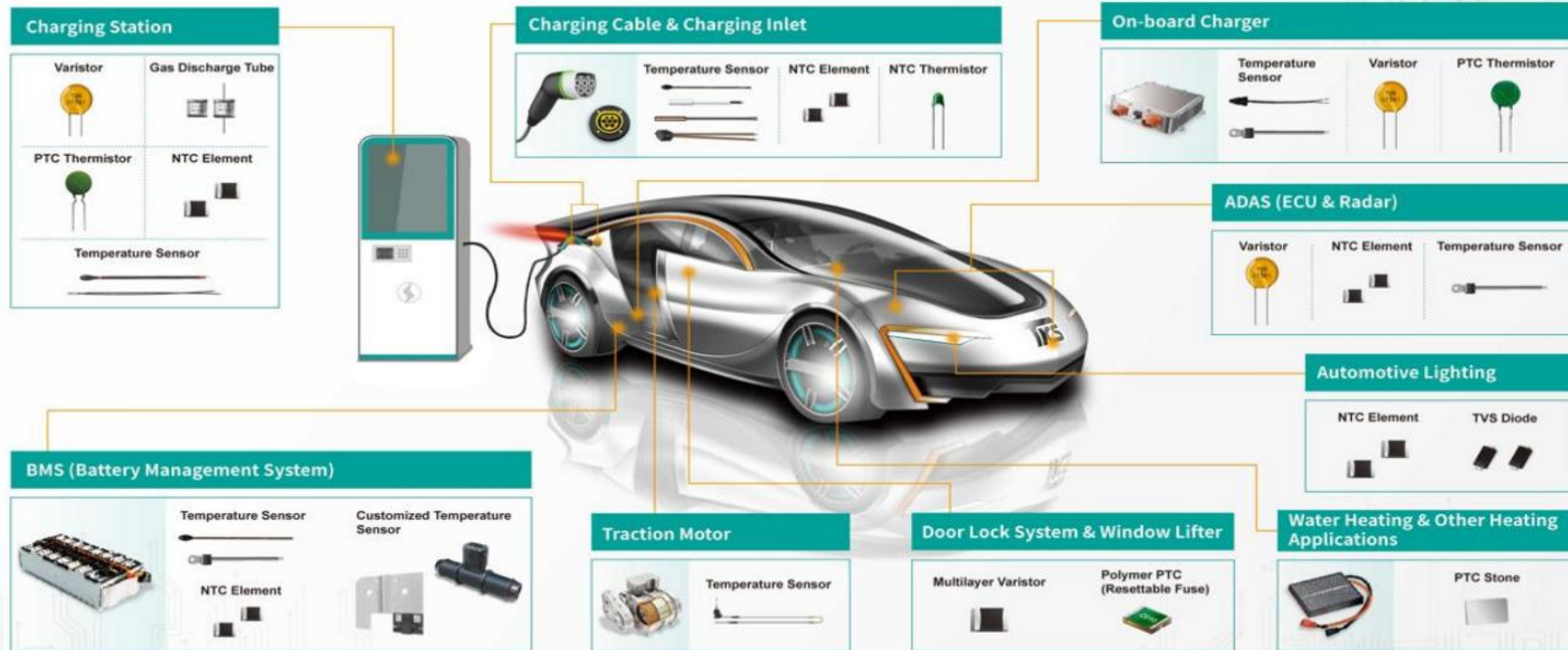
2025 Sales by Applications





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EV Applications



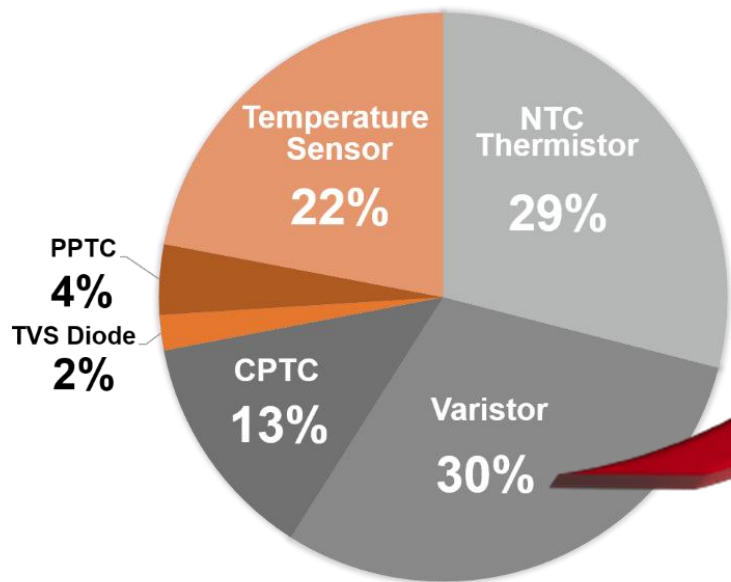
THINKING ELECTRONIC INDUSTRIAL CO., LTD.



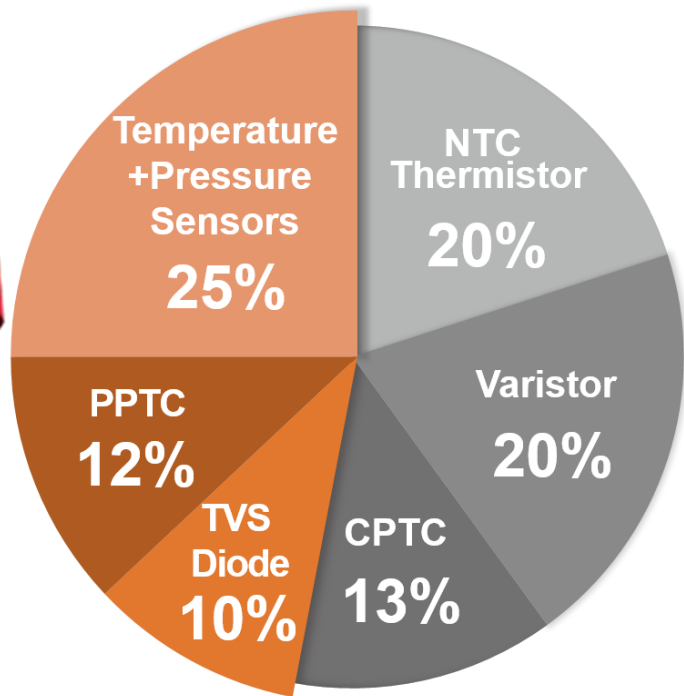
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Growth Strategy – Products Development

2022 Sales by Products



2025 Sales by Products



Growth Strategy – Products Development

● 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.



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Growth Strategy – Products Development

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

- 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

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



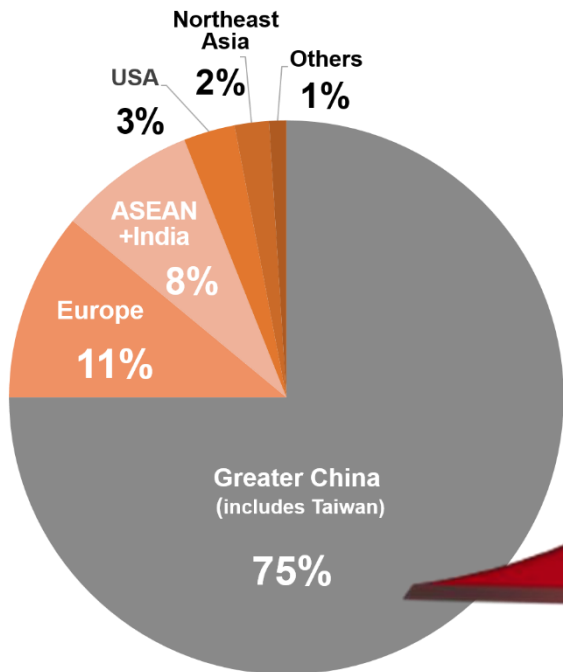
Mobile Phone



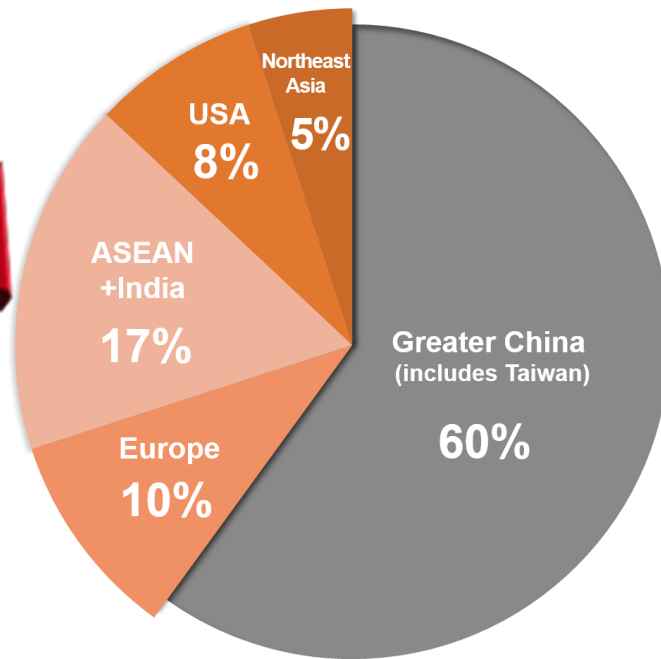
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Growth Strategy – Regional Market

2022 Regional Market



2025 Regional Market



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



Zhongshan Factory

Southern CN: IT & Home appliance, 2024



Kaohsiung Factory

TW: Automotive: 2023 H2



THANK YOU!

THINKING

Contribute to safety and operation efficiency of electronics