



PANJIT International Inc.

PANJIT
SEMI
CONDUCTOR

Chief Strategy Officer

Jasper Lee

APR. 2019

- About PANJIT
- New Team
- New Technologies
- Financial Info.

關於強茂
新團隊
新科技/技術
財務訊息



About PANJIT

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PANJIT Overview

TWSE : 2481 (2000 IPO)

Founded in 1986

Corporate Headquarters: Kaohsiung, Taiwan

Capital: \$124 Million USD

2018 revenue: \$334 Million USD

Approximately 3,000 employees worldwide

1 front-end fabrication sites

2 back-end manufacturing sites

ISO9001: 2015 Certified / IATF16949: 2016 / IECQ QC080000: 2012



PANJIT GROUP



PANJIT
Est. May 1986
Product: Discrete
Packaging & Testing

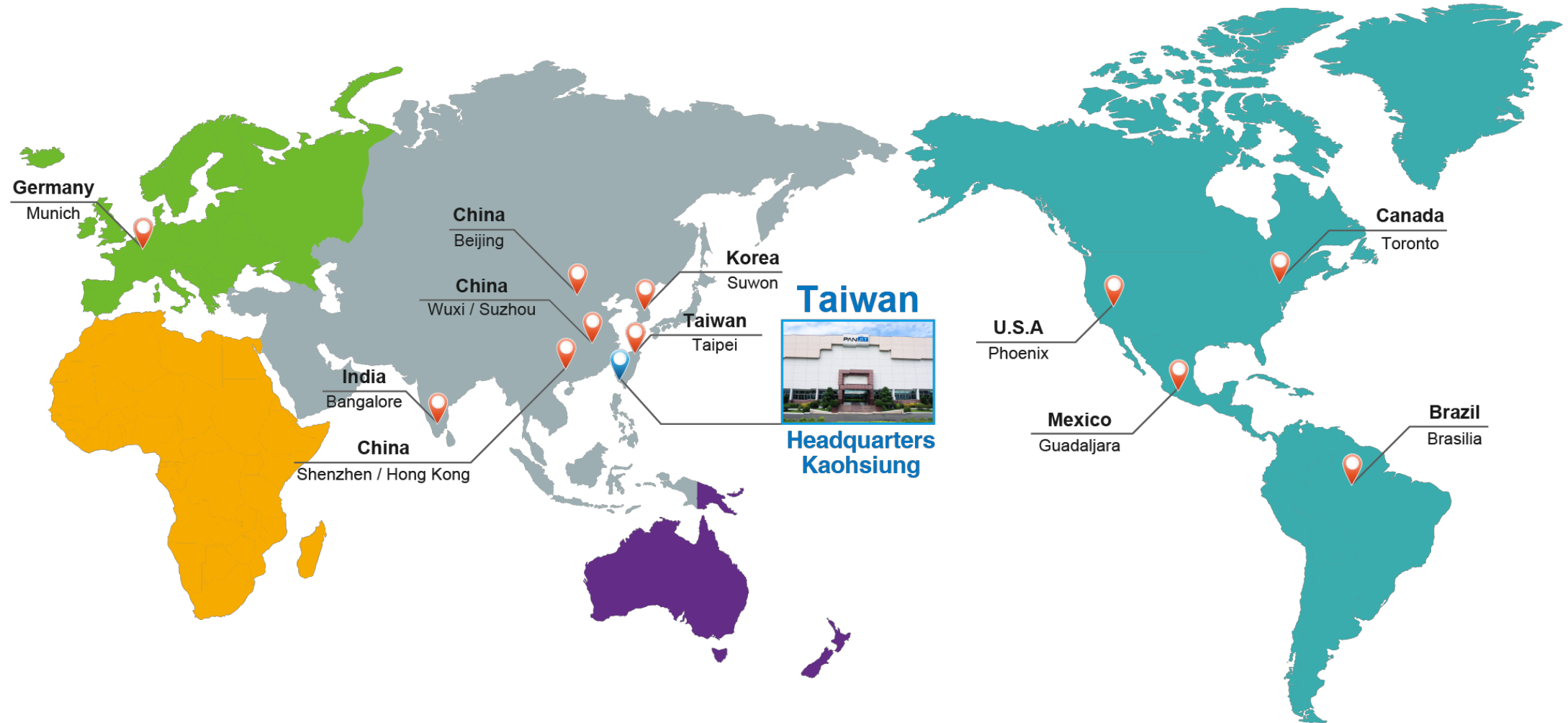


PYNMAX
Est. Mar 2000
Product: Wafer Foundry



Sumnergy
Est. Jun 2017
Product: BMS, Battery Pack

PANJIT Sales sites

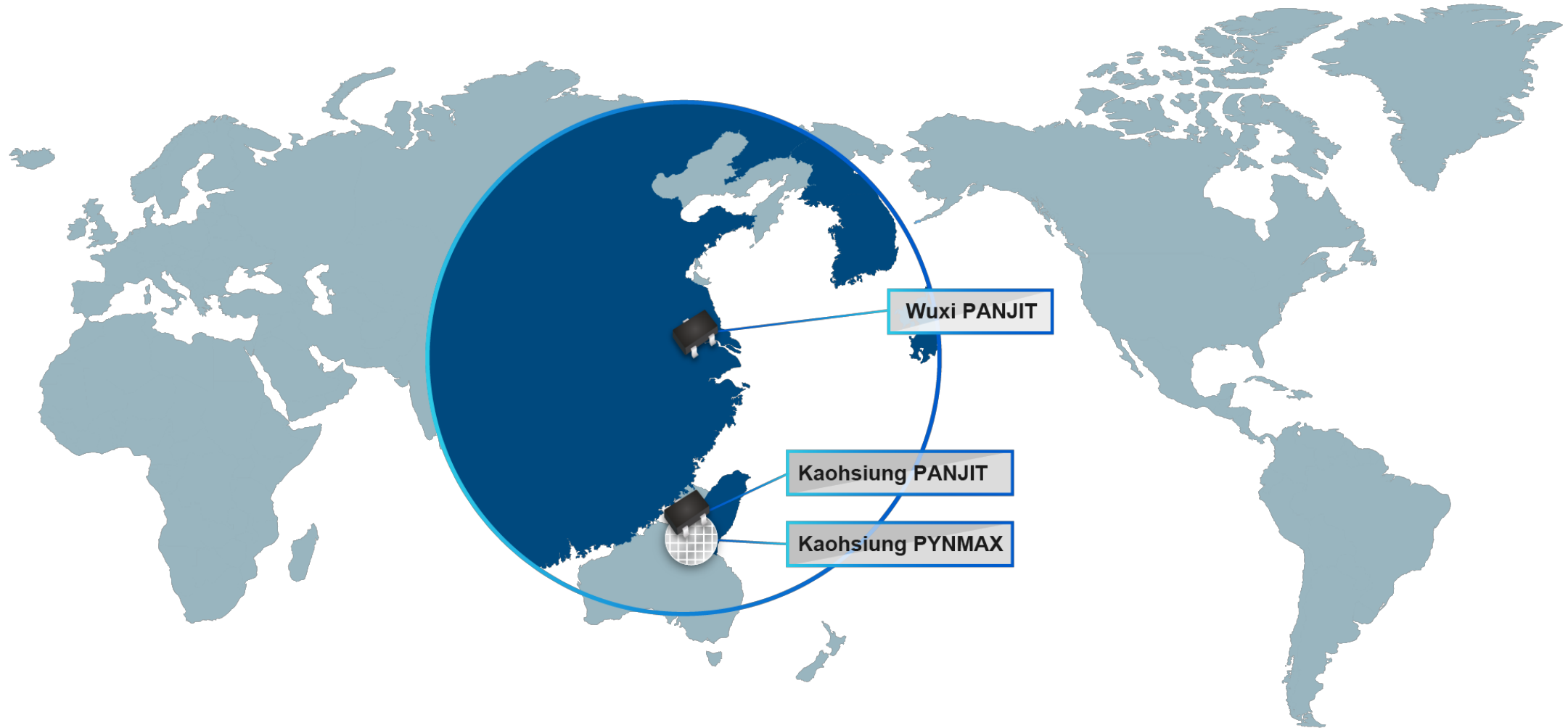


 **Headquarters**  **Sales Office**

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PANJIT Manufacturing sites



Front-End



Back-End

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PANJIT R&D Sites

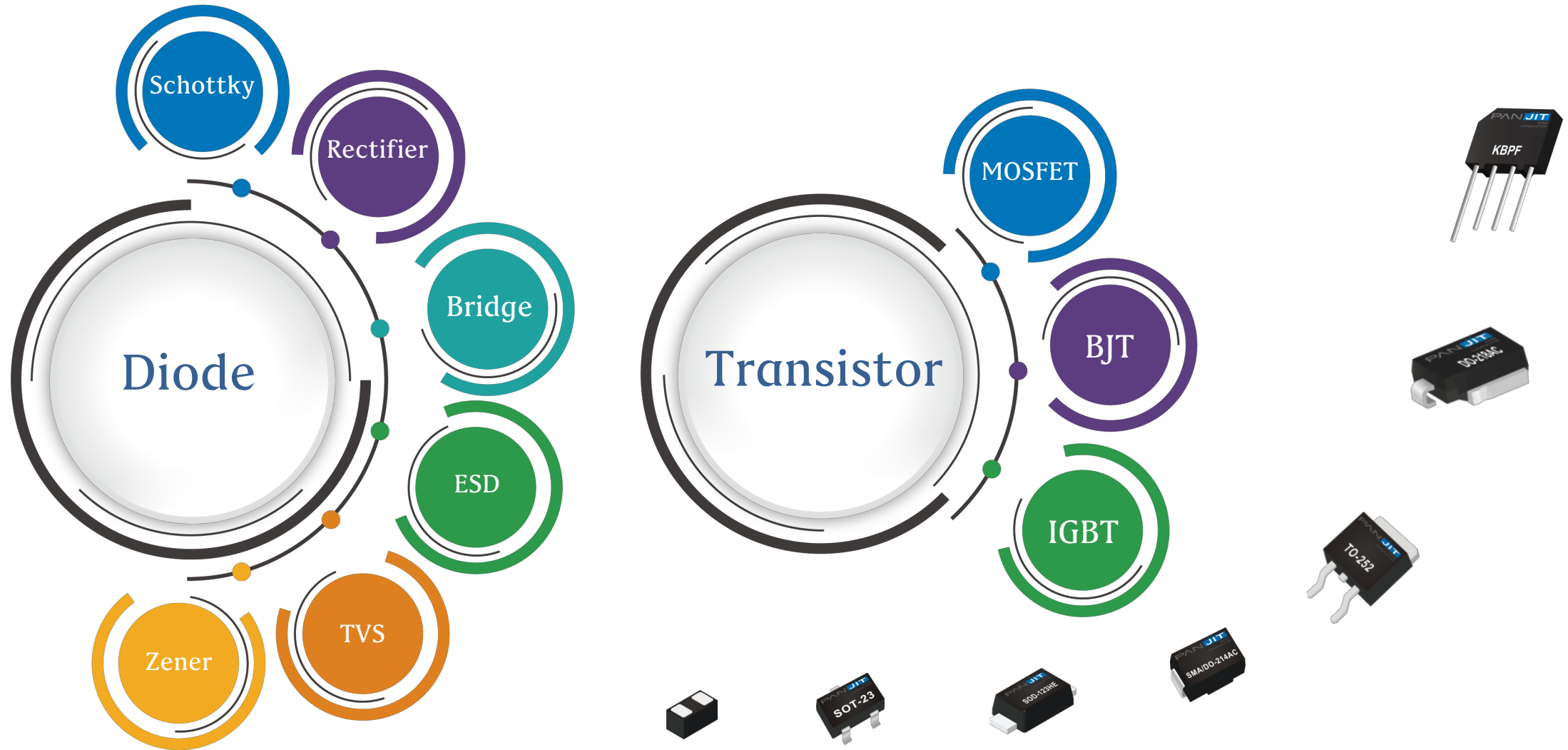


PANJIT & PYNMAX



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PANJIT Product Function



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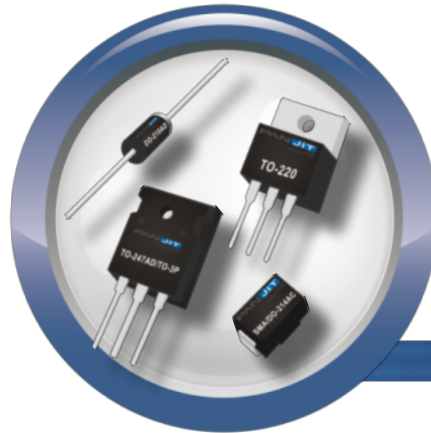
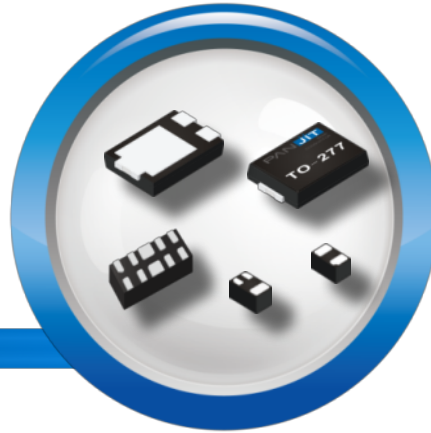
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Packaging & Testing

Gangshan

Package: Small Signal Devices

Capacity: 1,400 KK /month

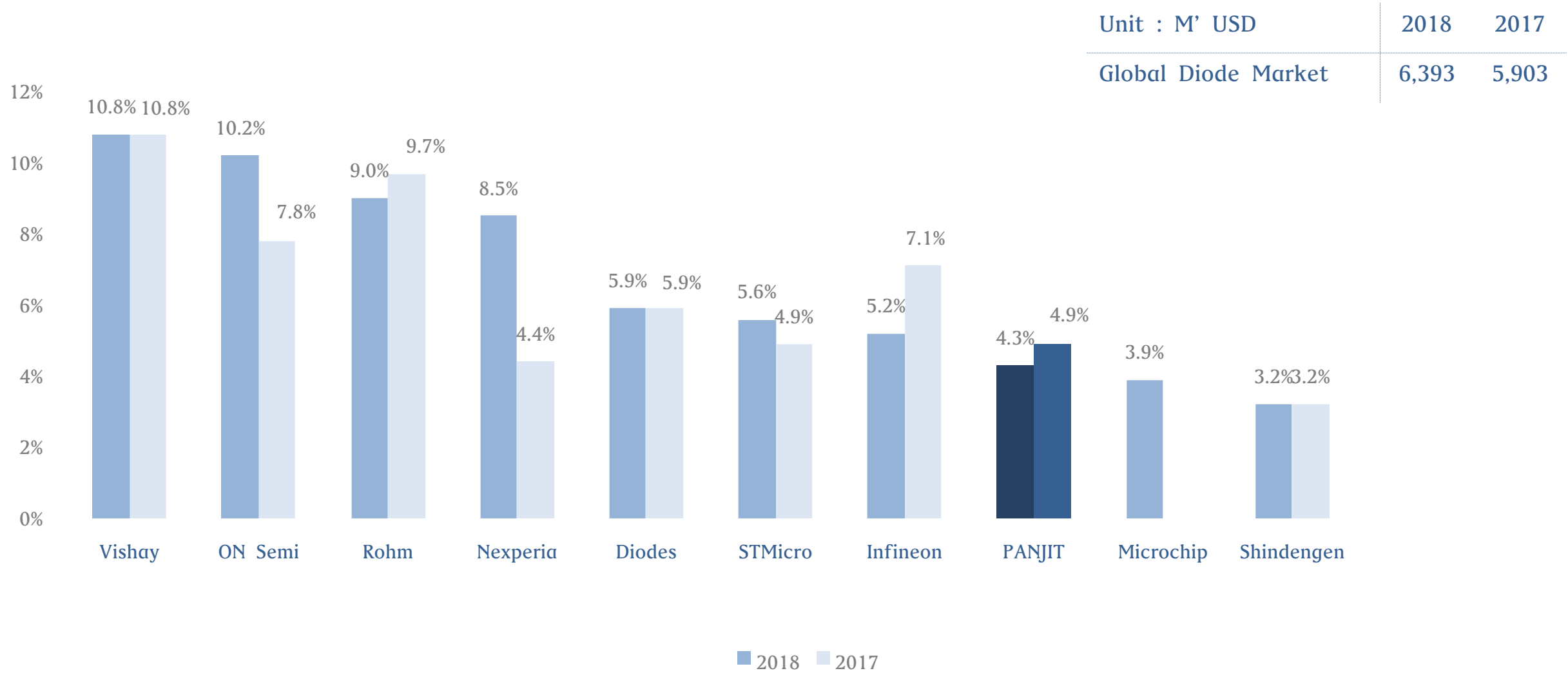


Wuxi

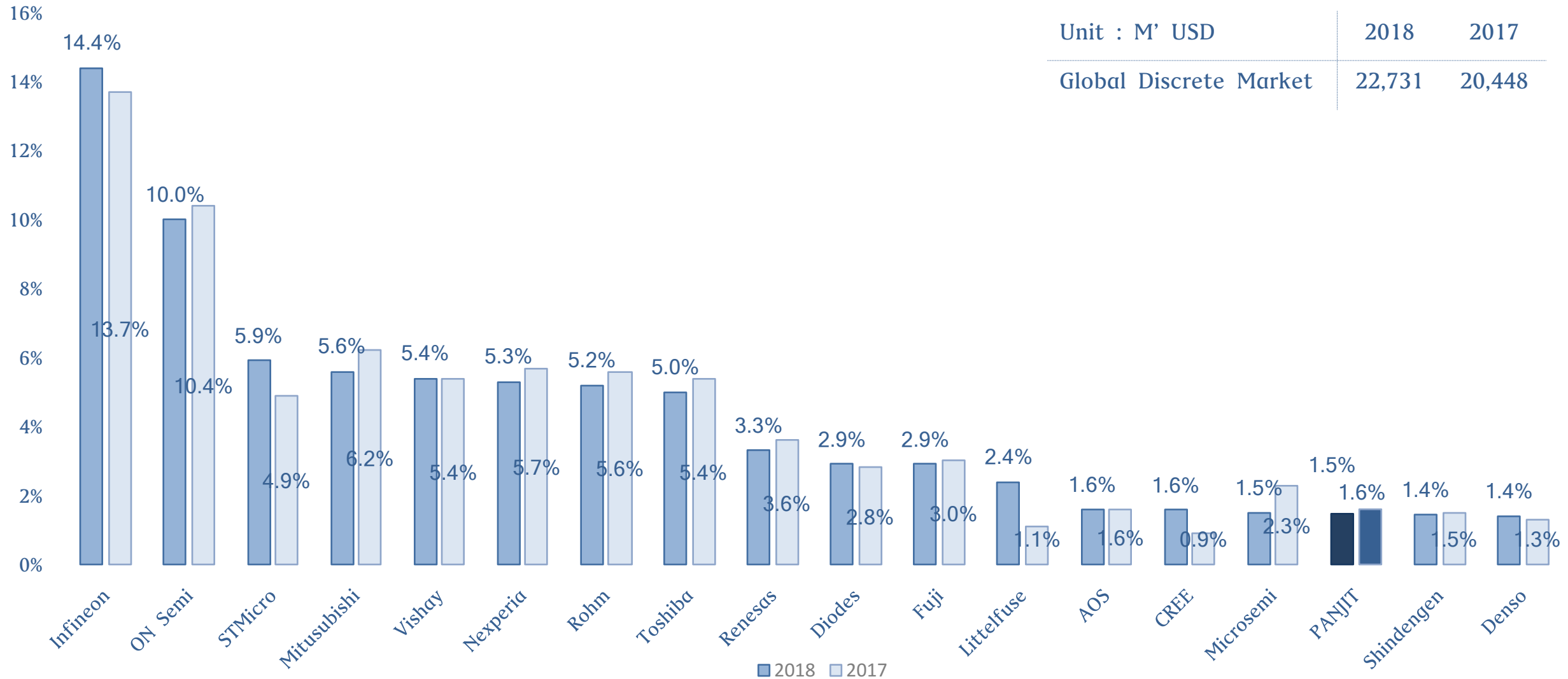
Package: Power Package Devices

Capacity: 550 KK /month

Global Diode Ranking & Market Share



Global Discrete Ranking & Market Share



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2018 results: growth momentum built, highlight

Milestone	NTD 10 Bn Share price \$70
Profitable Growth	EPS 2.41, Capital reduction NTD 1 + Cash dividend NTD 0.5 Net working Capital 2018: 2,078 2017: 1,984
Customers.	Qualification Passed by Major Top 100 AU clients.
Transformation	Starting to globalize and promoting company brand. Diversifying Product with IGBT, MOSFET.

2019 Highlight

New

R&D Centre : San Jose

Technologies

Fab Tools upgrade 6" & 8"

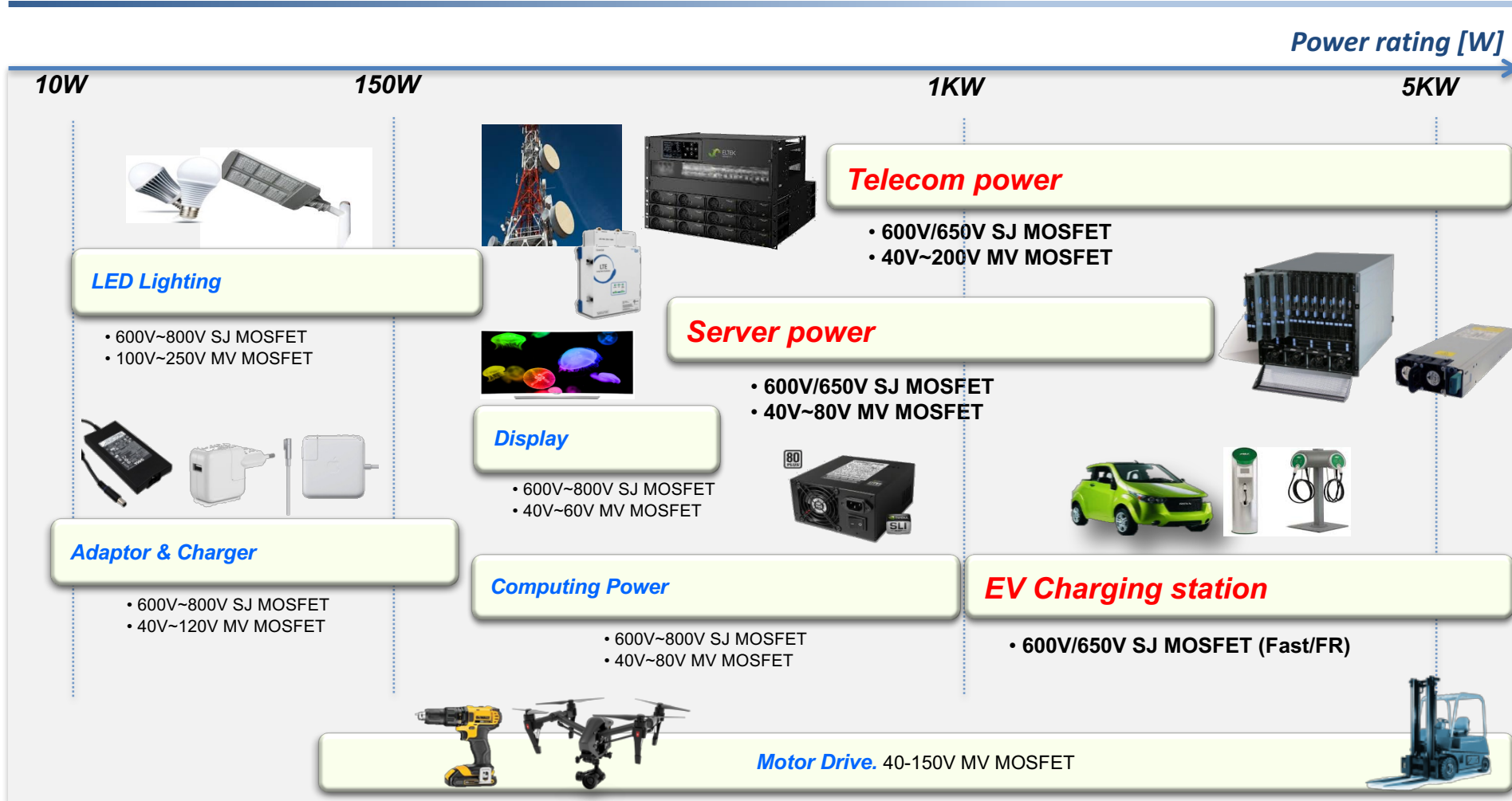
Front-side fab foundry option settle-down (8")

In-house key toolset set-up for new tech development & mass production (8")

New Team Introduction

New Technology MOSFET

MV/HV MOSFET application



- Telecom power (TO220/F, TO247, D2PAK7L, PQFN56/88, TOLL)
- Server power (TO220/F, TO247, PQFN56/88, TOLL)
- EV Charging station (TO247, TOLL)

MOSFET Package Trend

Alt Energy
(EVC, Solar)



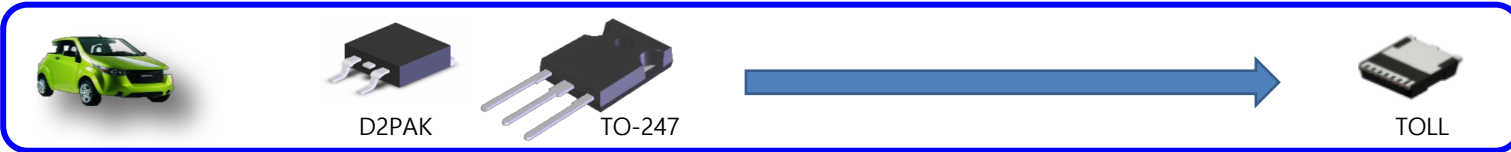
Cloud
(Telecom)



Cloud
(Server)



Auto
(OBC)



Wireless



Consumer



PANJIT Plan: 2021-2022

2023-

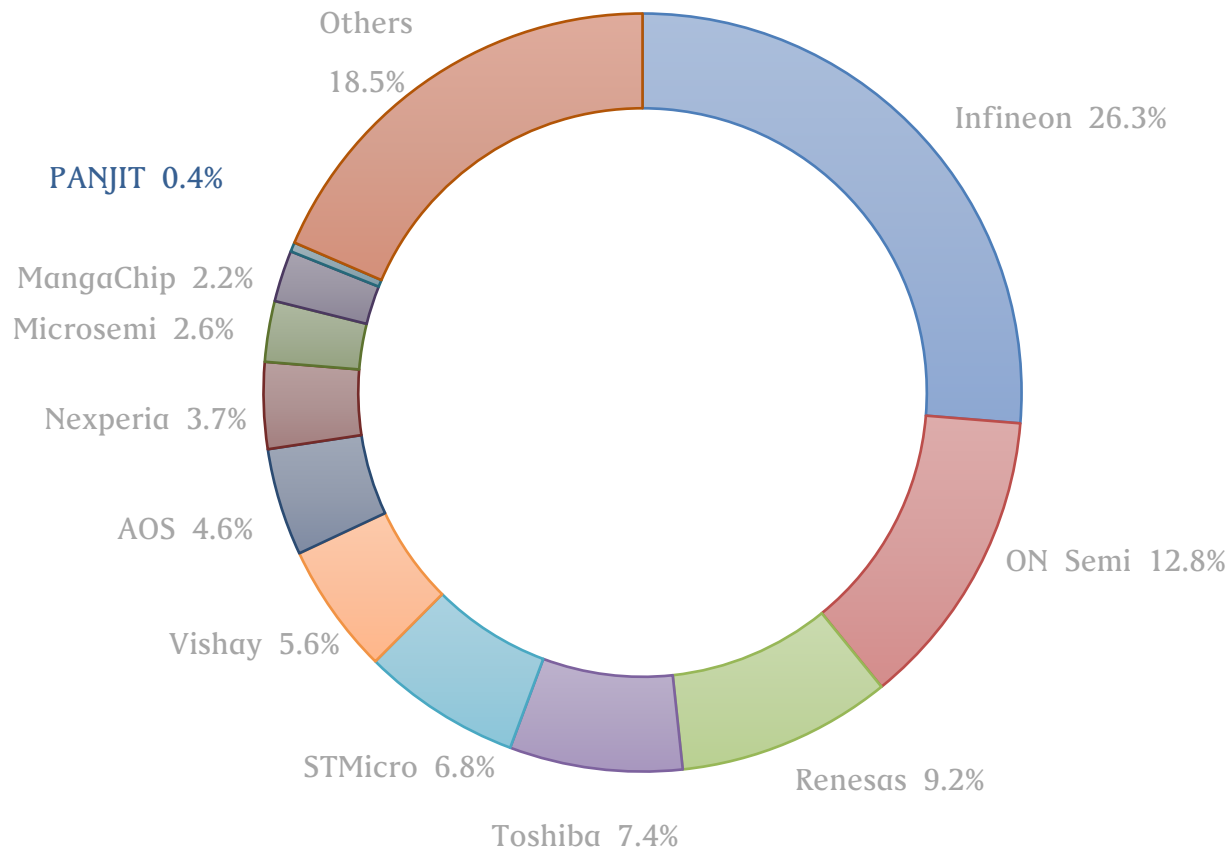
☐ Value = Power Density → Surface Mount

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MOSFET Market Share

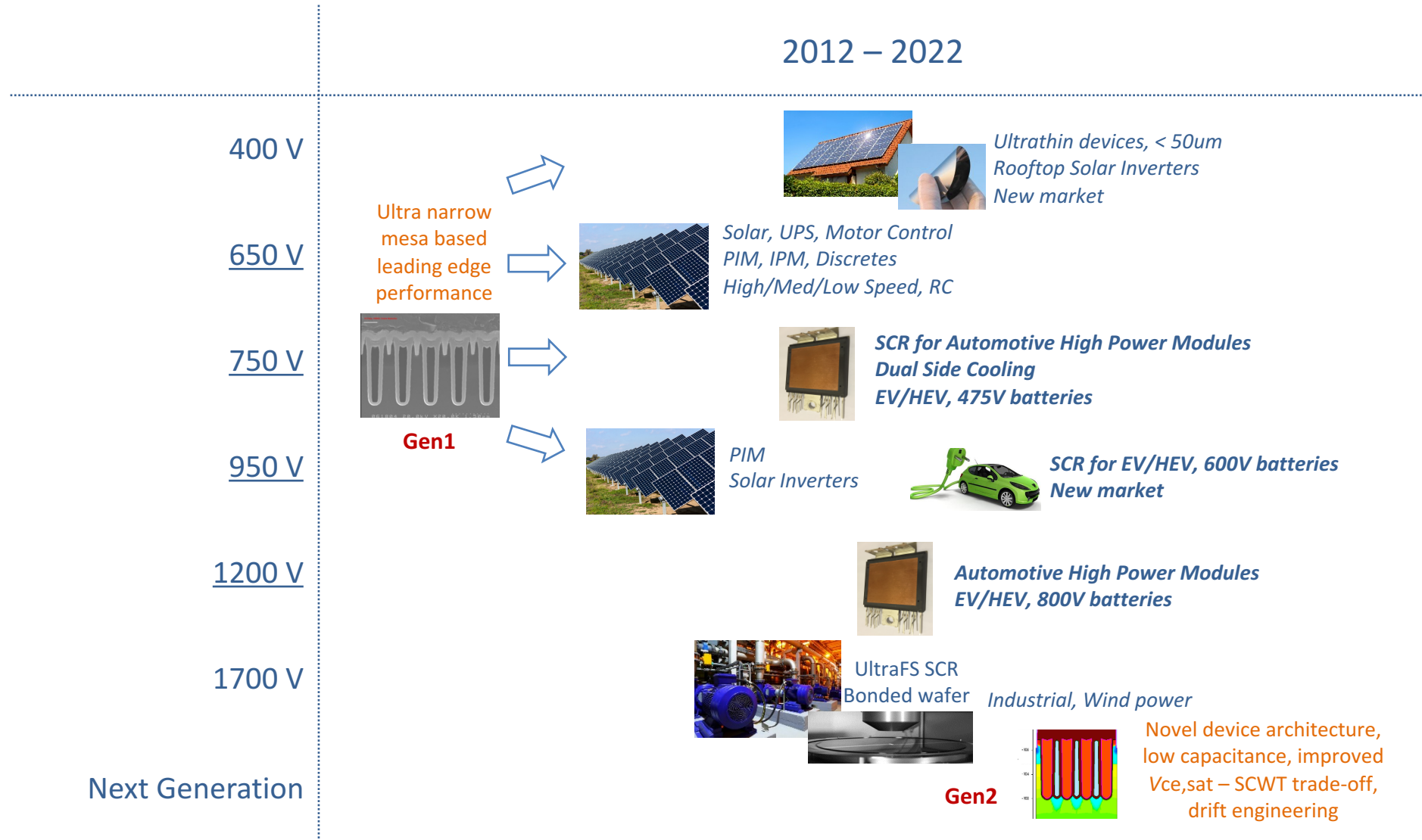
2017 MOSFET Market share



MOSFET Company	Market Share (%)	
	2016	2017
Infineon Technologies	26.0	26.4
ON Semiconductor	13.0	12.9
Renesas Electronics Corporation	9.0	9.2
Toshiba	7.4	7.4
STMicroelectronics	7.2	6.8
Vishay Intertechnology	5.8	5.6
Alpha and Omega Semiconductor	4.6	4.6
Nexperia	0.0	3.7
Microsemi	3.0	2.6
MagnaChip Semiconductor	2.2	2.2
PANJIT	0.4	0.4

New Technology IGBT

IGBT Technology to Applications

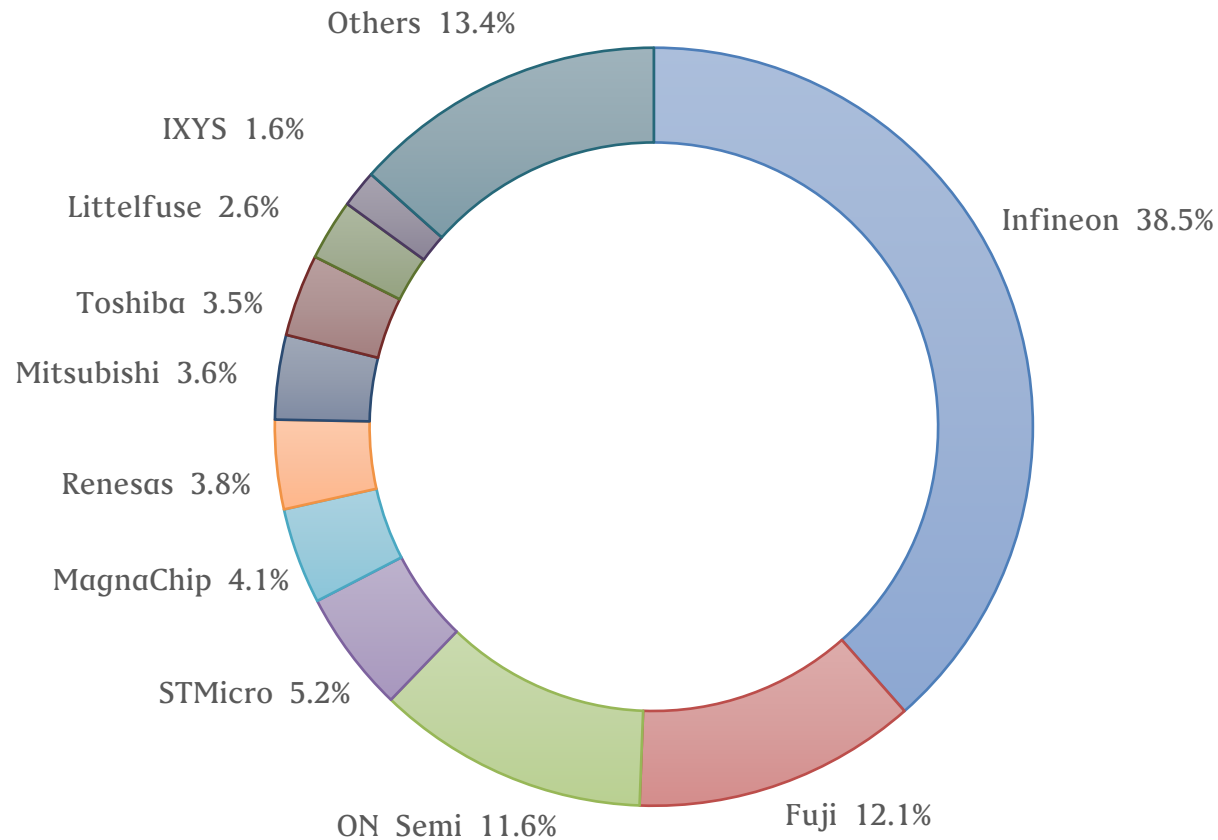


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IGBT Market Share

2017 IGBT Market Share



IGBT Company	Market Share (%)	
	2016	2017
Infineon Technologies	36.5	38.5
Fuji Electric	14.8	12.1
ON Semiconductor	11.8	11.6
STMicroelectronics	4.2	5.2
MagnaChip Semiconductor	4.2	4.1
Renesas Electronics Corporation	3.8	3.8
Mitsubishi (inc. Powerex)	3.7	3.6
Toshiba	3.5	3.5
Littelfuse	4.1	2.6
IXYS	1.6	1.6

New Technology SiC

SiC Diode Application Specific

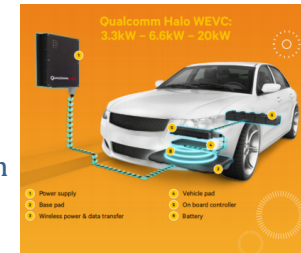


650V SiC Diodes (Fast)
Power supplies/PFC
Market share 2018: **60%**
Key FOM: $Q_c \times V_f$



650V/1200V SiC Diodes
Hybrid inverter/Solar
Market share 2018: **20%**
Key FOM: Low reverse leakage,
Moisture resistance, Module

1200V SiC Diodes
Battery charger, OBC, Traction drives
Market share 2018: 8%
Key FOM: Surge capability, SMD package, Low R_{th}



1200V SiC Diodes
Industrial Drives, DCDC
Market share 2018: 5%
Key FOM: Robustness, Price,
Excellent thermal package

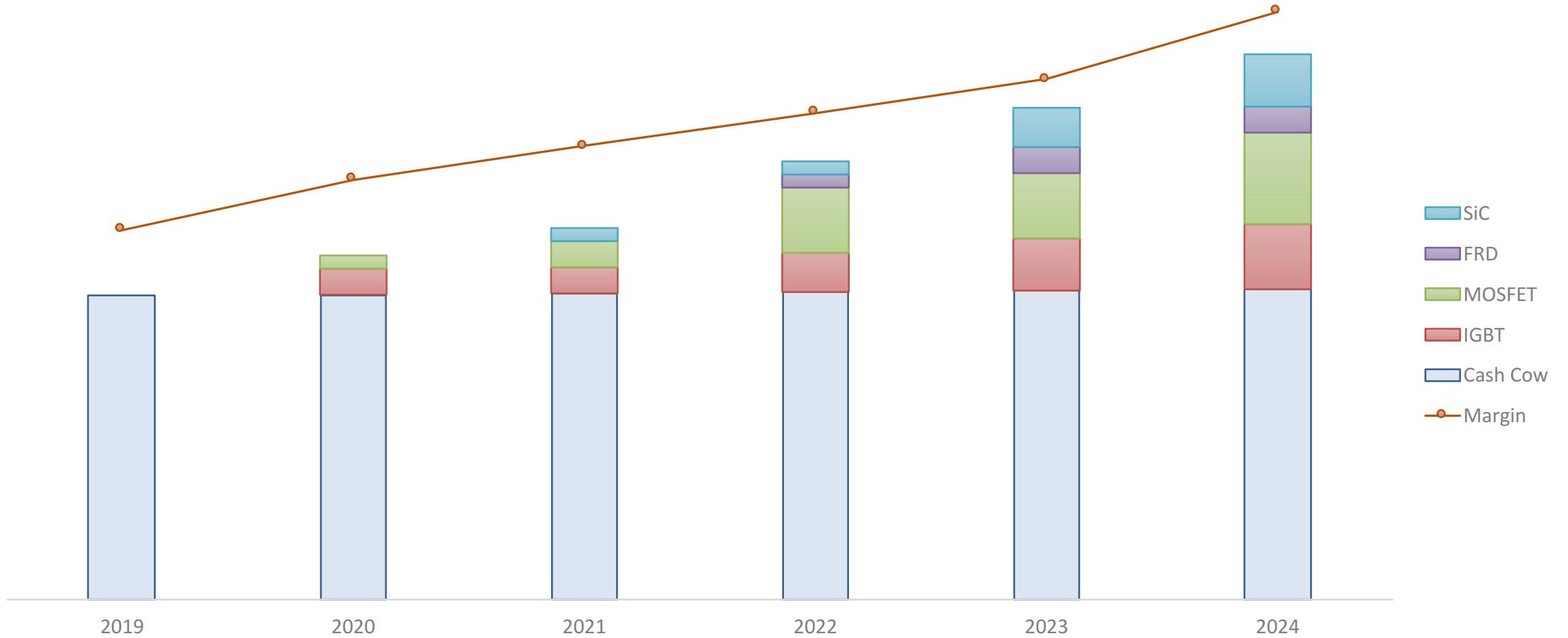


Simple part with diverse needs

1700V-3300V SiC Diodes
Traction drives, HVDC systems
Market share 2018: 5%
Key FOM: Robustness, Leakage,
Max die size/price



Driver for next 5 years

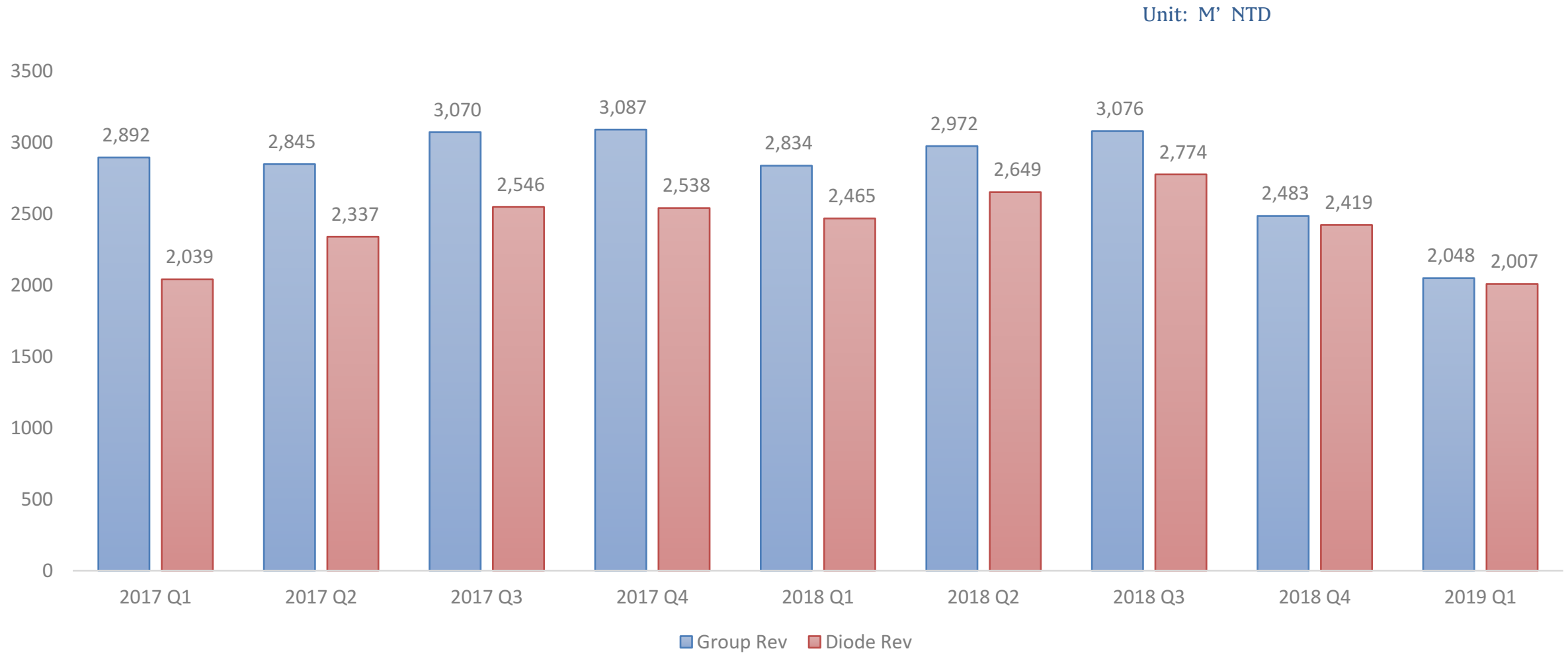


Financial Info

Results summary

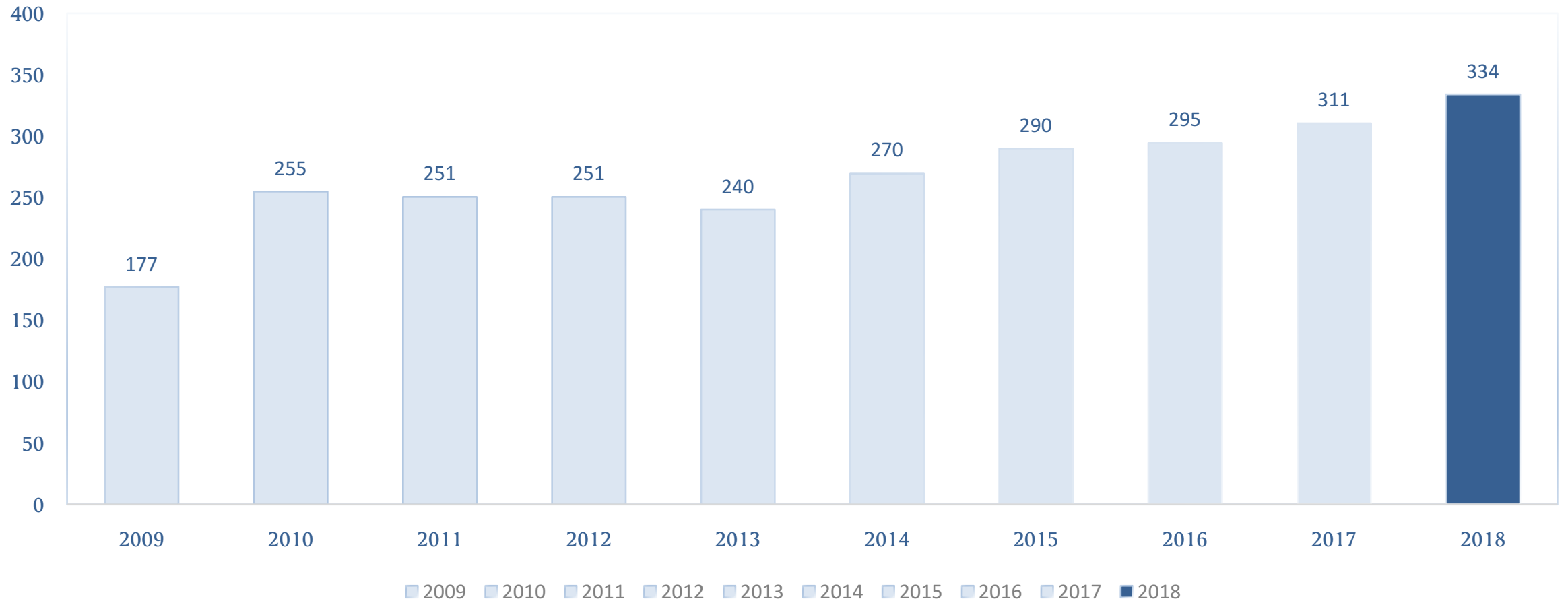
	Revenues	Gross Margin	EBITA & Margin	EPS	Cash Flow from Operating Activities
FY 2018	NTD 11.3Bn	22.3%	NTD 9,780.6 Mn 86.1%	NTD 2.41 + 360%	NTD 1,835 Mn
2019 Q1	Revenues NTD 2 Bn		EBITA & Margin NTD 1,743.6 Mn 85.15%		Cash Flow from Operating Activities NTD 466 Mn

PANJIT Group Rev & Semiconductor BU Rev



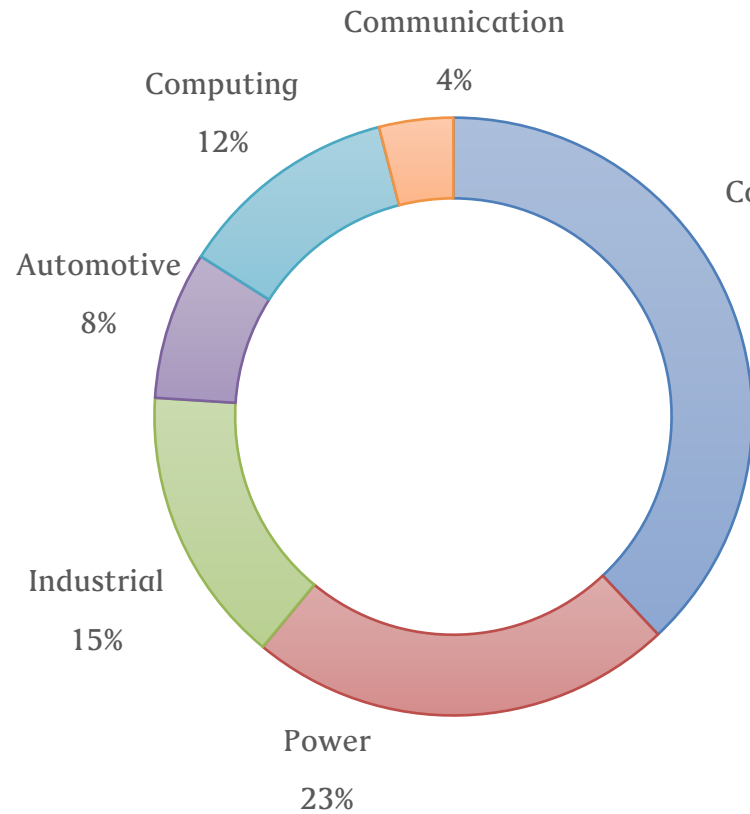
Semiconductor BU Revenue.

Unit: M' USD

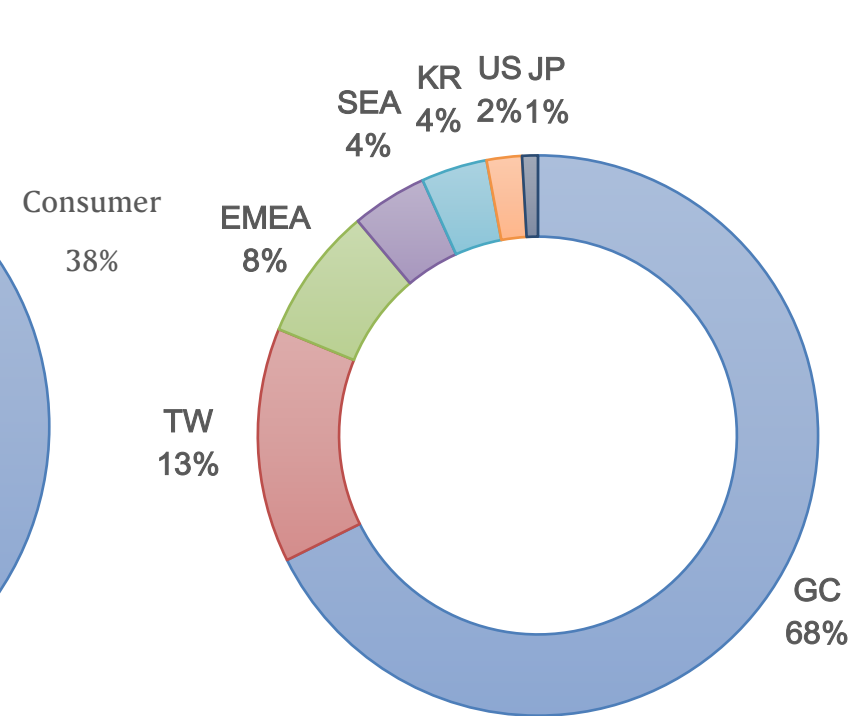


2018 Semiconductor BU Revenue Break down

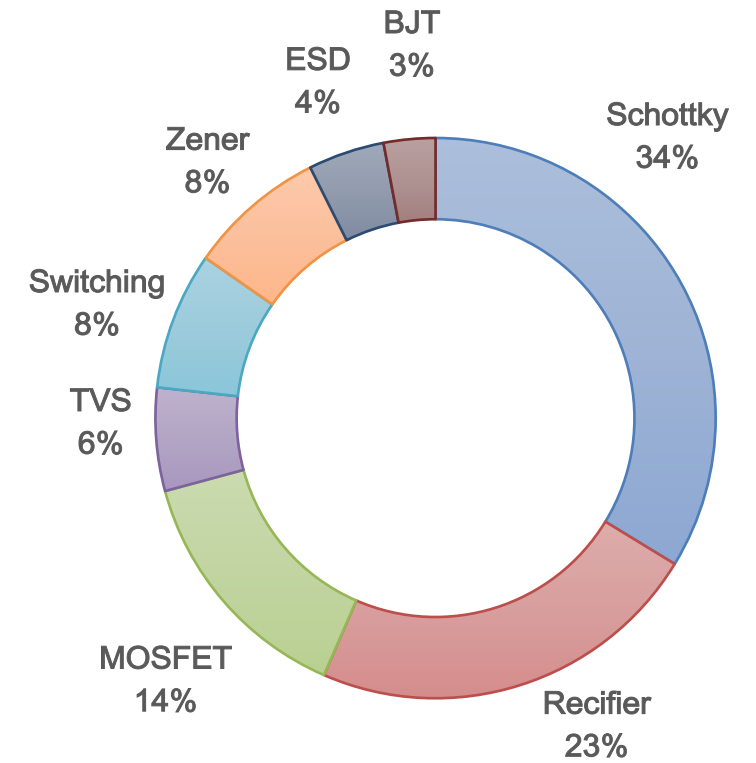
Application



Regional

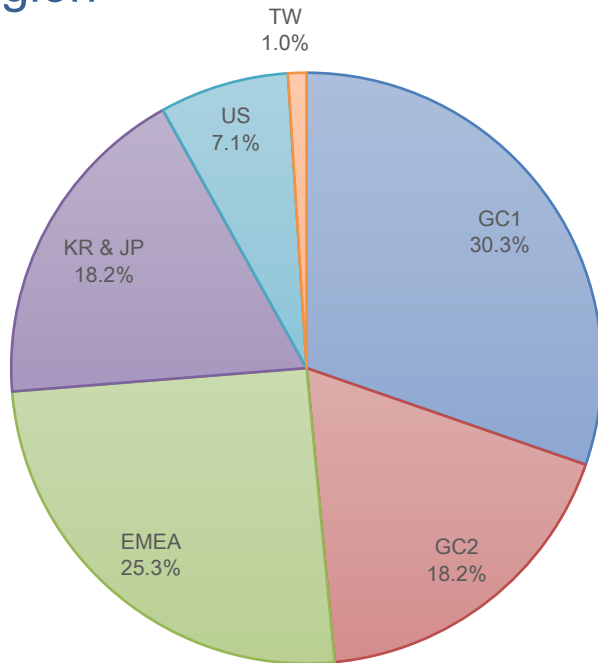


Function

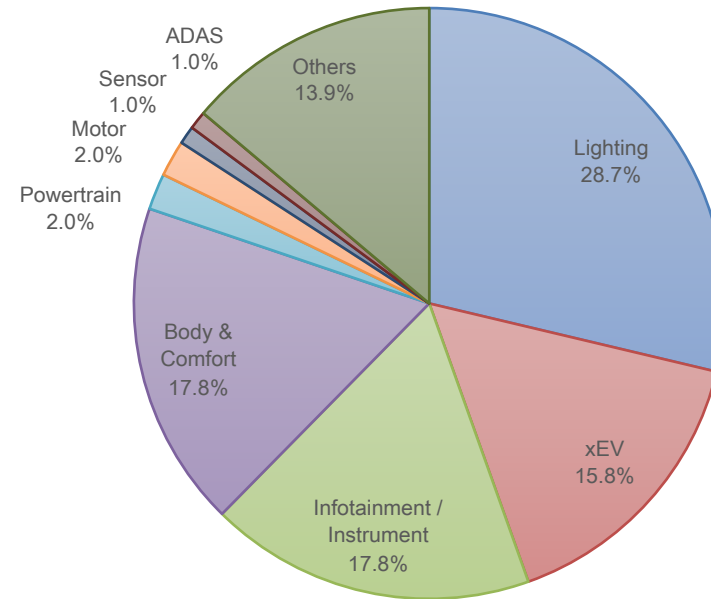


PANJIT Automotive 2018 Revenue breakdown

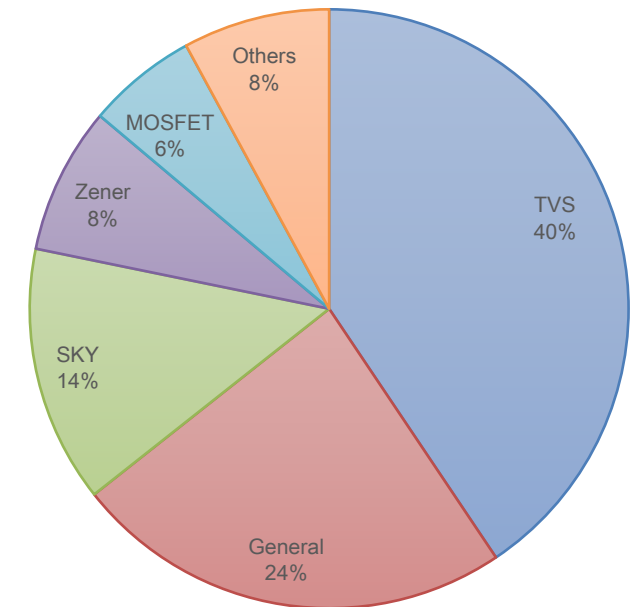
Region



System

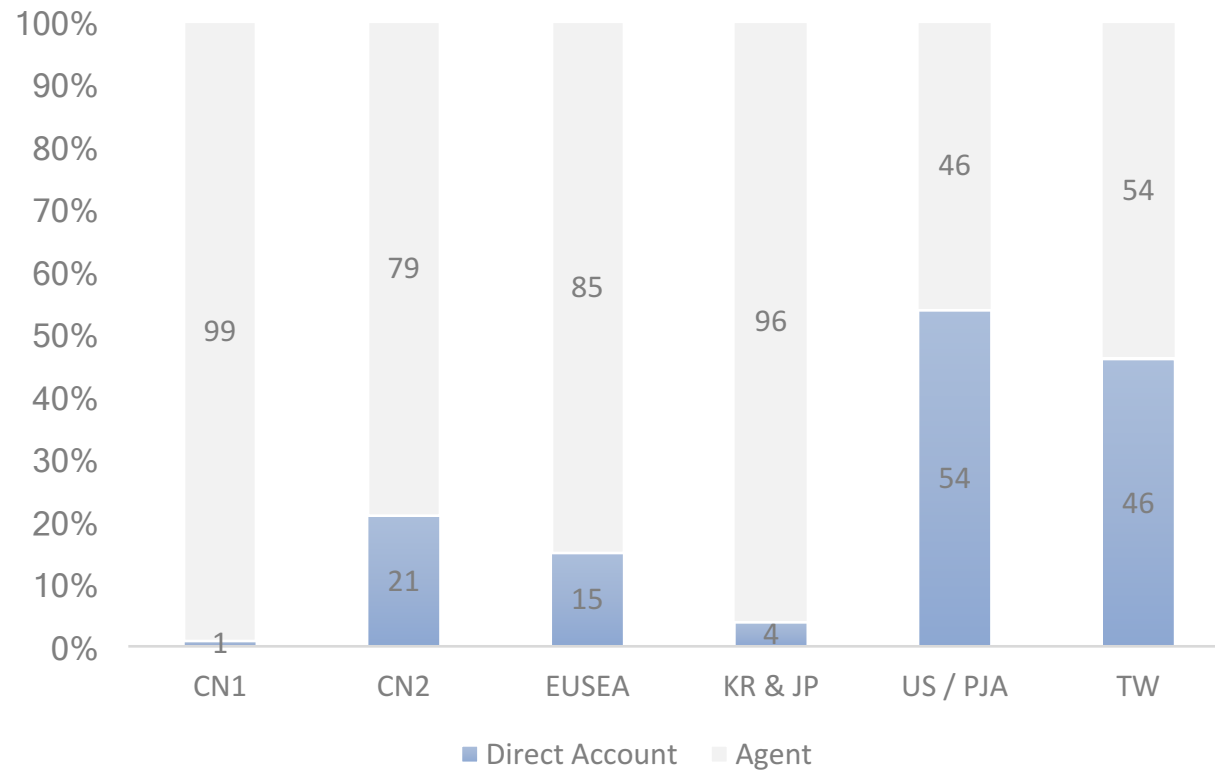


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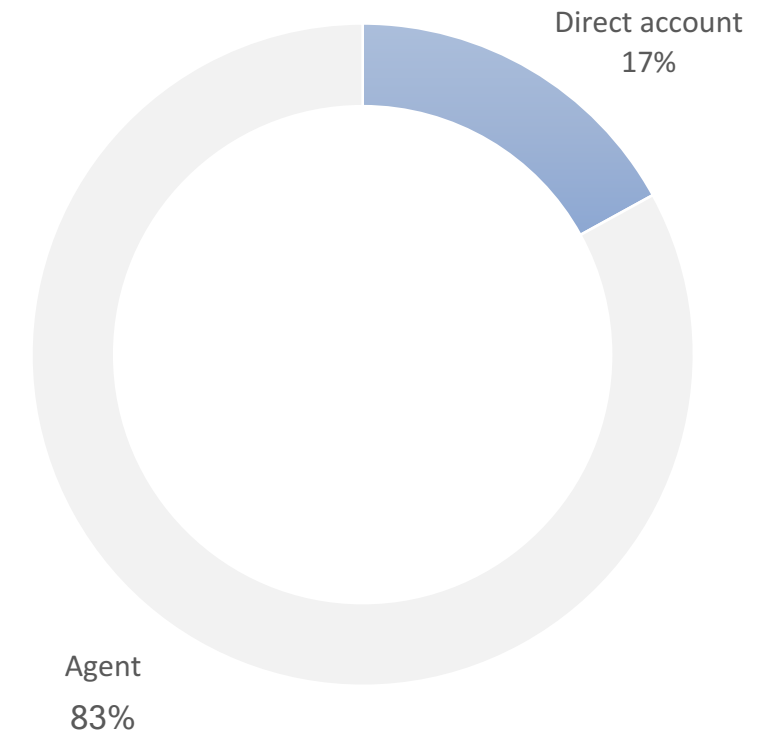


PANJIT Automotive Market Channel - 2018

AU 2018 Sales Channel by region

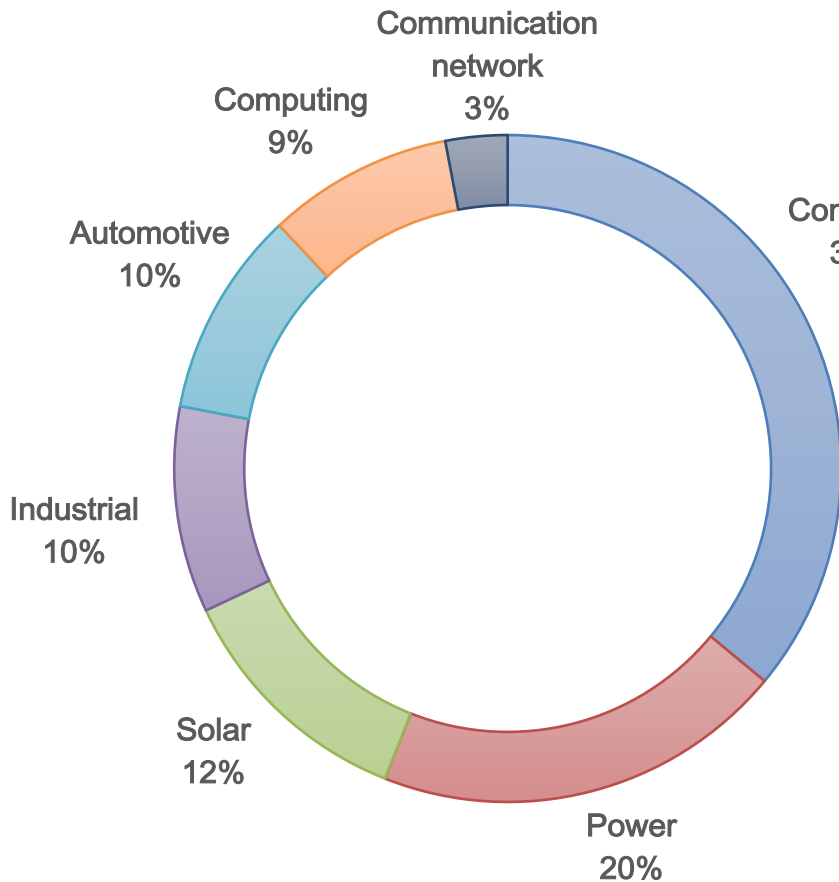


Sales Channel

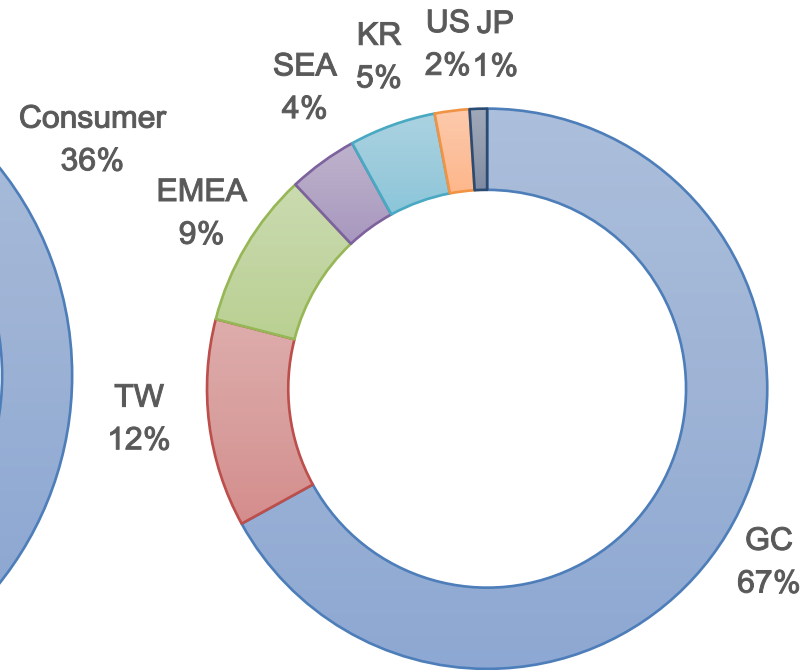


2019 Semiconductor BU Q1 Revenue Break down

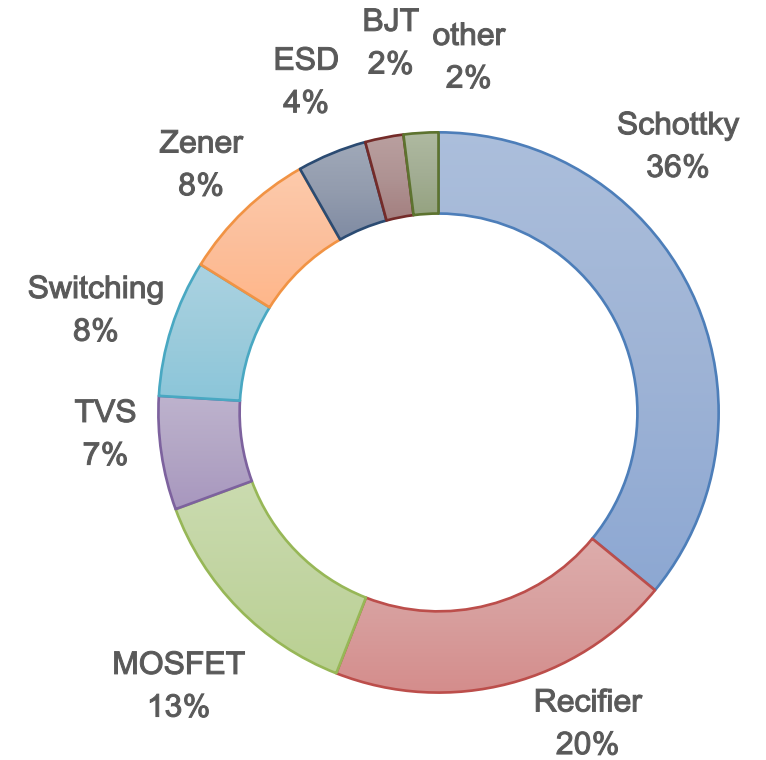
Application



Regional

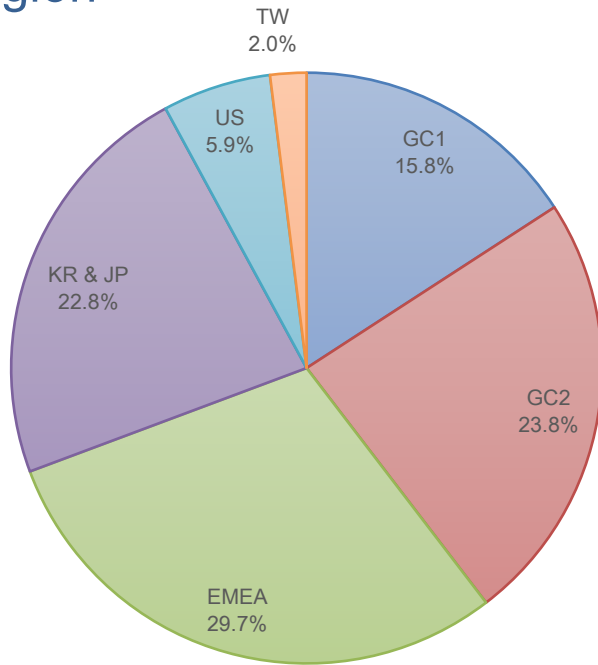


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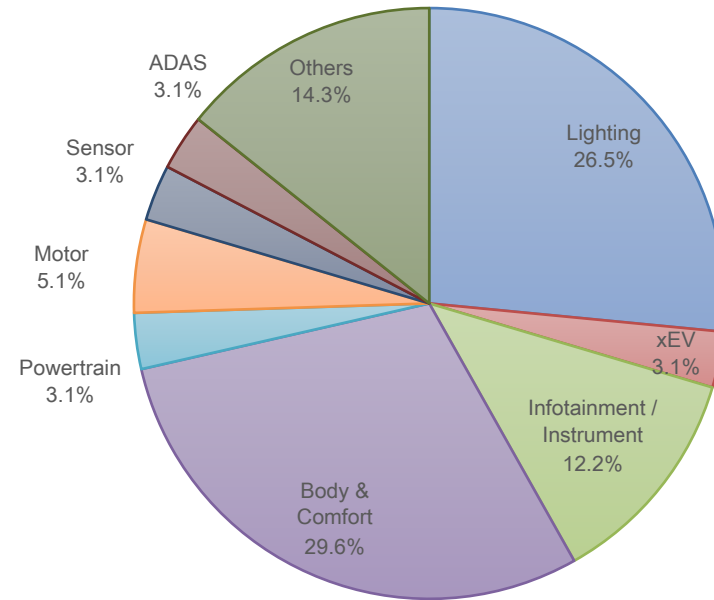


PANJIT Automotive 2019 YTD Revenue breakdown

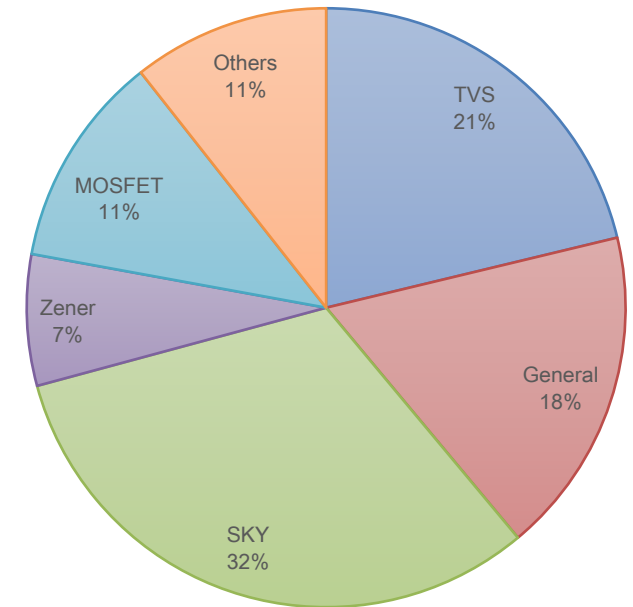
Region



System

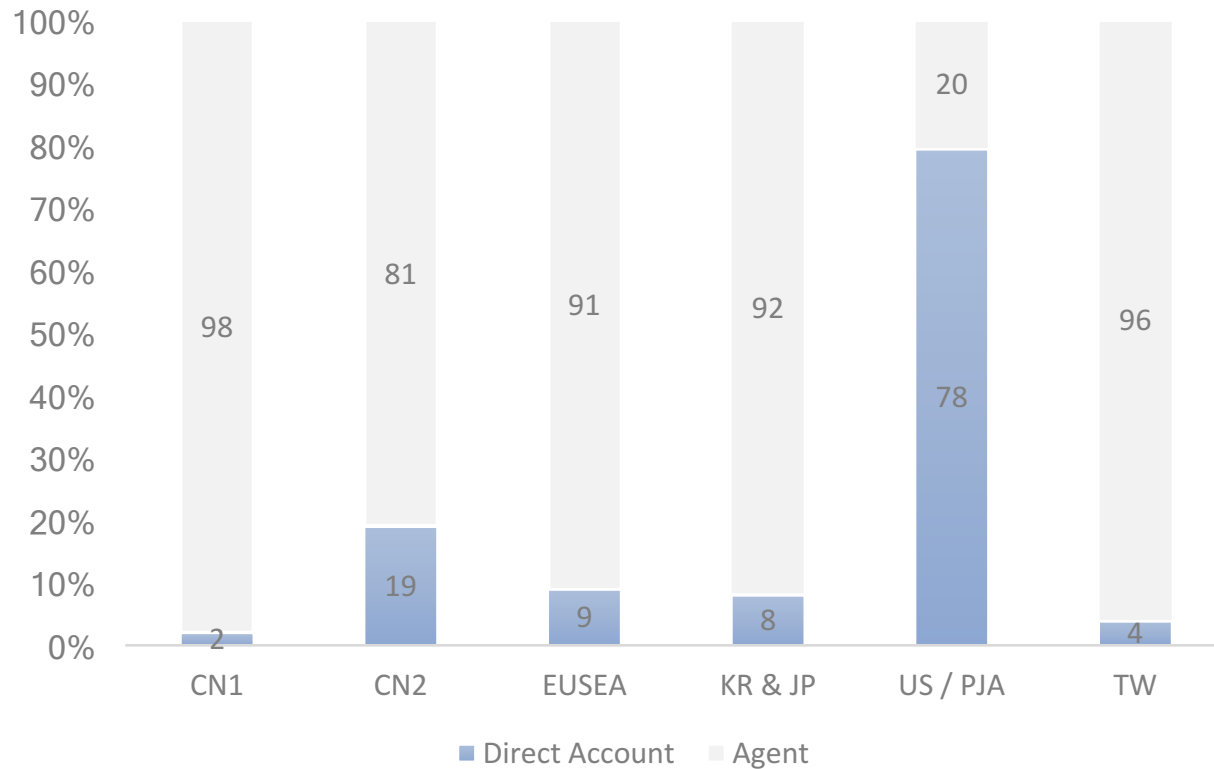


Function

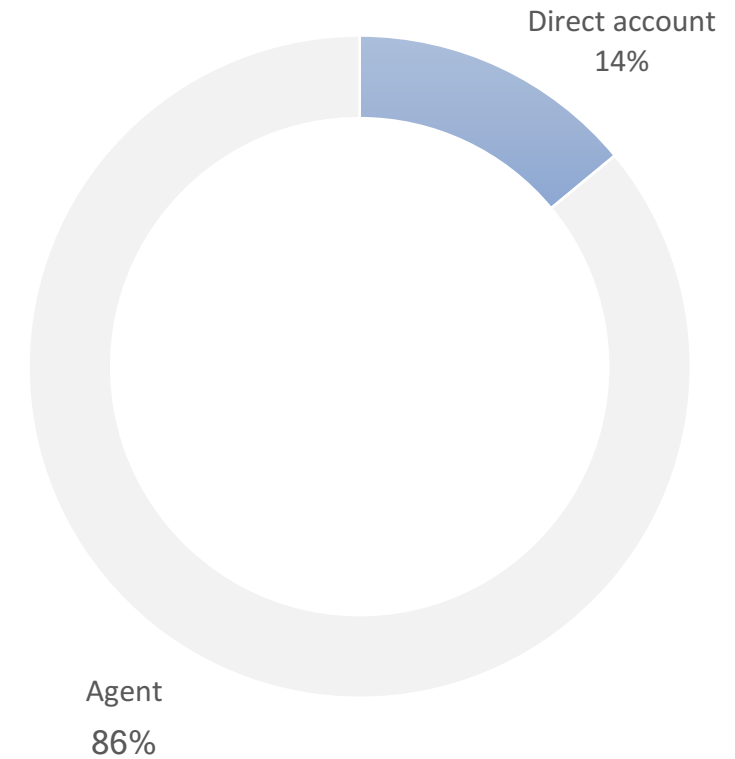


PANJIT Automotive Market Channel – 2019 YTD

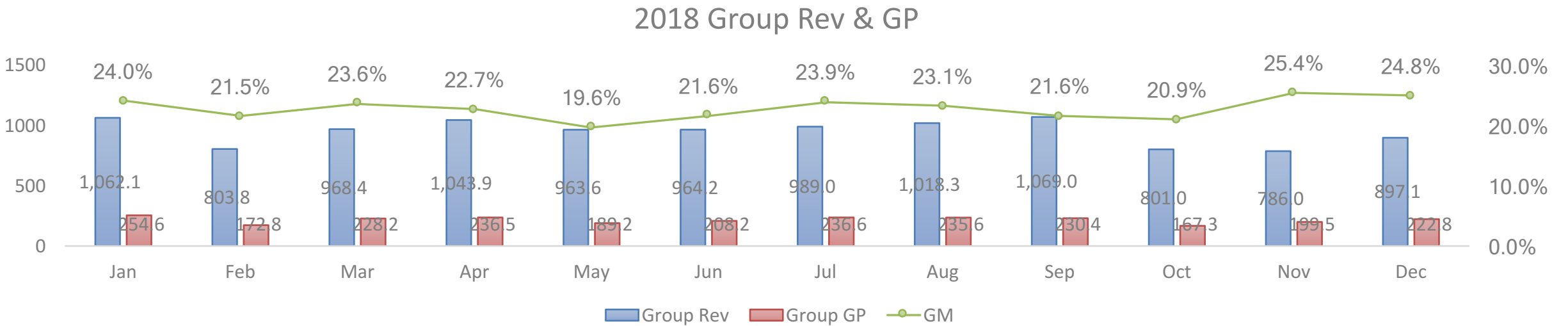
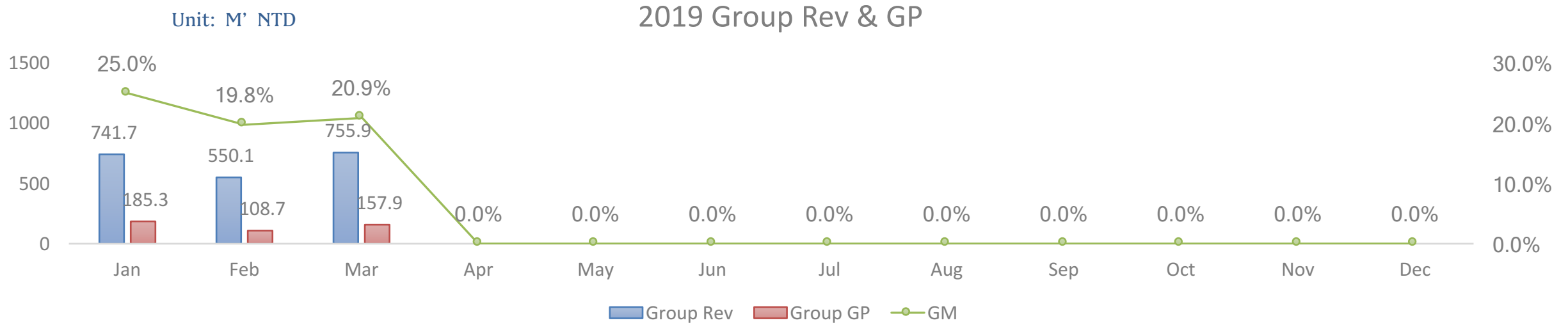
AU 2019 YTD Sales Channel by region



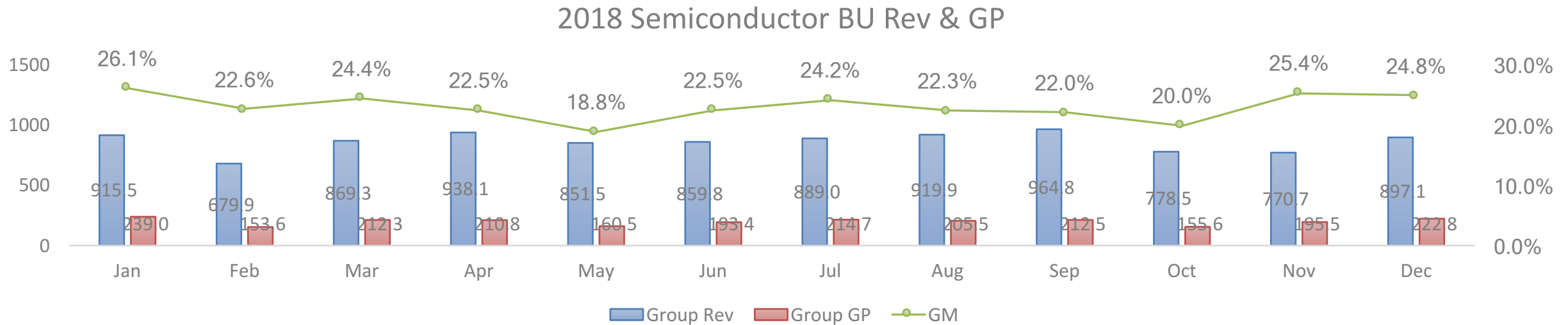
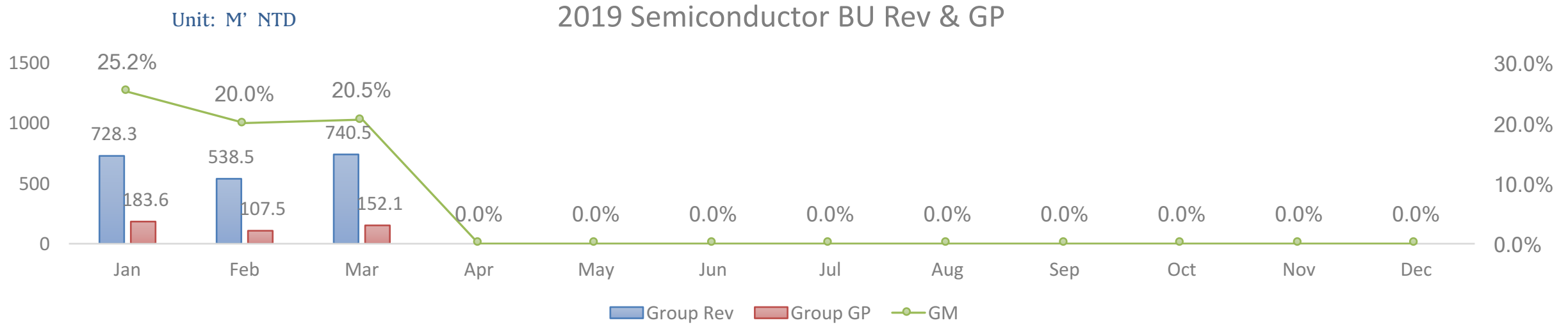
Sales Channel



PANJIT Group 2019 & 2018 - Rev & GP

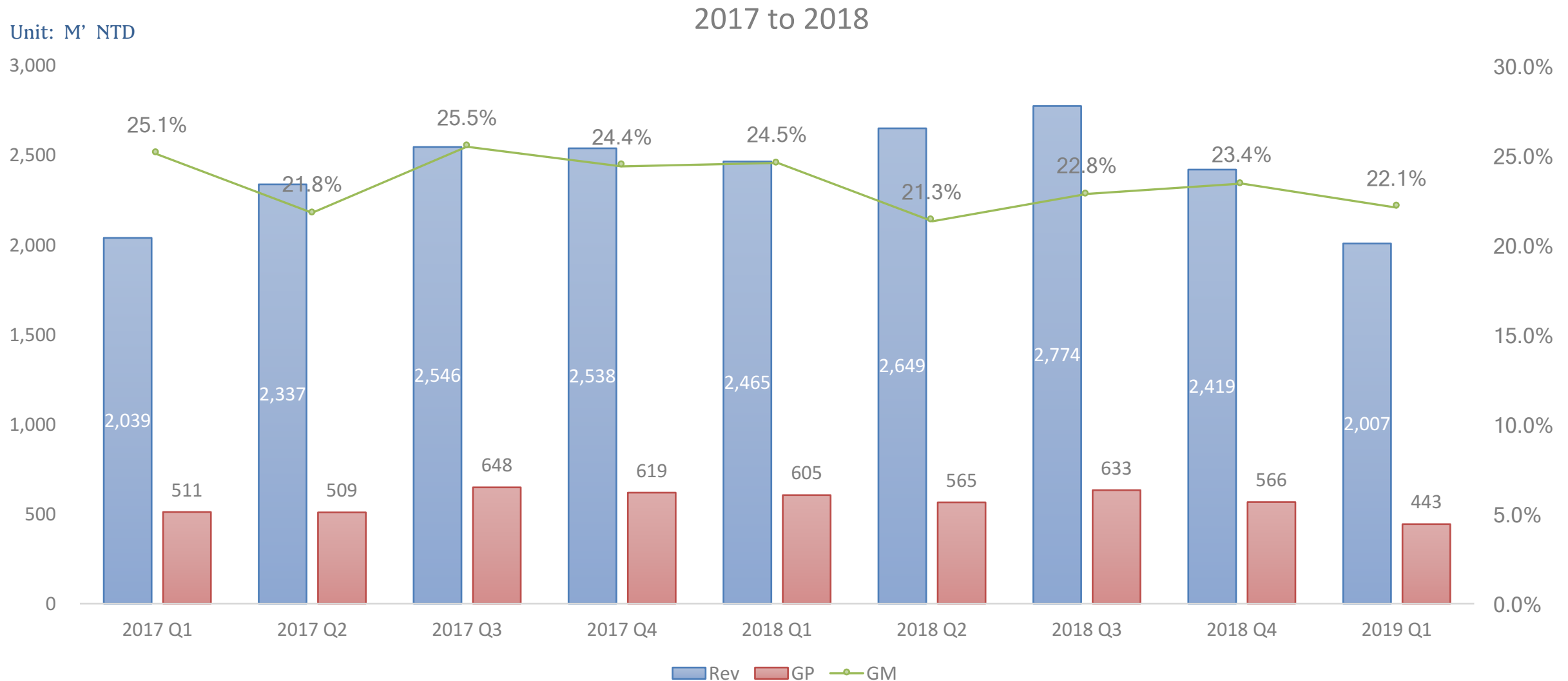


PANJIT Semiconductor BU 2019 YTD & 2018 - Rev & GP



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PANJIT Semiconductor BU 2017-2018 seasonal Revenue



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