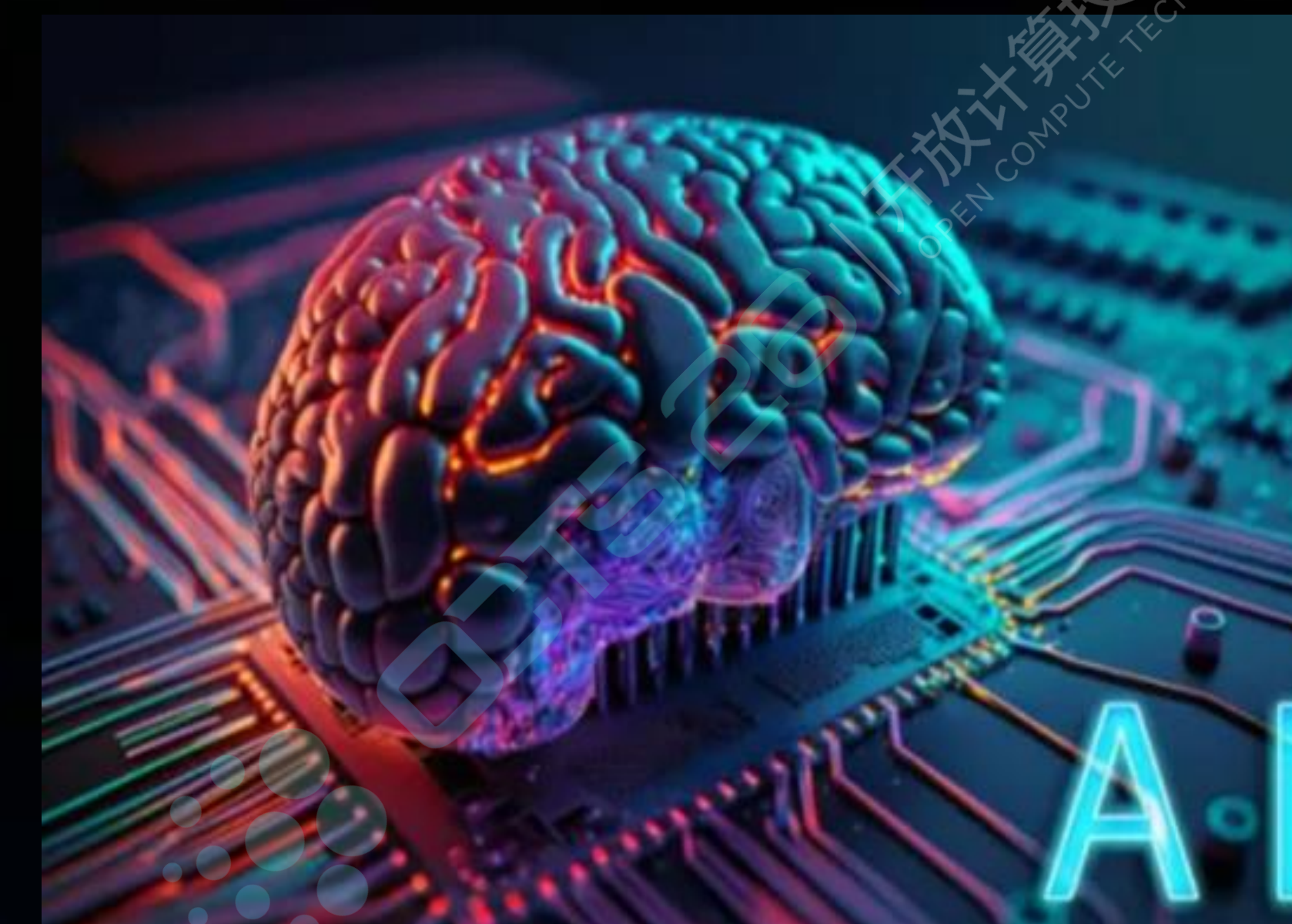


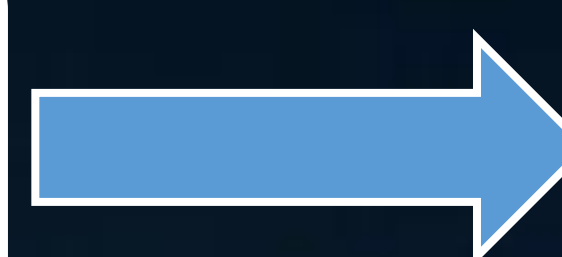
AI服务器与高性能计算电源(HPC)解决方案

惠科立 | 晶丰明源 HPC 解决方案部

时代革命



蒸汽时代



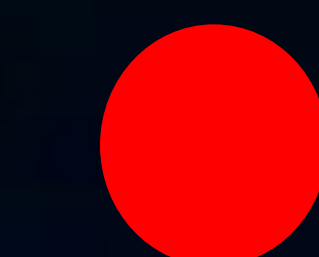
电气时代



信息时代



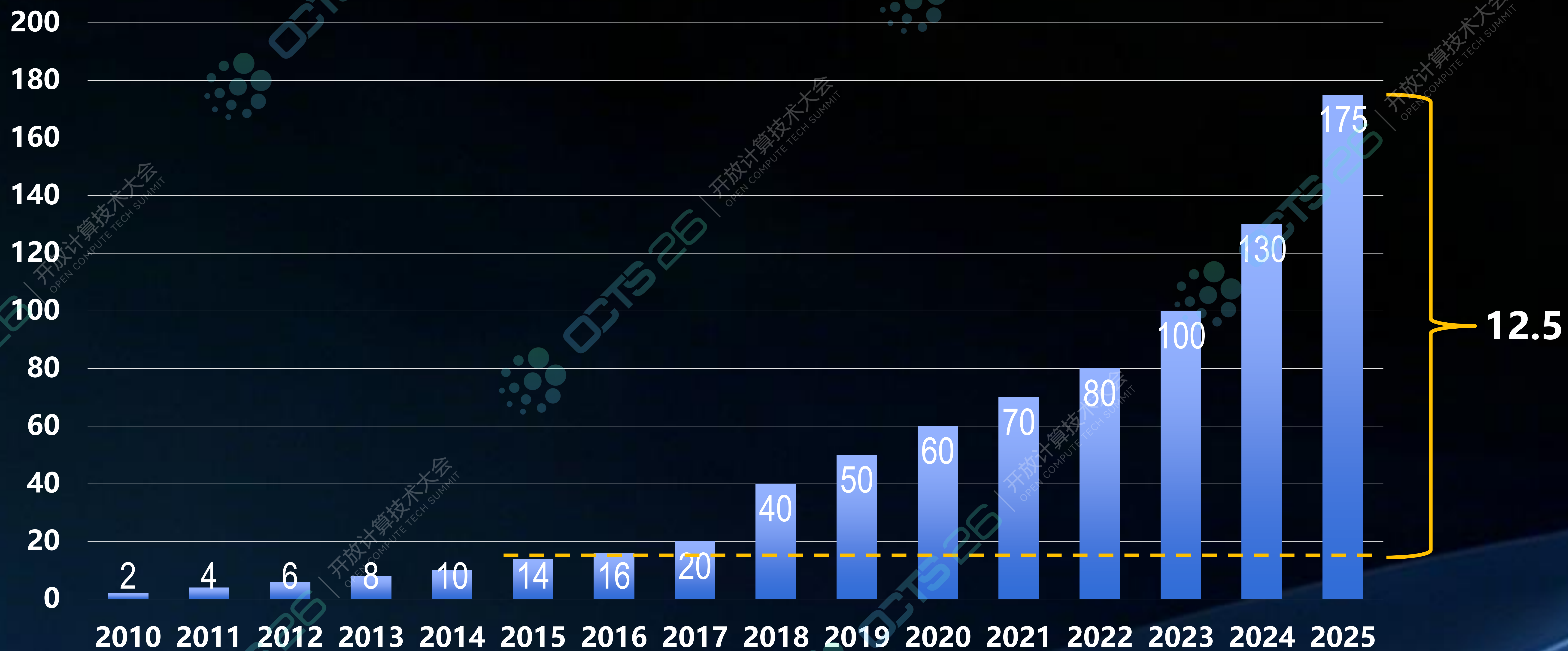
智能时代



Now

数据爆炸

全球数据总量增长趋势（单位ZB）



高新能计算场景



三次侧电源解决方案
多相控制器, DrMOS,
POL, Efuse



BPS Multi-Phase Controller Overview

Existing

PWMVID

BPD93204
4-Ph, 1-Rail
PWMVID/PMBus

BPD93136
16-Ph, 2-Rail
PWMVID/PMBus

AVSBus

BPD95036/32/28
16/12/8-Ph, 2-Rail
AVSBus/PMBus

BPD95025
4+1-Ph, 2-Rail
AVSBus/PMBus

SVI3

BPD96058
8-Ph, 3-Rail
SVI3 r2.0

BPD96032/28
12/8-Ph, 2-Rail
SVI3 r1.0

PMBus

BPD92032/28
12/8-Ph, 2-Rail
PMBus

Developing

SVI3 r3.x

BPD96079
9-Ph, 4-Rail
SVI3 3.X

BPD96162A/128
12-Ph, 3-Rail/8-Ph, 2-rail
DCR/IMON
SVI3 3.X

BPD96236/32/28
16/12/8-Ph, 2-Rail
SVI3 3.X

Future

SVI3 r3.x

BPD96256
16-Ph, 3-Rail
SVI3 3.X/AVSBus/PMBus

BPD96279
9-Ph, 4-Rail
SVI3 3.X/AVSBus/PMBus

MP

ES

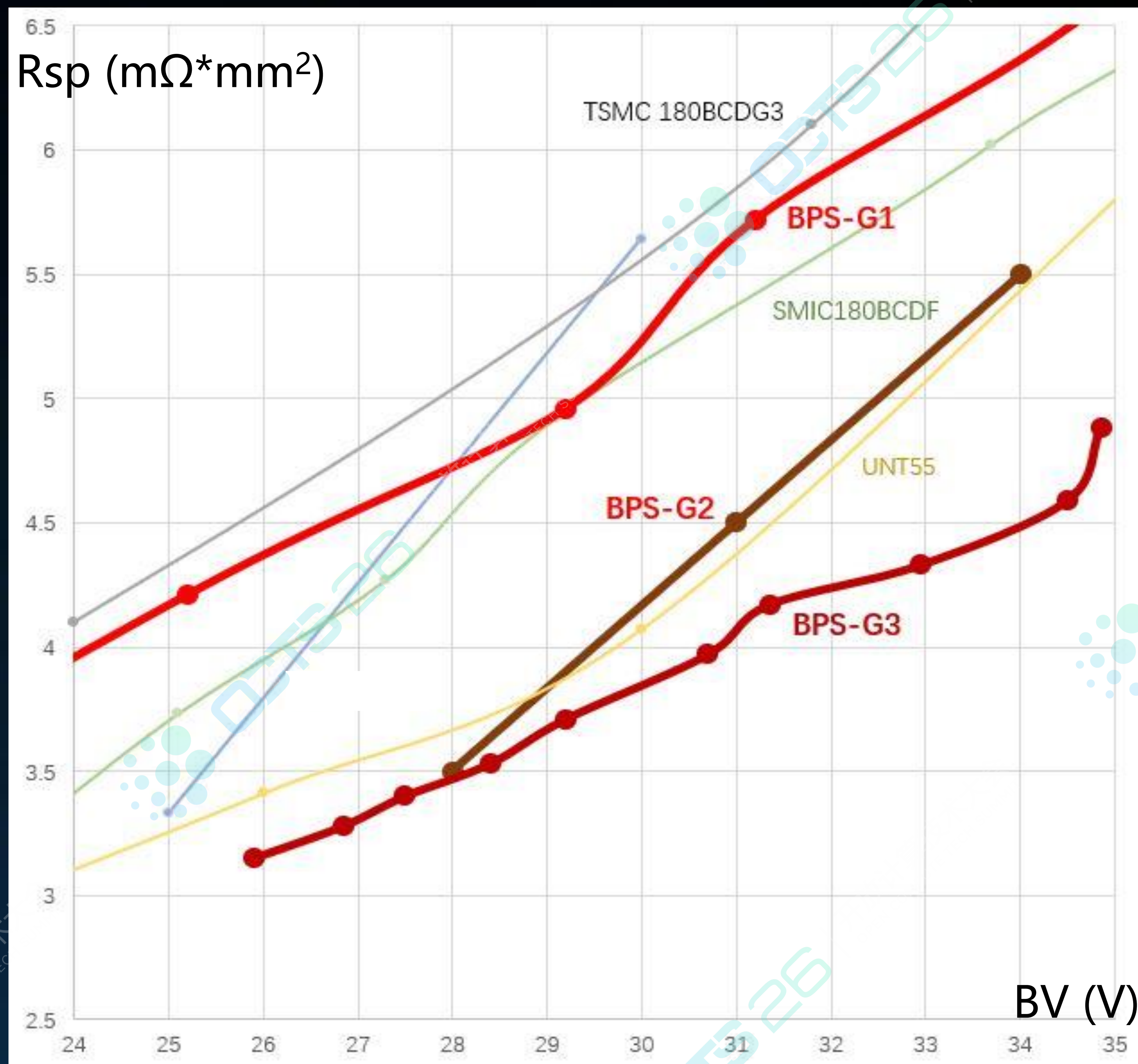
Develop

Plan

DrMOS/SPS --- VIN=12V (Server/DT/Graphics Card)

		50A		70A		90A					
Gen 2	MP ES Develop	BPC86350 VIN: 4.5~16V IOUT: 50A THWN OCP/NOCP TLGA - 5mmx5mm		BPC86355 VIN: 4.5~16V IOUT: 55A THWN OCP/NOCP TLGA - 5mmx5mm		BPD87360 VIN: 4.5~16V IOUT: 60A IMON/TSNS TLGA - 5mmx5mm		BPD87500 VIN: 4.5~16V IOUT: 100A IMON/TSNS TLGA - 4mmx6mm		BPD87600 VIN: 4.5~16V IOUT: 100A IMON/TSNS TLGA - 5mmx6mm	
		BPD80350E VIN: 4.5~16V IOUT: 50A TSNS OCP/NOCP TLGA - 5mmx5mm		BPD80360E VIN: 4.5~16V IOUT: 60A IMON/TSNS TLGA - 5mmx5mm		BPD80370E VIN: 4.5~16V IOUT: 70A IMON/TSNS TLGA - 5mmx5mm		BPD80590 VIN: 4.5~16V IOUT: 90A IMON/TSNS TLGA - 4mmx6mm		BPD80690(E) VIN: 4.5~16V IOUT: 90A IMON/TSNS TLGA - 5mmx6mm	

BPS Owned Process Technology



Monolithic BCD

- High Integration

Co-pack LDMOS

- Better performance
- Lower cost

G1 180nm

G3 150nm

2021

2024

2022

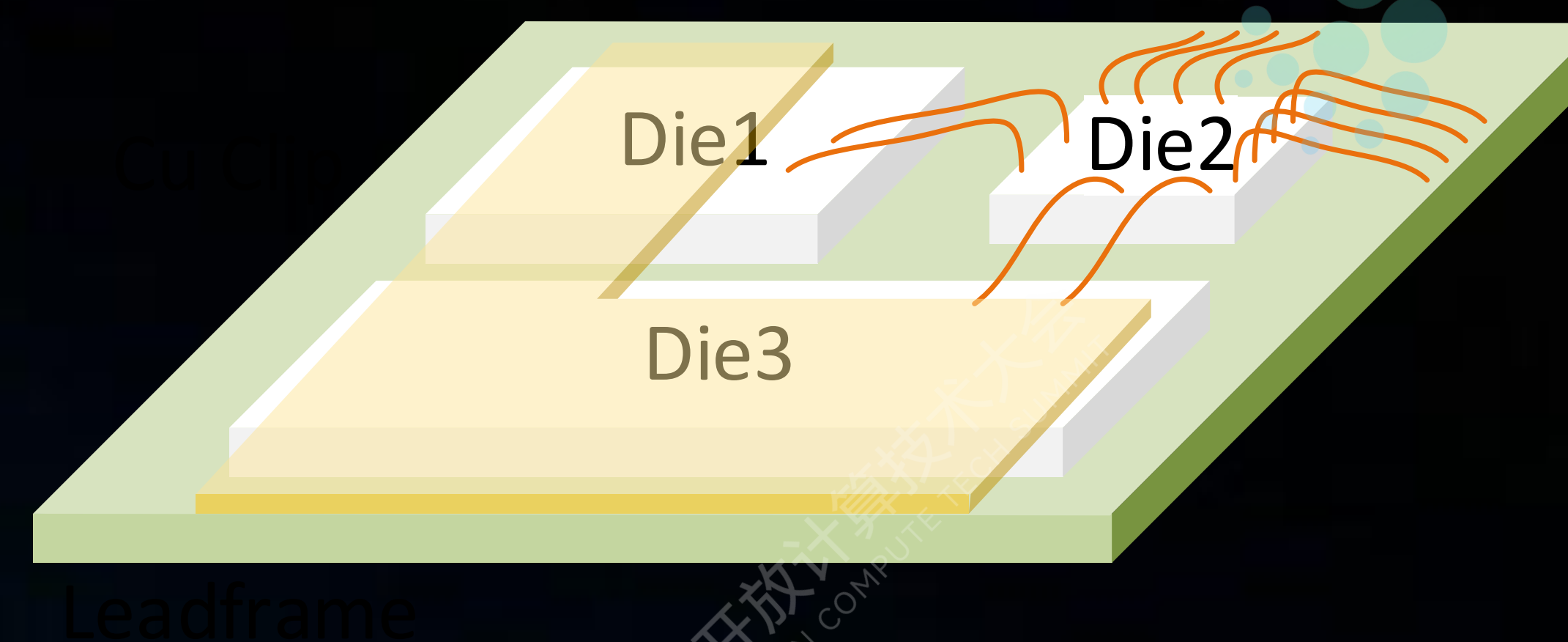
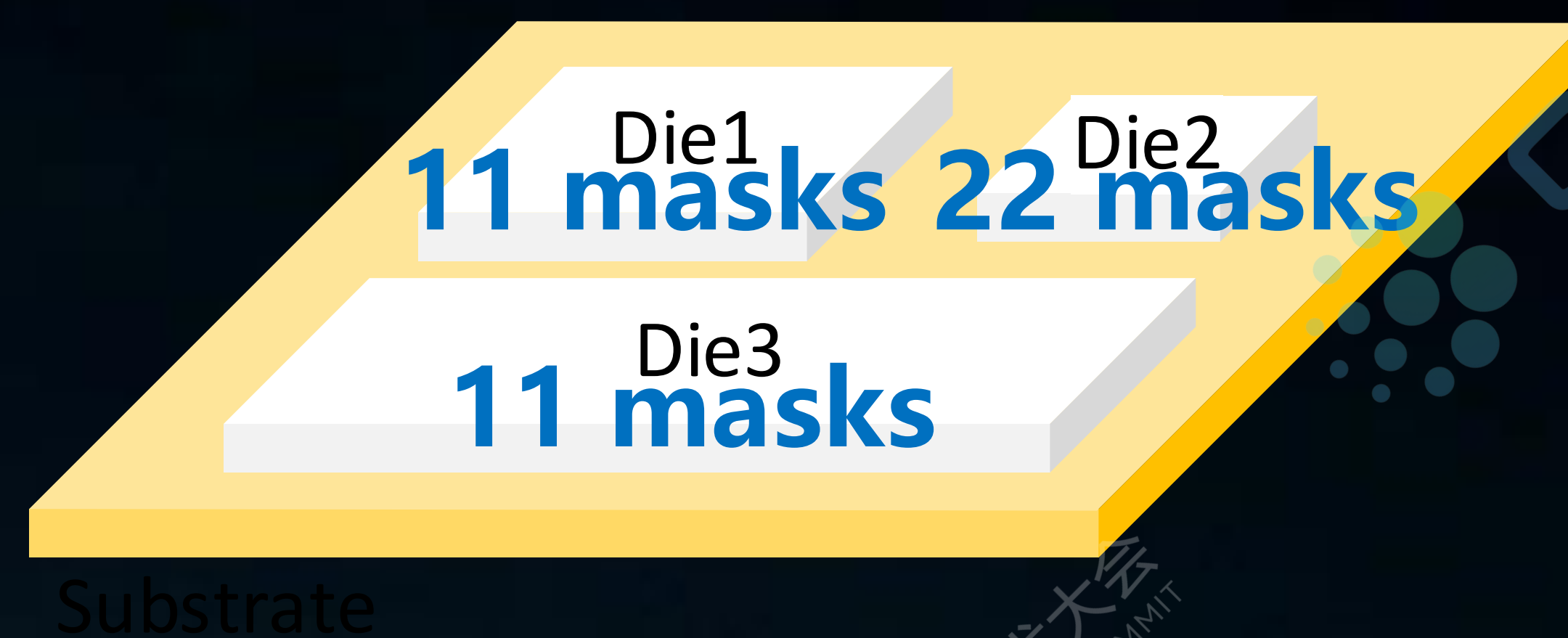
2026F

G2 65nm

G4 55nm

Keep investing on process technology for HPC power IC

BPS Package Innovation

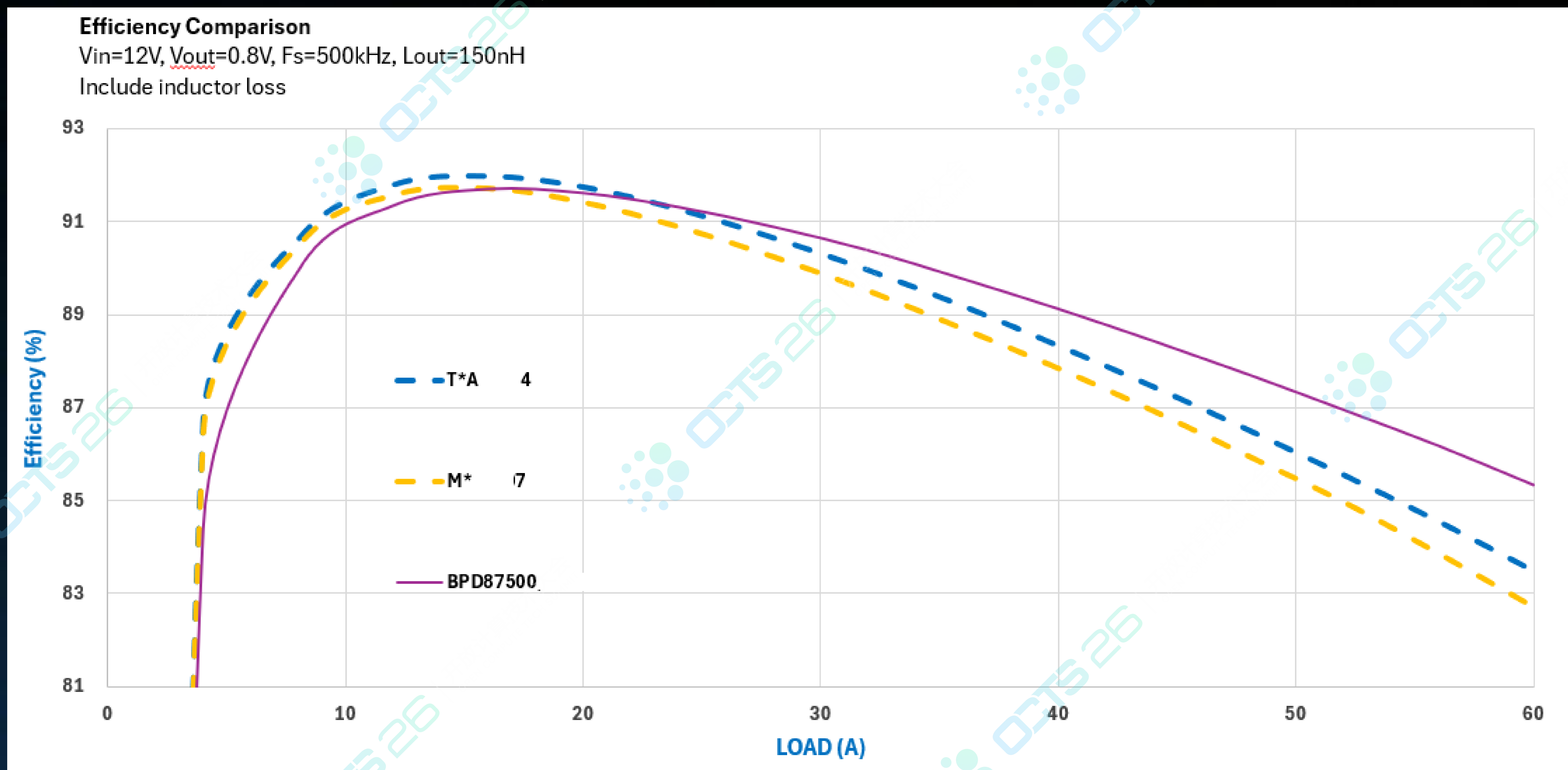


晶丰合封方案

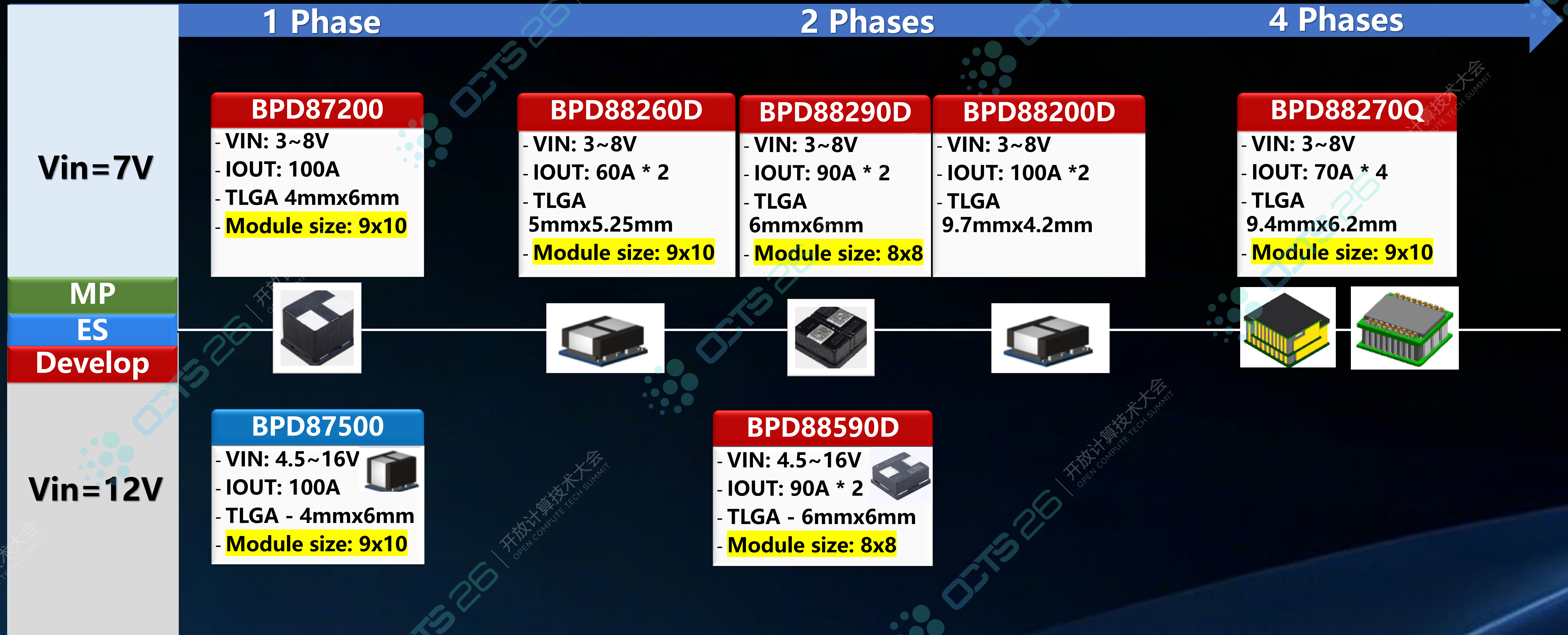


	晶丰合封方案	传统合封方案	单晶方案
质量	好	好	中
性能	好	好	中
Die成本	低	中	高
封装成本	低	高	低
Total Cost	低	高	高

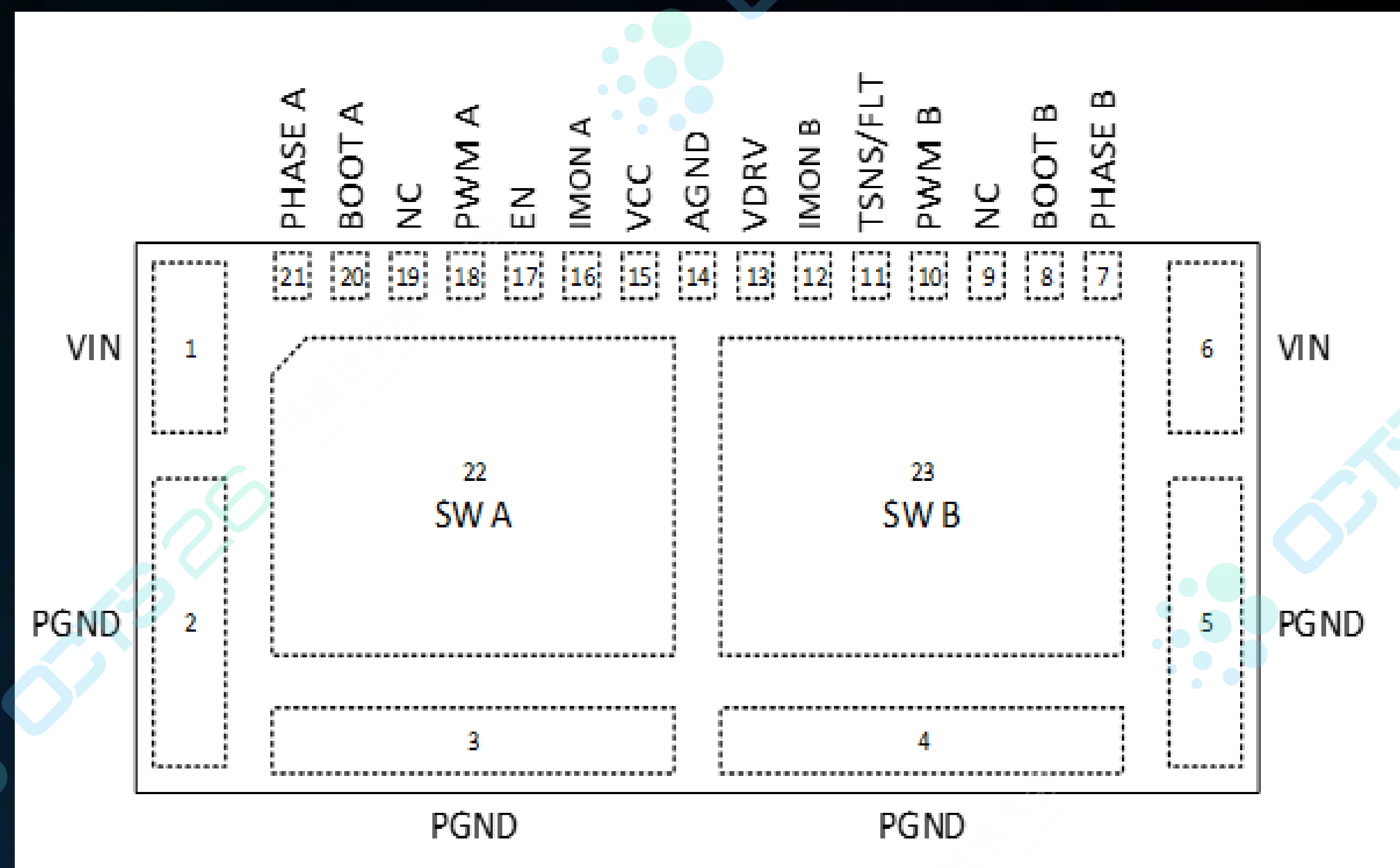
BPD87500 Efficiency



SPS Roadmap for Power Module



BPD88200D (9.7x4.2 2 phases SPS)



Pinout and Die Arrangement

Features

- Input Voltage: 3V to 8V
- VCC Supply Voltage: 4.5V to 5.5V
- Two Channel Power Stage
- 100A Current Capability, 50A/Phase (TDC)
- 2 x 0402, 10V, X7T, 4.7 μ F VIN caps
- 1 x 0201, 6.3V, X7R, 1 μ F VCC caps
- 1 x 0201, 6.3V, X7R, 1 μ F VDRV caps
- 2 x 0201, 6.3V, X7R, 100nF BOOT caps
- Integrated Thermal Monitor (TSNS, 8mV/°C)
- Integrated Current Monitor (IMON, 5 μ A/A)
- Exposed Top Package
- 9.7mm x 4.2mm TLGA Package
- RoHS Compliant and Halogen Free

THANKS